

**TOSHIBA**

# Isolators and Solid State Relays



**Selection  
Guide 2023**

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# 1. Isolators

## 1-1 Photocouplers

### 1-1-1 IC Output

#### Logic

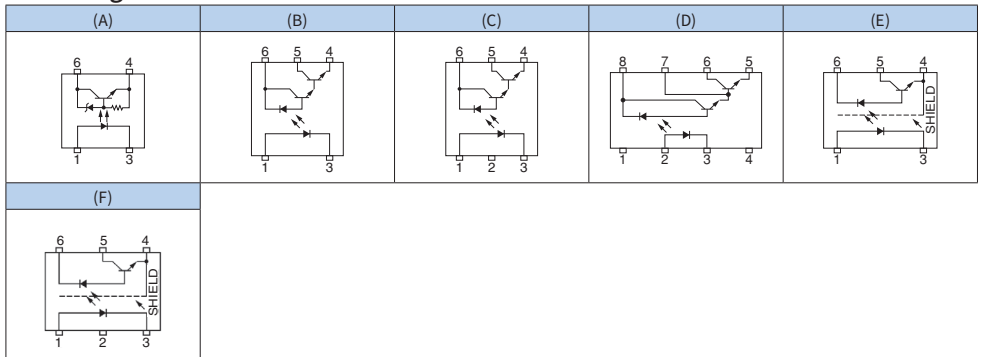
#### Open-collector Output Type

Part Number	Data Rate (Mbps)	Current Transfer Ratio CTR min (%) @Ta=25 °C	Propagation Delay Time		Supply Voltage Operating Range V <sub>CC</sub> (Note1)		High / Low-level Supply Current I <sub>CC</sub> max (mA)	Common Mode Transient Immunity CM min (kV / μs)	Operating Temperature T <sub>opr</sub>		Isolation Voltage BV <sub>s</sub> min (Vrms)	Toshiba Package	Pin Configuration	Lead Form Option
			t <sub>pLH</sub> max (μs)	t <sub>pHL</sub> max (μs)	min (V)	max (V)			min (°C)	max (°C)				
			TLP2301	0.02	50 (@I <sub>F</sub> =1 mA)	30			30	-				
TLP2701	0.02	50 (@I <sub>F</sub> =1 mA)	30	30	-	40	-	-	-55	125	5000	4pin SO6L	(A)	-
TLP2303	0.1	900 (@I <sub>F</sub> =0.5 mA)	90	20	4.5	18	1.5	+/-15	-40	125	3750	5pin SO6	(B)	-
TLP2703	0.1	900 (@I <sub>F</sub> =0.5 mA)	90	20	4.5	18	1.5	+/-15	-40	125	5000	SO6L	(C)	-
TLP2403	0.3	400 (@I <sub>F</sub> =0.5 mA)	90	30	-	16	1.5	-	-40	100	3750	SO8	(D)	-
TLP2309	1	15 (@I <sub>F</sub> =10 mA)	1	1	2.7	20	0.001	+/-15	-40	110	3750	5pin SO6	(E)	-
TLP2719 ☆	1	15 (@I <sub>F</sub> =16 mA)	2	0.85	4.5	20	0.001	+/-10	-40	100	5000	SO6L	(F)	✓

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Note1: Recommended Operating Condition

#### Pin Configuration



## High Speed Logic

### Open-collector Output Type

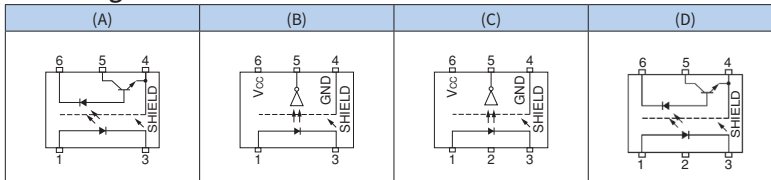
Part Number	Data Rate (Mbps)	Threshold LED Input Current $I_{FHL}$ max (mA)	Propagation Delay Time		Supply Voltage Operating Range $V_{CC}$ (Note1)		High / Low-level Supply Current $I_{CC}$ max (mA)	Common Mode Transient Immunity CM min (kV / $\mu$ s)	Operating Temperature $T_{opr}$		Isolation Voltage BV <sub>s</sub> min (Vrms)	Toshiba Package	Pin Configuration	Lead Form Option
			$t_{PLH}$ max (ns)	$t_{PHL}$ max (ns)	min (V)	max (V)			min (°C)	max (°C)				
			TLP2309	1	10 (Note2)	1000			1000	2.7				
TLP2719 ☆	1	10 (Note2)	2000	850	4.5	20	0.001	+/-10	-40	100	5000	SO6L	(D)	✓
TLP104	1	5	550	400	4.5	30	1.3	+/-15	-40	125	3750	5pin SO6	(B)	-
TLP2304 ☆	1	5	550	400	4.5	30	1.3	+/-20	-40	125	3750	5pin SO6	(B)	-
TLP2704	1	5	550	400	4.5	30	1.3	+/-20	-40	125	5000	SO6L	(C)	✓
TLP2362	10	5	100	100	2.7	5.5	4	+/-20	-40	125	3750	5pin SO6	(B)	-
TLP2363 ☆	15	2.4 (min 0.3)	80	80	2.7	5.5	4	+/-20	-40	105	3750	5pin SO6	(B)	-
TLP2368	20	5	60	60	2.7	5.5	4	+/-20	-40	125	3750	5pin SO6	(B)	-
TLP2768A	20	5	60	60	2.7	5.5	4	+/-20	-40	125	5000	SO6L	(C)	✓

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Note1: Recommended Operating Condition

Note2: Input on-state current ( $I_{F(on)}$ ) min (Recommended Operating Conditions)

### Pin Configuration



## Totem-pole (Inverter) Output Type

Part Number	Data Rate (Mbps)	Threshold LED Input Current $I_{FHL}$ max (mA)	Propagation Delay Time		Supply Voltage Operating Range $V_{CC} / V_{DD}$ (Note1)		High / Low level Supply Current $I_{CC} / I_{DD}$ max (mA)	Common Mode Transient Immunity CM min (kV / $\mu$ s)	Operating Temperature		Isolation Voltage BV <sub>s</sub> min (Vrms)	Toshiba Package	Pin Configuration	Lead Form Option
									$T_{opr}$					
			$t_{PLH}$ max (ns)	$t_{PHL}$ max (ns)	min (V)	max (V)			min (°C)	max (°C)				
TLP2358	5	1.6	250	250	3	20	3	+/-20	-40	125	3750	5pin SO6	(A)	-
TLP2348	10	1.6	120	120	4.5	30	3	+/-30	-40	110	3750	5pin SO6	(A)	-
TLP2748	10	1.6	120	120	4.5	30	3	+/-30	-40	110	5000	SO6L	(B)	✓
TLP2261 (Note2)	15	1.6	80	80	2.7	5.5	2	+/-20	-40	125	5000	SO8L	(C)	(Note3)
TLP2361	15	1.6	80	80	2.7	5.5	1	+/-20	-40	125	3750	5pin SO6	(A)	-
TLP2761	15	1.6	80	80	2.7	5.5	1	+/-20	-40	125	5000	SO6L	(B)	✓
TLP2366	20	3.5	55	55	2.7	5.5	3	+/-20	-40	125	3750	5pin SO6	(A)	-
TLP2766A ☆	20	3.5	55	55	2.7	5.5	3	+/-20	-40	125	5000	SO6L	(B)	✓
TLP2367	50	4	20	20	2.7	5.5	2.5	+/-25	-40	125	3750	5pin SO6	(D)	-
TLP2767	50	4	20	20	2.7	5.5	2.5	+/-25	-40	125	5000	SO6L	(E)	✓

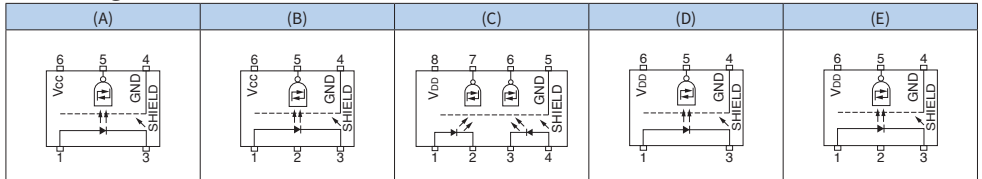
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Note1: Recommended Operating Condition

Note2: Dual channel version

Note3: This product supports only SO8L(LF4) lead form option.

## Pin Configuration



## Totem-pole (Buffer) Output Type

Part Number	Data Rate  (Mbps)	Threshold LED Input Current  I <sub>FLH</sub> max (mA)	Propagation Delay Time		Supply Voltage Operating Range  V <sub>CC</sub> / V <sub>DD</sub> (Note1)		High / Low-level Supply Current  I <sub>CC</sub> / I <sub>DD</sub> max (mA)	Common Mode Transient Immunity  CM min (kV / μs)	Operating Temperature		Isolation Voltage  BV <sub>s</sub> min (Vrms)	Toshiba Package	Pin Configuration	Lead Form Option
									T <sub>opr</sub>					
			t <sub>pLH</sub> max (ns)	t <sub>pHL</sub> max (ns)	min (V)	max (V)	min (°C)	max (°C)						
TLP2310	5	1	250	250	2.7	5.5	0.3	+/-25	-40	125	3750	5pin SO6	(B)	-
TLP2210 (Note2)	5	1.3	250	250	2.7	5.5	0.6	+/-25	-40	125	5000	SO8L	(A)	(Note3)
TLP2312 ☆	5	1.6	250	250	2.2	5.5	0.5	+/-20	-40	125	3750	5pin SO6	(B)	-
TLP2710 ☆	5	1	250	250	2.7	5.5	0.3	+/-25	-40	125	5000	SO6L	(C)	✓
TLP2355	5	1.6	250	250	3	20	3	+/-20	-40	125	3750	5pin SO6	(D)	-
TLP2345	10	1.6	120	120	4.5	30	3	+/-30	-40	110	3750	5pin SO6	(D)	-
TLP2745	10	1.6	120	120	4.5	30	3	+/-30	-40	110	5000	SO6L	(F)	✓
TLP2735	10	3	100	100	9	15	4.5	+/-25	-40	125	5000	SO6L	(C)	-
TLP2270 (Note2)	20	1	60	60	2.7	5.5	0.8	+/-20	-40	125	5000	SO8L	(A)	(Note3)
TLP2370	20	1	60	60	2.7	5.5	0.4	+/-20	-40	125	3750	5pin SO6	(B)	-
TLP2770	20	1	60	60	2.7	5.5	0.4	+/-20	-40	125	5000	SO6L	(C)	-
TLP2372 ☆	20	1.6	75	75	2.2	5.5	0.5	+/-20	-40	125	3750	5pin SO6	(B)	-

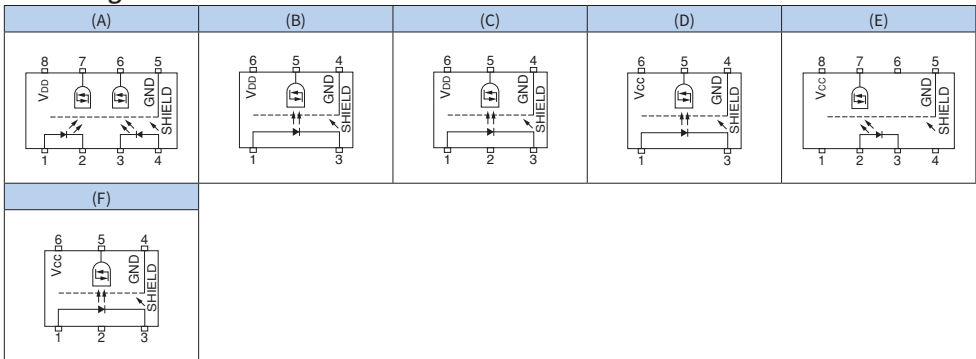
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Note1: Recommended Operating Condition

Note2: Dual channel version

Note3: This product supports only SO8L(LF4) lead form option.

## Pin Configuration



## AC Input Type

### Totem-pole (Inverter) Output Type

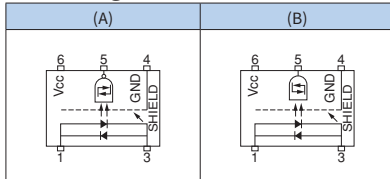
Part Number	Data Rate (Mbps)	Threshold LED Input Current  I <sub>FHL</sub> max (mA)	Propagation Delay Time		Supply Voltage Operating Range  V <sub>CC</sub> (Note1)		High / Low -level Supply Current  I <sub>CC</sub> max (mA)	Common Mode Transient Immunity  CM min (kV / μs)	Operating Temperature		Isolation Voltage  BV <sub>s</sub> min (Vrms)	Toshiba Package	Pin Configuration	Lead Form Option
									T <sub>opr</sub>					
			t <sub>pLH</sub> max (ns)	t <sub>pHL</sub> max (ns)	min (V)	max (V)			min (°C)	max (°C)				
TLP2398	5	2.3	250	250	3	20	3	+/-20	-40	125	3750	5pin SO6	(A)	-
TLP2391	10	2.5	100	100	2.7	5.5	1	+/-20	-40	125	3750	5pin SO6	(A)	-

### Totem-pole (Buffer) Output Type

Part Number	Data Rate (Mbps)	Threshold LED Input Current  I <sub>FLH</sub> max (mA)	Propagation Delay Time		Supply Voltage Operating Range  V <sub>CC</sub> (Note1)		High / Low -level Supply Current  I <sub>CC</sub> max (mA)	Common Mode Transient Immunity  CM min (kV / μs)	Operating Temperature		Isolation Voltage  BV <sub>s</sub> min (Vrms)	Toshiba Package	Pin Configuration	Lead Form Option
									T <sub>opr</sub>					
			t <sub>pLH</sub> max (ns)	t <sub>pHL</sub> max (ns)	min (V)	max (V)			min (°C)	max (°C)				
TLP2395	5	2.3	250	250	3	20	3	+/-20	-40	125	3750	5pin SO6	(B)	-

Note1: Recommended Operating Condition

### Pin Configuration



## ■ IPM Driver

### Open-collector Output Type

Part Number	Data Rate (Mbps)	Threshold LED Input Current IFHL max (mA)	Propagation Delay Time tpLH max (ns) / tpHL max (ns)		Supply Voltage Operating Range Vcc (Note1)		High / Low -level Supply Current Icc max (mA)	Common Mode Transient Immunity CM min (kV / μs)	Operating Temperature Topr		Isolation Voltage BV <sub>s</sub> min (Vrms)	Toshiba Package	Pin Configuration	Lead Form Option
					min (V)	max (V)			min (°C)	max (°C)				
					TLP104	1			5	550				
TLP2304 ☆	1	5	550	400	4.5	30	1.3	+/-20	-40	125	3750	5pin SO6	(A)	-
TLP2704	1	5	550	400	4.5	30	1.3	+/-20	-40	125	5000	SO6L	(B)	✓

### Totem-pole (Inverter) Output Type

Part Number	Data Rate (Mbps)	Threshold LED Input Current IFHL max (mA)	Propagation Delay Time tpLH max (ns) / tpHL max (ns)		Supply Voltage Operating Range Vcc (Note1)		High / Low -level Supply Current Icc max (mA)	Common Mode Transient Immunity CM min (kV / μs)	Operating Temperature Topr		Isolation Voltage BV <sub>s</sub> min (Vrms)	Toshiba Package	Pin Configuration	Lead Form Option
					min (V)	max (V)			min (°C)	max (°C)				
					TLP2358	5			1.6	250				
TLP2348	10	1.6	120	120	4.5	30	3	+/-30	-40	110	3750	5pin SO6	(C)	-
TLP2748	10	1.6	120	120	4.5	30	3	+/-30	-40	110	5000	SO6L	(D)	✓

### Totem-pole (Buffer) Output Type

Part Number	Data Rate (Mbps)	Threshold LED Input Current IFHL max (mA)	Propagation Delay Time tpLH max (ns) / tpHL max (ns)		Supply Voltage Operating Range Vcc (Note1)		High / Low -level Supply Current Icc max (mA)	Common Mode Transient Immunity CM min (kV / μs)	Operating Temperature Topr		Isolation Voltage BV <sub>s</sub> min (Vrms)	Toshiba Package	Pin Configuration	Lead Form Option
					min (V)	max (V)			min (°C)	max (°C)				
					TLP2355	5			1.6	250				
TLP2345	10	1.6	120	120	4.5	30	3	+/-30	-40	110	3750	5pin SO6	(E)	-
TLP2745	10	1.6	120	120	4.5	30	3	+/-30	-40	110	5000	SO6L	(F)	✓
TLP2735	10	3	100	100	9	15	4.5	+/-25	-40	125	5000	SO6L	(F)	-

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Note1: Recommended Operating Condition



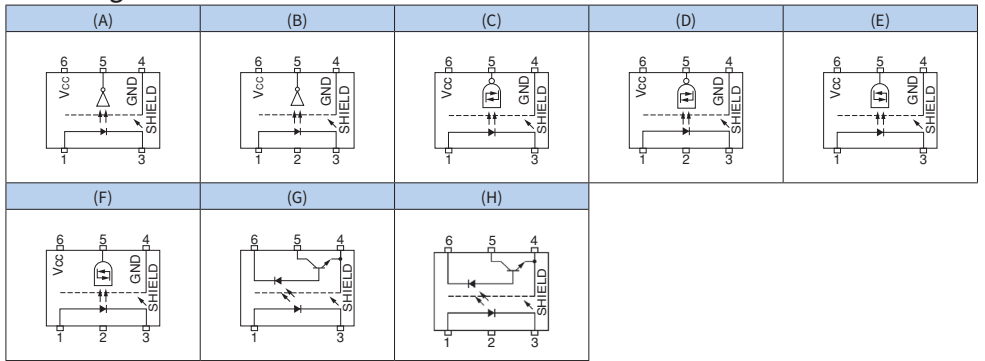
## Open-collector Output Type

Part Number	Data Rate (Mbps)	Current Transfer Ratio CTR min (%) @Ta=25 °C	Propagation Delay Time		Supply Voltage Operating Range V <sub>CC</sub> (Note1)		High / Low level Supply Current I <sub>CC</sub> max (mA)	Common Mode Transient Immunity CM min (kV / μs)	Operating Temperature T <sub>opr</sub>		Isolation Voltage BV <sub>s</sub> min (Vrms)	Toshiba Package	Pin Configuration	Lead Form Option
			t <sub>pLH</sub> max (ns)	t <sub>pHL</sub> max (ns)	min (V)	max (V)			min (°C)	max (°C)				
			TLP109 (IGM)	1	25 (@I <sub>F</sub> =10 mA)	1000			1000	-				
TLP2719 ☆	1	15 (@I <sub>F</sub> =16 mA)	2000	850	4.5	20	0.001	+/-10	-40	100	5000	SO6L	(H)	✓

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Note1: Recommended Operating Condition

## Pin Configuration



# IGBT / MOSFET Driver

## Totem-pole (Buffer) Output Type

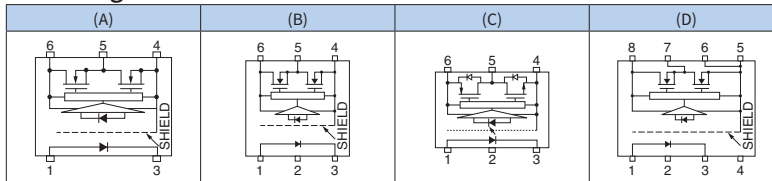
Part Number	Output Current (Note2)  I <sub>OPH</sub> or I <sub>OPL</sub> max (A)	Threshold LED Input Current  I <sub>FLH</sub> max (mA)	Propagation Delay Time		Supply Voltage Operating Range  V <sub>CC</sub> (Note1)		High / Low-level Supply Current  I <sub>CC</sub> max (mA)	Common Mode Transient Immunity  CM min (kV / μs)	Operating Temperature  T <sub>opr</sub>		Isolation Voltage  BV <sub>s</sub> min (Vrms)	Toshiba Package	Pin Configuration	Lead Form Option
			τ <sub>pLH</sub> max (ns)	τ <sub>pHL</sub> max (ns)	min (V)	max (V)			min (°C)	max (°C)				
			TLP155E	+/-0.6	7.5	200			200	10				
TLP151A	+/-0.6	5	500	500	10	30	2	+/-20	-40	110	3750	5pin SO6	(A)	-
TLP5701	+/-0.6	5	500	500	10	30	2	+/-20	-40	110	5000	SO6L	(B)	✓
TLP5751	+/-1.0	4	150	150	15	30	3	+/-35	-40	110	5000	SO6L	(C)	✓
TLP5751H ☆	+/-1.0	4	150	150	15	30	3	+/-35	-40	125	5000	SO6L	(C)	✓
TLP5771	+/-1.0	2	150	150	10	30	3	+/-35	-40	110	5000	SO6L	(C)	✓
TLP5771H ☆	+/-1.0	2	150	150	10	30	3	+/-35	-40	125	5000	SO6L	(C)	✓
TLP5752	+/-2.5	4	150	150	15	30	3	+/-35	-40	110	5000	SO6L	(C)	✓
TLP5752H ☆	+/-2.5	4	150	150	15	30	3	+/-35	-40	125	5000	SO6L	(C)	✓
TLP5772	+/-2.5	2	150	150	10	30	3	+/-35	-40	110	5000	SO6L	(C)	✓
TLP5772H ☆	+/-2.5	2	150	150	10	30	3	+/-35	-40	125	5000	SO6L	(C)	✓
TLP152	+/-2.5	7.5	170	190	10	30	3	+/-20	-40	100	3750	5pin SO6	(A)	-
TLP5702	+/-2.5	5	200	200	15	30	3	+/-20	-40	110	5000	SO6L	(B)	✓
TLP5702H ☆	+/-2.5	5	200	200	15	30	3	+/-50	-40	125	5000	SO6L	(B)	✓
TLP5705H ☆	+/-5.0	5	200	200	15	30	3	+/-50	-40	125	5000	SO6L	(B)	✓
TLP5832 ☆	+/-2.5	5	200	200	15	30	3	+/-20	-40	110	5000	SO8L	(D)	-
TLP5754	+/-4.0	4	150	150	15	30	3	+/-35	-40	110	5000	SO6L	(C)	✓
TLP5754H ☆	+/-4.0	4	150	150	15	30	3	+/-35	-40	125	5000	SO6L	(C)	✓
TLP5774	+/-4.0	2	150	150	10	30	3	+/-35	-40	110	5000	SO6L	(C)	✓
TLP5774H ☆	+/-4.0	2	150	150	10	30	3	+/-35	-40	125	5000	SO6L	(C)	✓

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Note1: Recommended Operating Condition

Note2: Absolute Maximum Ratings

## Pin Configuration



# Smart Gate Driver

Part Number	Output Current (Note2)	Threshold LED Input Current	Propagation Delay Time		Supply Voltage Operating Range		High / Low -level Supply Current	Common Mode Transient Immunity	Operating Temperature		Isolation Voltage	Toshiba Package	Pin Configuration						
														V <sub>CC</sub> (Note1)		I <sub>CC</sub> max (mA)	T <sub>opr</sub>		BV <sub>s</sub> min (Vrms)
														t <sub>pLH</sub> max (ns)	t <sub>pHL</sub> max (ns)		min (V)	max (V)	
TLP5222 ☆	+/-2.5	6	250	250	15	30	5	+/-25	-40	110	5000	SO16L	(A)						
<ul style="list-style-type: none"> <li>• Non-rail to rail output</li> <li>• Active miller clamp</li> <li>• DESAT / UVLO protection and failure feedback</li> <li>• Auto reset</li> </ul>																			
TLP5214A	+/-4.0	6	150	150	15	30	3.8	+/-35	-40	110	5000	SO16L	(A)						
<ul style="list-style-type: none"> <li>• Rail to rail output</li> <li>• Active miller clamp</li> <li>• DESAT / UVLO protection and failure feedback</li> <li>• LED reset</li> </ul>																			
TLP5212 ☆	+/-2.5	6	250	250	15	30	5	+/-25	-40	110	5000	SO16L	(A)						
<ul style="list-style-type: none"> <li>• Non-rail to rail output</li> <li>• Active miller clamp</li> <li>• DESAT / UVLO protection and failure feedback</li> <li>• LED reset</li> </ul>																			
TLP5231 ☆	+/-2.5	3.5 (I <sub>FHL</sub> )	300	300	21.5	30	10.2	+/-25	-40	110	5000	SO16L	(B)						
<ul style="list-style-type: none"> <li>• High current IGBT / MOSFET Pre-drive Coupler</li> <li>• Rail to rail output</li> <li>• Overlap control for MOSFET buffer</li> <li>• Over current / UVLO protection and failure feedback</li> <li>• LED reset</li> </ul>																			

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Note1: Recommended Operating Condition

Note2: Absolute Maximum Ratings

## Pin Configuration

(A)				(B)			
1	V <sub>S</sub>	V <sub>E</sub>	16	1	N. C.	V <sub>E</sub>	16
2	V <sub>CC1</sub>	V <sub>LED</sub>	15	2	CATHODE	DESAT	15
3	FAULT	DESAT	14	3	ANODE	V <sub>GMOS</sub>	14
4	V <sub>S</sub>	V <sub>CC2</sub>	13	4	CATHODE	V <sub>CC2</sub>	13
5	CATHODE	V <sub>EE</sub>	12	5	V <sub>GN1</sub>	V <sub>OUTP</sub>	12
6	ANODE	V <sub>OUT</sub>	11	6	V <sub>CC1</sub>	V <sub>OUTN</sub>	11
7	ANODE	V <sub>CLAMP</sub>	10	7	FAULT	V <sub>LED</sub>	10
8	CATHODE	V <sub>EE</sub>	9	8	V <sub>GN1</sub>	V <sub>EE</sub>	9

# ■ Isolation Amplifiers / Delta-Sigma Modulators

## Analog Output

Part Number	Supply Voltage V <sub>DD1</sub> (V) V <sub>DD2</sub> (V) (Note1)	Supply Current max I <sub>DD1</sub> (mA) I <sub>DD2</sub> (mA)	Common Mode Transient Immunity CMTI typ. (kV / $\mu$ s)	V <sub>OUT</sub> Non-linearity NL <sub>200</sub> typ. (%)	Gain G typ. @Ta=25 °C (V / V)	Operating Temperature T <sub>opr</sub>		Isolation Voltage BV <sub>s</sub> min (Vrms)	Toshiba Package	Pin Configuration	Lead Form Option
						min (°C)	max (°C)				
TLP7820	4.5 to 5.5 3.0 to 5.5	12 10	20	0.02	8.2	-40	105	5000	SO8L	(A)	(Note2)
TLP7920	4.5 to 5.5 3.0 to 5.5	12 10	20	0.02	8.2	-40	105	5000	DIP8	(A)	✓

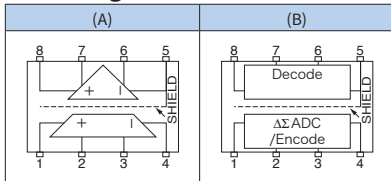
## Digital Output

Part Number	Supply Voltage V <sub>DD1</sub> (V) V <sub>DD2</sub> (V) (Note1)	Supply Current max I <sub>DD1</sub> (mA) I <sub>DD2</sub> (mA)	Common Mode Transient Immunity CMTI typ. (kV / $\mu$ s)	V <sub>OUT</sub> Non-linearity INL @Ta=-40 to 85 °C (LSB)	Gain Error G <sub>E</sub> typ. @Ta=25 °C (%)	Operating Temperature T <sub>opr</sub>		Isolation Voltage BV <sub>s</sub> min (Vrms)	Toshiba Package	Pin Configuration	Lead Form Option
						min (°C)	max (°C)				
TLP7830	4.5 to 5.5 3.0 to 5.5	12 8	20	-15 to 15	0.1	-40	105	5000	SO8L	(B)	(Note2)
TLP7930	4.5 to 5.5 3.0 to 5.5	12 8	20	-15 to 15	0.1	-40	105	5000	DIP8	(B)	✓

Note1: Recommended Operating Condition

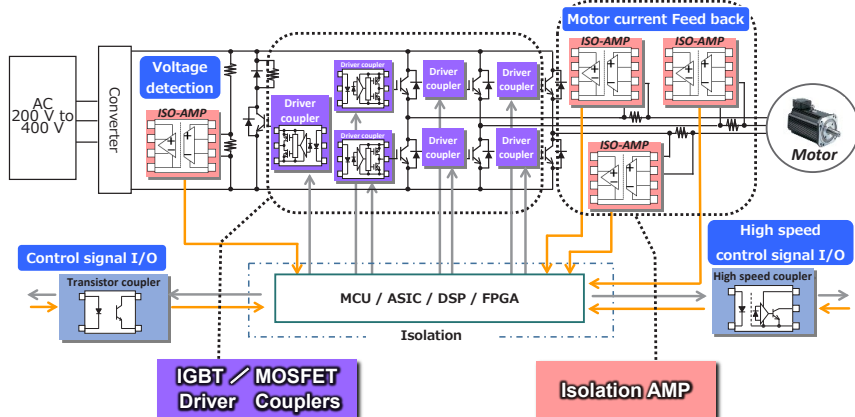
Note2: This product supports only SO8L(LF4) lead form option.

## Pin Configuration



# D-IGBT, MOSFET based AC-Servo Amp / Inverter

## Block diagram of Inverter



# 1-1-2 Transistor Output

Part Number	Input Type	Function	Current Transfer Ratio			Collector-Emitter Voltage	Collector Current	Operating Temperature		Isolation Voltage	Toshiba Package	Pin Configuration	Lead Form Option
			CTR ( $I_c / I_f$ ) @ $T_a=25^\circ\text{C}$					$T_{opr}$					
			min (%)	max (%)	Relevant Part	$V_{CE0}$ max (V)	$I_c$ max (A)	min ( $^\circ\text{C}$ )	max ( $^\circ\text{C}$ )	$BV_s$ min (Vrms)			
TLP185(SE)	DC	General-purpose	50	600	☆1	80	0.05	-55	110	3750	4pin SO6	(A)	-
TLP291(SE)			50	600	☆1	80	0.05	-55	110	3750	SO4	(B)	-
TLP291-4 (Note1)			50	400	☆3	80	0.05	-55	110	2500	SO16	(C)	-
TLP385			50	600	☆1	80	0.05	-55	110	5000	4pin SO6L	(A)	-
TLP785			50	600	☆1	80	0.05	-55	110	5000	DIP4 (TLP785)	(B)	✓
TLP183		Low $I_f$	50	600	☆1	80	0.05	-55	125	3750	4pin SO6	(A)	-
TLP293-4 (Note1)			50	600	☆4	80	0.05	-55	125	3750	SO16	(C)	-
TLP293			50	600	☆1	80	0.05	-55	125	3750	SO4	(B)	-
TLP383			50	600	☆3	80	0.05	-55	125	5000	4pin SO6L	(A)	-
TLP188		High $V_{CE0}$	50	600	☆3	350	0.05	-55	110	3750	4pin SO6	(A)	-
TLP388			50	600	☆3	350	0.05	-55	125	5000	4pin SO6L	(A)	-
TLP628M ☆			50	600	☆3	350	0.05	-55	125	5000	DIP4	(B)	✓
TLP184(SE)		AC	General-purpose	50	600	☆2	80	0.05	-55	110	3750	4pin SO6	(D)
TLP290(SE)	50			600	☆2	80	0.05	-55	110	3750	SO4	(E)	-
TLP290-4 (Note1)	50		400	☆3	80	0.05	-55	110	2500	SO16	(F)	-	
TLP182	Low $I_f$		50	600	☆2	80	0.05	-55	125	3750	4pin SO6	(D)	-
TLP292-4 (Note1)			50	600	☆4	80	0.05	-55	125	3750	SO16	(F)	-
TLP292			50	600	☆2	80	0.05	-55	125	3750	SO4	(E)	-
TLP620M ☆	50		600	☆2	80	0.05	-55	125	5000	DIP4	(E)	✓	
TLP187	DC		Darlington	1000	-	-	300	0.15	-55	110	3750	4pin SO6	(G)
TLP387		1000		-	-	300	0.15	-55	110	5000	4pin SO6L	(G)	-
TLP627M ☆		1000		-	-	300	0.15	-55	110	5000	DIP4	(H)	✓
TLP295-4 (Note1) ☆		Low $I_f$ / High Speed	100	700	-	80	0.05	-55	125	3750	SO16	(I)	-
TLP294-4 (Note1) ☆	AC		100	700	-	80	0.05	-55	125	3750	SO16	(I)	-

## Current Transfer Ratio Rank

Rank		Selectable Rank										General
		Y	GR	GB	BL	YH	GRL	GRH	BLL	LA	LGB	Blank
Current Transfer Ratio (%)	min	50	100	100	200	75	100	150	200	50	100	50
	max	150	300	600	600 (Note2)	150	200	300	400	600	600	600 (Note2)
Relevant Part	☆1	○	○	○	○	○	○	○	○			○
	☆2	○	○	○	○							○
	☆3			○								○
	☆4			○						○	○	○
Marking of Classification (Note3)		YE, Y+	GR, G, G+	GB, GR, G, G+, BL, B	BL, B	Y+	G	G+	B	LA, LB	LB	Blank, YE, Y+, GR, GB, G, G+, BL, B

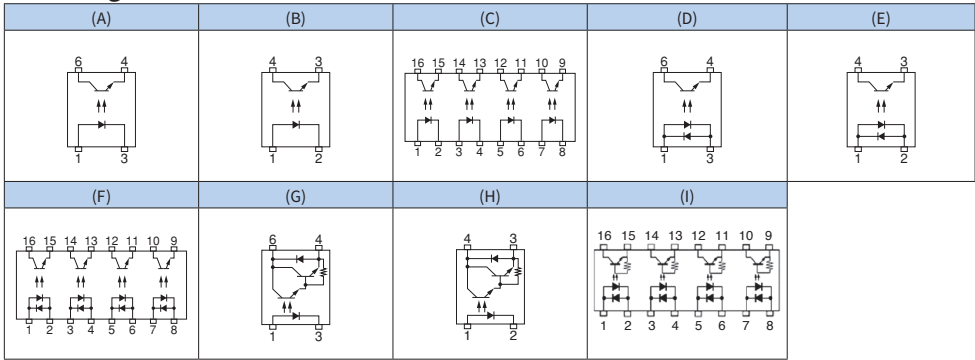
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Note1: 4-Channel version

Note2: 400% (max); TLP290-4, TLP291-4

Note3: Depend on the product variety, the package is not marked some characters in this table.

# Pin Configuration



# 1-2 Digital Isolators

## 1-2-1 Standard Digital Isolators

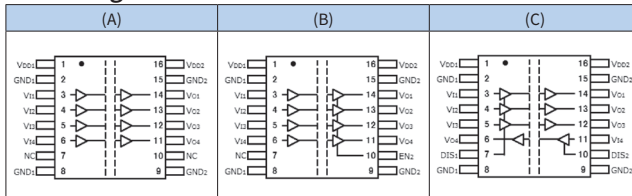
Part Number	Number of channels Forward: Reverse	Default output logic	Enabled/ Disabled control	Propagation Delay $t_{pLH} / t_{pHL}$ (Note1)	Supply Voltage Operating Range $V_{DD}$ (Note2)		Operating Temperature $T_{opr}$		Isolation Voltage  BV <sub>s</sub> min (V <sub>rms</sub> )	Toshiba Package	Pin Configuration	Lead Form Option
					max (ns)	min (V)	max (V)	min (°C)				
DCL540C01 ★	4:0	Low	without	21	2.25	5.5	-40	110	5000	SOIC16-W	(A)	-
DCL540D01 ★	4:0	High	without	21	2.25	5.5	-40	110	5000	SOIC16-W	(A)	-
DCL540L01 ★	4:0	Low	Output Enable	21	2.25	5.5	-40	110	5000	SOIC16-W	(B)	-
DCL540H01 ★	4:0	High	Output Enable	21	2.25	5.5	-40	110	5000	SOIC16-W	(B)	-
DCL541A01 ★	3:1	Low	Input Disable	21	2.25	5.5	-40	110	5000	SOIC16-W	(C)	-
DCL541B01 ★	3:1	High	Input Disable	21	2.25	5.5	-40	110	5000	SOIC16-W	(C)	-

★ Under Development (The specification is subject to change without notice.)

Note1:  $V_{DD}=2.25$  to  $2.75$  V,  $T_{opr}=-40$  to  $110$  °C

Note2: Recommended Operating Condition

### Pin Configuration



## 2. Solid State Relays

### 2-1 Photorelays

#### ■ MOSFET Output 1-Form-A

Part Number	OFF-state Output Terminal Voltage  V <sub>OFF</sub> max (V)	ON-state Current  I <sub>ON</sub> max (A)	Terminal Capacitance  C <sub>OFF</sub> typ. (pF)	ON-state Resistance  R <sub>ON</sub> max (Ω)	Trigger LED Current  I <sub>FT</sub> max (mA)	Operating Temperature		Isolation Voltage  BV <sub>s</sub> min (Vrms)	Toshiba Package	Pin Configuration	Lead Form Option
						T <sub>OPR</sub>					
						min (°C)	max (°C)				
TLP3100	20	2.5	1000	0.05	3	-40	85	1500	2.54SOP6	(C)	-
TLP3146	30	3.3	450	0.05	3	-40	110	1500	2.54SOP4	(A)	-
TLP3553A	30	4	450	0.05	3	-40	110	2500	DIP4	(A)	✓
TLP3106A	30	4.5	1200	0.03	3	-40	110	1500	2.54SOP6	(C)	-
TLP3543A	30	5	1100	0.04	3	-40	110	2500	DIP6	(C)	✓
TLP3123	40	1	300	0.13	3	-40	85	1500	2.54SOP4	(A)	-
TLP241A	40	2	300	0.15	3	-40	85	5000	DIP4	(A)	✓
TLP3554	40	2.5	300	0.15	3	-40	85	2500	DIP4	(A)	✓
TLP3102	40	2.5	1000	0.06	3	-40	85	1500	2.54SOP6	(C)	-
TLP3544	40	3.5	1000	0.06	3	-40	85	2500	DIP6	(C)	✓
TLP175A	60	0.1	10	50	1	-40	85	3750	4pin SO6	(B)	-
TLP170A	60	0.4	130	2	1	-40	85	1500	2.54SOP4	(A)	-
TLP171A	60	0.4	130	2	0.2	-40	85	1500	2.54SOP4	(A)	-
TLP192A	60	0.4	130	2	3	-40	85	1500	2.54SOP6	(C)	-
TLP240A	60	0.5	130	2	3	-40	85	5000	DIP4	(A)	✓
TLP170AM ☆	60	0.7	100	0.3	1	-40	85	3750	4pin SO6	(B)	-
TLP176AM	60	0.7	100	2	3	-40	110	3750	4pin SO6	(B)	-
TLP3122A	60	1.4	100	0.25	3	-40	110	3750	4pin SO6	(B)	-
TLP3127	60	1.7	250	0.13	3	-40	85	1500	2.54SOP4	(A)	-
TLP3103	60	2.3	1000	0.07	3	-40	85	1500	2.54SOP6	(C)	-
TLP3147	60	2.5	240	0.1	3	-40	110	1500	2.54SOP4	(A)	-
TLP3555A	60	3	250	0.1	3	-40	110	2500	DIP4	(A)	✓
TLP3545A	60	4	640	0.06	3	-40	110	2500	DIP6	(C)	✓
TLP3107A	60	4	750	0.04	3	-40	110	1500	2.54SOP6	(C)	-
TLP3547	60	5	850	0.05	5	-40	85	2500	DIP8	(D)	✓
TLP3105	100	1.4	1000	0.2	3	-40	85	1500	2.54SOP6	(C)	-
TLP3149	100	1.5	160	0.2	3	-40	110	1500	2.54SOP4	(A)	-
TLP3556A	100	2	110	0.2	3	-40	110	2500	DIP4	(A)	✓
TLP241B ☆	100	2	300	0.2	3	-40	110	5000	DIP4	(A)	✓
TLP3109A	100	3	460	0.065	3	-40	110	1500	2.54SOP6	(C)	-
TLP3823	100	3	720	0.15	5	-40	110	2500	DIP8	(D)	✓
TLP3546A	100	3.5	450	0.08	3	-40	110	2500	DIP6	(C)	✓
TLP179D	200	0.05	15	50	3	-40	85	1500	2.54SOP4	(A)	-
TLP199D	200	0.05	15	50	3	-40	85	1500	2.54SOP6	(C)	-
TLP170D	200	0.2	90	8	1	-40	85	1500	2.54SOP4	(A)	-
TLP171D	200	0.2	90	8	0.2	-40	85	1500	2.54SOP4	(A)	-

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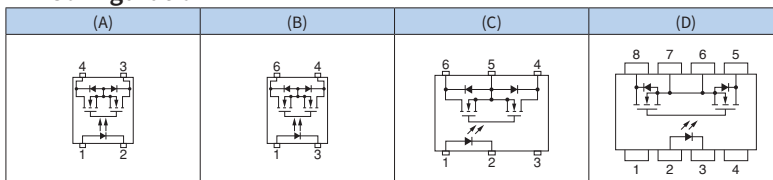


## ■ MOSFET Output 1-Form-A

Part Number	OFF-state Output Terminal Voltage	ON-state Current	Terminal Capacitance	ON-state Resistance	Trigger LED Current	Operating Temperature		Isolation Voltage	Toshiba Package	Pin Configuration	Lead Form Option
						T <sub>opr</sub>					
						min (°C)	max (°C)				
TLP176D	200	0.2	100	8	3	-40	85	1500	2.54SOP4	(A)	-
TLP240D	200	0.25	80	8	3	-40	85	5000	DIP4	(A)	✓
TLP3145	200	0.4	100	2	3	-40	110	1500	2.54SOP4	(A)	-
TLP3558A	200	0.7	110	2	3	-40	110	2500	DIP4	(A)	✓
TLP3825	200	1.5	400	0.5	5	-40	110	2500	DIP8	(D)	✓
TLP240G	350	0.1	30	50	3	-40	85	5000	DIP4	(A)	✓
TLP170G	350	0.1	35	50	1	-40	85	1500	2.54SOP4	(A)	-
TLP170GM ☆	350	0.11	30	50	1	-40	85	3750	4pin SO6	(B)	-
TLP172GM	350	0.11	30	50	3	-40	110	3750	4pin SO6	(B)	-
TLP192G	350	0.11	30	50	3	-40	85	1500	2.54SOP6	(C)	-
TLP197G	350	0.12	40	40	3	-40	85	1500	2.54SOP6	(C)	-
TLP224G	350	0.12	40	35	3	-40	85	2500	DIP4	(A)	✓
TLP174G	350	0.12	70	35	3	-40	85	1500	2.54SOP4	(A)	-
TLP171GA	400	0.1	70	35	0.2	-40	85	1500	2.54SOP4	(A)	-
TLP172GAM	400	0.11	30	65	3	-40	110	3750	4pin SO6	(B)	-
TLP797GA	400	0.12	70	40	3	-40	85	5000	DIP6	(C)	✓
TLP224GA	400	0.12	70	35	3	-40	85	2500	DIP4	(A)	✓
TLP174GA	400	0.12	70	35	3	-40	85	1500	2.54SOP4	(A)	-
TLP176GA	400	0.12	70	35	3	-40	85	1500	2.54SOP4	(A)	-
TLP197GA	400	0.12	70	35	3	-40	85	1500	2.54SOP6	(C)	-
TLP223GA ☆	400	0.12	53	35	2	-40	110	5000	DIP4	(A)	✓
TLP240GA	400	0.12	80	35	3	-40	85	5000	DIP4	(A)	✓
TLP598GA	400	0.15	-	12	3	-40	85	2500	DIP6	(C)	✓
TLP798GA	400	0.15	-	12	5	-40	85	5000	DIP6	(C)	✓
TLP3125	400	0.2	410	4	3	-40	85	1500	2.54SOP8	(D)	-
TLP3548	400	0.4	410	5	1	-40	85	2500	DIP8	(D)	✓
TLP171J	600	0.07	75	60	0.2	-40	85	1500	2.54SOP4	(A)	-
TLP170J	600	0.09	75	60	1	-40	85	1500	2.54SOP4	(A)	-
TLP223J ☆	600	0.09	53	60	2	-40	110	5000	DIP4	(A)	✓
TLP240J	600	0.09	75	60	3	-40	85	5000	DIP4	(A)	✓
TLP797J	600	0.1	120	45	5	-40	85	5000	DIP6	(C)	✓
TLP3549	600	0.6	4300	2	5	-40	85	2500	DIP8	(D)	✓

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### Pin Configuration



Part Number	OFF-state Output Terminal Voltage  V <sub>OFF</sub> max (V)	ON-state Current  I <sub>ON</sub> max (A)	Terminal Capacitance  C <sub>OFF</sub> typ. (pF)	ON-state Resistance  R <sub>ON</sub> max (Ω)	Trigger LED Current  I <sub>FT</sub> max (mA)	Operating Temperature		Isolation Voltage  BV <sub>s</sub> min (V <sub>rms</sub> )	Toshiba Package	Pin Configuration	Lead Form Option
						T <sub>opr</sub>					
						min (°C)	max (°C)				
TLP3230	20	0.16	1	8	4	-20	85	1500	SSOP4	(A)	-
TLP3330	20	0.16	1	8	3	-40	85	1000	USOP4	(A)	-
TLP3250	20	0.2	0.8	5	3	-20	85	1500	SSOP4	(A)	-
TLP3350	20	0.2	0.8	5	3	-40	85	1000	USOP4	(A)	-
TLP3450	20	0.2	0.8	5	3	-40	110	500	VSON4	(A)	-
TLP3231	20	0.45	5	1.2	4	-20	85	1500	SSOP4	(A)	-
TLP3431	20	0.45	5	1.2	3	-40	110	500	VSON4	(A)	-
TLP3203	20	0.9	40	0.22	3	-20	85	1500	SSOP4	(A)	-
TLP3303	20	0.9	40	0.22	3	-40	85	1000	USOP4	(A)	-
TLP3403	20	1	40	0.22	3	-40	110	500	VSON4	(A)	-
TLP3406S	30	1.5	120	0.2	3	-40	110	500	S-VSON4	(A)	-
TLP3480 ☆	30	4.5	450	0.05	3	-40	110	500	P-SON4	(A)	-
TLP3342	40	0.1	0.3	20	3	-40	85	1000	USOP4	(A)	-
TLP3442	40	0.1	0.3	20	3	-40	110	500	VSON4	(A)	-
TLP3240	40	0.12	0.45	14	3	-20	85	1500	SSOP4	(A)	-
TLP3340	40	0.12	0.45	14	3	-40	85	1000	USOP4	(A)	-
TLP3440S	40	0.12	0.45	14	3	-40	110	500	S-VSON4T	(A)	-
TLP3440	40	0.12	0.45	14	3	-40	110	500	VSON4	(A)	-
TLP3216	40	0.12	1	15	4	-20	85	1500	SSOP4	(A)	-
TLP3241	40	0.14	0.7	10	3	-20	85	1500	SSOP4	(A)	-
TLP3341	40	0.14	0.7	10	3	-40	85	1000	USOP4	(A)	-
TLP3441	40	0.14	0.7	10	3	-40	110	500	VSON4	(A)	-
TLP3214	40	0.25	5	3	4	-20	85	1500	SSOP4	(A)	-
TLP3414	40	0.25	5	3	3	-40	110	500	VSON4	(A)	-
TLP3215	40	0.3	10	1.5	4	-20	85	1500	SSOP4	(A)	-
TLP3315	40	0.3	10	1.5	3	-40	85	1000	USOP4	(A)	-
TLP3275	50	0.3	12	1.5	3	-20	85	1500	SSOP4	(A)	-
TLP3375	50	0.3	12	1.5	3	-40	85	1000	USOP4	(A)	-
TLP3475	50	0.3	12	1.5	3	-40	110	500	VSON4	(A)	-
TLP3351	60	0.12	0.7	15	3	-40	85	1000	USOP4	(A)	-
TLP3451	60	0.12	0.7	15	3	-40	110	500	VSON4	(A)	-
TLP3475S	60	0.4	12	1.5	3	-40	110	500	S-VSON4	(A)	-
TLP3212	60	0.4	20	1.5	5	-20	85	1500	SSOP4	(A)	-
TLP3312	60	0.4	20	1.5	3	-40	85	1000	USOP4	(A)	-
TLP3412	60	0.4	20	1.5	3	-40	110	500	VSON4	(A)	-
TLP3407S	60	1	80	0.3	3	-40	110	500	S-VSON4	(A)	-
TLP3481 ☆	60	3	250	0.1	3	-40	110	500	P-SON4	(A)	-
TLP3306	75	0.4	30	1.5	3	-40	85	1000	USOP4	(A)	-
TLP3217	80	0.12	5	12	5	-20	85	1500	SSOP4	(A)	-
TLP3317	80	0.12	5	12	3	-40	85	1000	USOP4	(A)	-
TLP3417	80	0.12	5	12	3	-40	110	500	VSON4	(A)	-
TLP3319	80	0.2	6.5	8	3	-40	85	1000	USOP4	(A)	-
TLP3419	80	0.2	6.5	8	3	-40	110	500	VSON4	(A)	-

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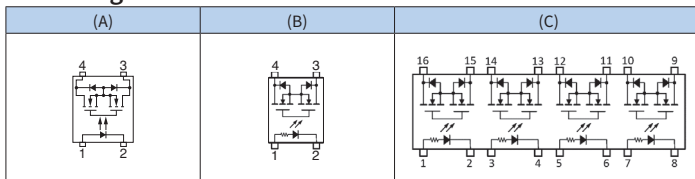
## ■ MOSFET Output 1-Form-A

Part Number	OFF-state Output Terminal Voltage	ON-state Current	Terminal Capacitance	ON-state Resistance	Trigger LED Current	Operating Temperature		Isolation Voltage	Toshiba Package	Pin Configuration	Lead Form Option
						$T_{opr}$					
						min (°C)	max (°C)				
TLP3220	100	0.08	6	14	5	-20	85	1500	SSOP4	(A)	-
TLP3320	100	0.1	6	14	3	-40	85	1000	USOP4	(A)	-
TLP3420	100	0.1	6	14	3	-40	110	500	VSON4	(A)	-
TLP3409S	100	0.65	50	0.6	3	-40	110	500	S-VSON4	(A)	-
TLP3482 ☆	100	2	170	0.2	3	-40	110	500	P-SON4	(A)	-
TLP3483 ☆	200	0.35	75	8	3	-40	110	500	P-SON4	(A)	-
TLP3484 ☆	400	0.18	60	35	3	-40	110	500	P-SON4	(A)	-

Part Number	OFF-state Output Terminal Voltage	ON-state Current	Terminal Capacitance	ON-state Resistance	Operating Voltage	Operating Temperature		Isolation Voltage	Toshiba Package	Pin Configuration	Lead Form Option
						$T_{opr}$					
						min (°C)	max (°C)				
TLP3403R	20	1	40	0.22	3	-40	110	500	VSONR4	(B)	-
TLP3403SRHA ☆	20	1.5	120	0.2	3	-40	125	500	S-VSON4T	(B)	-
TLP3406SRH4 ☆	30	0.9	120	0.2	3	-40	110	300	S-VSON16T	(C)	-
TLP3406SRL	30	1.5	120	0.2	1.6	-40	110	500	S-VSON4T	(B)	-
TLP3406SRH	30	1.5	120	0.2	3	-40	110	500	S-VSON4T	(B)	-
TLP3406SRHA ☆	30	1.5	120	0.2	3	-40	125	500	S-VSON4T	(B)	-
TLP3475R ☆	50	0.3	12	1.5	3	-40	110	500	VSONR4	(B)	-
TLP3475SRHA4 ☆	60	0.25	20 (max)	1.5	3	-40	125	300	S-VSON16T	(C)	-
TLP3412SRHA4 ☆	60	0.25	20 (max)	1.5	3	-40	125	300	S-VSON16T	(C)	-
TLP3475SRHA ☆	60	0.4	12	1.5	3	-40	125	500	S-VSON4T	(B)	-
TLP3412R	60	0.4	20	1.5	3	-40	110	500	VSONR4	(B)	-
TLP3412SRA ☆	60	0.4	20 (max)	1.5	3	-40	125	500	S-VSON4T	(B)	-
TLP3412SRH ☆	60	0.4	20 (max)	1.5	3	-40	110	500	S-VSON4T	(B)	-
TLP3412SRHA ☆	60	0.4	20 (max)	1.5	3	-40	125	500	S-VSON4T	(B)	-
TLP3407SRA4 ☆	60	0.6	80	0.3	3	-40	125	300	S-VSON16T	(C)	-
TLP3407SRA ☆	60	1	80	0.3	3	-40	125	500	S-VSON4T	(B)	-
TLP3407SRH ☆	60	1	80	0.3	3	-40	110	500	S-VSON4T	(B)	-
TLP3407SRL ☆	60	1	80	0.3	1.6	-40	110	500	S-VSON4T	(B)	-
TLP3407SR	60	1	80	0.3	3	-40	110	500	S-VSON4T	(B)	-

☆ New Products

## Pin Configuration



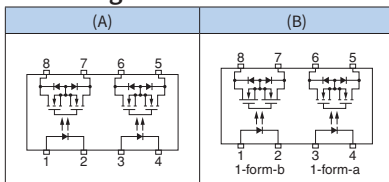
## ■ MOSFET Output 2-Form-A

Part Number	OFF-state Output Terminal Voltage  V <sub>OFF</sub> max (V)	ON-state Current  I <sub>ON</sub> max (A)	Terminal Capacitance  C <sub>OFF</sub> typ. (pF)	ON-state Resistance  R <sub>ON</sub> max (Ω)	Trigger LED Current  I <sub>FT</sub> max (mA)	Operating Temperature		Isolation Voltage  BV <sub>s</sub> min (V <sub>rms</sub> )	Toshiba Package	Pin Configuration	Lead Form Option
						T <sub>opr</sub>					
						min (°C)	max (°C)				
TLP202A	60	0.4	130	2	3	-40	85	1500	2.54SOP8	(A)	-
TLP200D	200	0.2	100	8	3	-40	85	1500	2.54SOP8	(A)	-
TLP202G	350	0.11	30	50	3	-40	85	1500	2.54SOP8	(A)	-
TLP206G	350	0.12	40	35	3	-40	85	1500	2.54SOP8	(A)	-
TLP224G-2	350	0.12	40	35	3	-40	85	2500	DIP8	(A)	✓
TLP224GA-2	400	0.12	70	35	3	-40	85	2500	DIP8	(A)	✓
TLP206GA	400	0.12	70	35	3	-40	85	1500	2.54SOP8	(A)	-

## ■ MOSFET Output 1-Form-A / 1-Form-B

Part Number	OFF-state Output Terminal Voltage  V <sub>OFF</sub> max (V)	ON-state Current  I <sub>ON</sub> max (A)	Terminal Capacitance  C <sub>OFF</sub> typ. (pF)	ON-state Resistance  R <sub>ON</sub> max (Ω)	Trigger LED Current  I <sub>FT</sub> / I <sub>FC</sub> max (mA)	Operating Temperature		Isolation Voltage  BV <sub>s</sub> min (V <sub>rms</sub> )	Toshiba Package	Pin Configuration	Lead Form Option
						T <sub>opr</sub>					
						min (°C)	max (°C)				
TLP4006G	350	0.12	65	25	3	-40	85	2500	DIP8	(B)	✓
TLP4026G	350	0.12	65	25	3	-40	85	1500	2.54SOP8	(B)	-

## Pin Configuration



## ■ MOSFET Output 1-Form-B

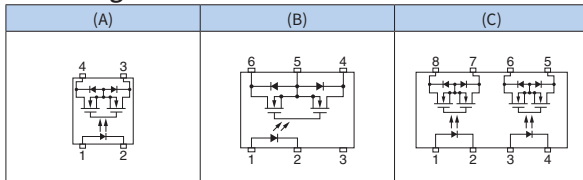
Part Number	OFF-state Output Terminal Voltage  $V_{OFF}$ max (V)	ON-state Current  $I_{ON}$ max (A)	Terminal Capacitance  $C_{OFF}$ typ. (pF)	ON-state Resistance  $R_{ON}$ max ( $\Omega$ )	Trigger LED Current  $I_{FC}$ max (mA)	Operating Temperature		Isolation Voltage  $BV_s$ min (Vrms)	Toshiba Package	Pin Configuration	Lead Form Option
						$T_{opr}$					
						min ( $^{\circ}C$ )	max ( $^{\circ}C$ )				
TLP4176A	60	0.5	100	2.5	3	-40	105	1500	2.54SOP4	(A)	-
TLP4590A ☆	60	1.2	550	0.6	2	-40	110	5000	DIP6	(B)	✓
TLP4176G	350	0.12	65	25	3	-40	85	1500	2.54SOP4	(A)	-
TLP4197G	350	0.12	65	25	3	-40	85	1500	2.54SOP6	(B)	-
TLP4227G	350	0.15	65	25	3	-40	85	2500	DIP4	(A)	✓
TLP4597G	350	0.15	65	25	3	-40	85	2500	DIP6	(B)	✓

## ■ MOSFET Output 2-Form-B

Part Number	OFF-state Output Terminal Voltage  $V_{OFF}$ max (V)	ON-state Current  $I_{ON}$ max (A)	Terminal Capacitance  $C_{OFF}$ typ. (pF)	ON-state Resistance  $R_{ON}$ max ( $\Omega$ )	Trigger LED Current  $I_{FC}$ max (mA)	Operating Temperature		Isolation Voltage  $BV_s$ min (Vrms)	Toshiba Package	Pin Configuration	Lead Form Option
						$T_{opr}$					
						min ( $^{\circ}C$ )	max ( $^{\circ}C$ )				
TLP4206G	350	0.12	65	25	3	-40	85	1500	2.54SOP8	(C)	-
TLP4227G-2	350	0.15	65	25	3	-40	85	2500	DIP8	(C)	✓

☆ New Products

## Pin Configuration

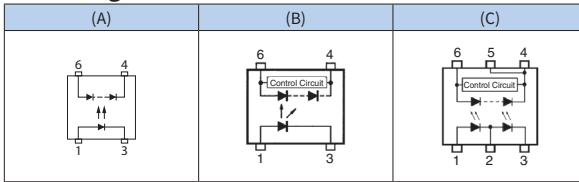


## 2-2 Photovoltaic Output

Part Number	Feature	Short-circuit current $I_{sc}$ min ( $\mu A$ )	Open voltage $V_{oc}$ min (V)	Turn-on time $t_{on}$ max (ms)	Turn-off time $t_{off}$ max (ms)	Operating Temperature		Isolation Voltage $BV_s$ min (V <sub>rms</sub> )	Toshiba Package	Pin Configuration	Lead Form Option
						$T_{opr}$					
						min ( $^{\circ}C$ )	max ( $^{\circ}C$ )				
TLP3905	Without internal shunt resistor	12	7	-	-	-40	125	3750	4pin SO6	(A)	-
TLP3906	Built-in discharging circuit	12	7	1	1	-40	125	3750	4pin SO6	(B)	-
TLP3910 ☆	Built-in discharging circuit	12	14	1	0.5	-40	125	5000	SO6L	(C)	-

☆ New Products

### Pin Configuration

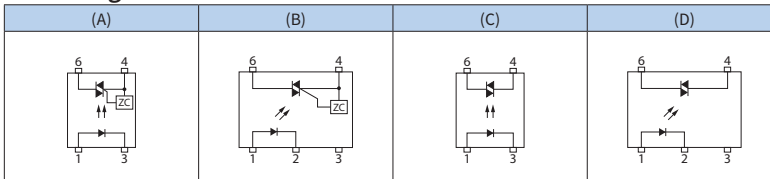


## 2-3 Triac Output

Part Number	Output Type  (Note1)	Trigger LED Current $I_{FT}$ max (mA)	Off-state Output Terminal Voltage $V_{ORM}$ max (V)	On-state RMS Current $I_{TRMS}$ max (mA)	Inhibit Voltage $V_{IH}$ max (V)	Peak on-state Voltage $V_{TM}$ max (V)	Operating Temperature		Isolation Voltage $BV_s$ min (V <sub>rms</sub> )	Toshiba Package	Pin Configuration	Lead Form Option
							$T_{opr}$					
							min ( $^{\circ}C$ )	max ( $^{\circ}C$ )				
TLP266J	ZC	10	600	70	30	2.8	-40	100	3750	4pin SO6	(A)	-
TLP268J	ZC	3	600	70	30	2.8	-40	100	3750	4pin SO6	(A)	-
TLP3062A	ZC	10	600	100	20	3	-40	100	5000	5pin DIP6	(B)	✓
TLP3083	ZC	5	800	100	20	3	-40	100	5000	5pin DIP6	(B)	✓
TLP265J	NZC	10	600	70	-	2.8	-40	100	3750	4pin SO6	(C)	-
TLP267J	NZC	3	600	70	-	2.8	-40	100	3750	4pin SO6	(C)	-
TLP3052A	NZC	10	600	100	-	3	-40	100	5000	5pin DIP6	(D)	✓
TLP3073	NZC	5	800	100	-	3	-40	100	5000	5pin DIP6	(D)	✓

Note1: ZC: Zero crossing functionary, NZC: Non zero crossing functionary

### Pin Configuration



# 3. Automotive Devices

## ■ Photocouplers

### IC Output

#### High speed Logic Couplers (Open-collector)

Part Number	Data Rate	Threshold LED Input Current	Propagation Delay Time		Supply Voltage Operating Range		High / Low-level Supply Current	Common Mode Transient Immunity	Operating Temperature		Isolation Voltage	Toshiba Package	Pin Configuration	AEC-Q101
			(Mbps)	$I_{FHL}$ max (mA)	$t_{pLH}$ max (ns)	$t_{pHL}$ max (ns)			min (V)	max (V)				
TLX9304	1	5	550	400	4.5	20	1.3	+/-15	-40	125	3750	5pin SO6	(A)	#
TLX9378	10	5	100	100	4.5	5.5	1.3	+/-15	-40	125	3750	5pin SO6	(C)	#

#### High speed Logic Couplers (Totem-pole (Buffer))

Part Number	Data Rate	Threshold LED Input Current	Propagation Delay Time		Supply Voltage Operating Range		High / Low-level Supply Current	Common Mode Transient Immunity	Operating Temperature		Isolation Voltage	Toshiba Package	Pin Configuration	AEC-Q101
			(Mbps)	$I_{FLH}$ max (mA)	$t_{pLH}$ max (ns)	$t_{pHL}$ max (ns)			min (V)	max (V)				
TLX9310 ☆	5	1	250	250	2.7	5.5	0.3	+/-25	-40	105	3750	5pin SO6	(D)	#

#### High speed Logic Couplers (Totem-pole (Inverter))

Part Number	Data Rate	Threshold LED Input Current	Propagation Delay Time		Supply Voltage Operating Range		High / Low-level Supply Current	Common Mode Transient Immunity	Operating Temperature		Isolation Voltage	Toshiba Package	Pin Configuration	AEC-Q101
			(Mbps)	$I_{FHL}$ max (mA)	$t_{pLH}$ max (ns)	$t_{pHL}$ max (ns)			min (V)	max (V)				
TLX9376	20	4	35	35	4.5	5.5	1.7	+/-15	-40	125	3750	5pin SO6	(C)	#

#### Logic Couplers (Open-collector)

Part Number	Data Rate	Current Transfer Ratio	Propagation Delay Time		Supply Voltage Operating Range		High / Low-level Supply Current	Common Mode Transient Immunity	Operating Temperature		Isolation Voltage	Toshiba Package	Pin Configuration	AEC-Q101
			(Mbps)	CTR min (%) @ $T_a=25^\circ\text{C}$	$t_{pLH}$ max (ns)	$t_{pHL}$ max (ns)			min (V)	max (V)				
TLX9309	1	15 (@ $I_f=7\text{ mA}$ )	1000	800	-	30	-	+/-10	-40	125	3750	5pin SO6	(B)	#

Note1: Recommended Operating Condition  
 # AEC-Q101 qualified  
 ☆ New Products

## Transistor Output

Part Number	Input Type	Current Transfer Ratio			Collector-Emitter Voltage $V_{ce0}$ max (V)	Collector Current $I_c$ max (A)	Operating Temperature		Isolation Voltage $BV_s$ min (Vrms)	Toshiba Package	Pin Configuration	AEC-Q101
		CTR ( $I_c / I_f$ ) @Ta=25 °C					$T_{opr}$					
		min (%)	max (%)	Relevant Part								
TLX9291A	DC	50	600	☆1	80	0.05	-40 125	3750	SO4	(E)	#	
TLX9185A	DC	50	600	☆1	80	0.05	-40 125	3750	4pin SO6	(E)	#	
TLX9188 ☆	DC	50	600	☆1	200	0.05	-40 125	3750	4pin SO6	(E)	#	
TLX9000	DC	100	900	-	40	0.05	-40 125	3750	SO4	(F)	#	
TLX9300	DC	100	900	-	40	0.05	-40 125	3750	4pin SO6	(F)	#	

☆ New Products

## Current Transfer Ratio Rank

Rank	Current Transfer Ratio (%)		Relevant Part	Marking of Classification
	min	max		
Blank	50	600	☆1	Blank, GB
GB	100	600	☆1	GB

## Photovoltaic Output

Part Number	Short-circuit Current $I_{sc}$ min ( $\mu$ A) @Ta=25 °C	Open Voltage $V_{oc}$ min (V) @Ta=25 °C	Operating Temperature		Isolation Voltage $BV_s$ min (Vrms)	Toshiba Package	Pin Configuration	AEC-Q101
			$T_{opr}$					
			min (°C)	max (°C)				
TLX9905 ☆	12	7	-40	125	3750	4pin SO6	(G)	#
TLX9906	12	7	-40	125	3750	4pin SO6	(H)	#

## Photorelays

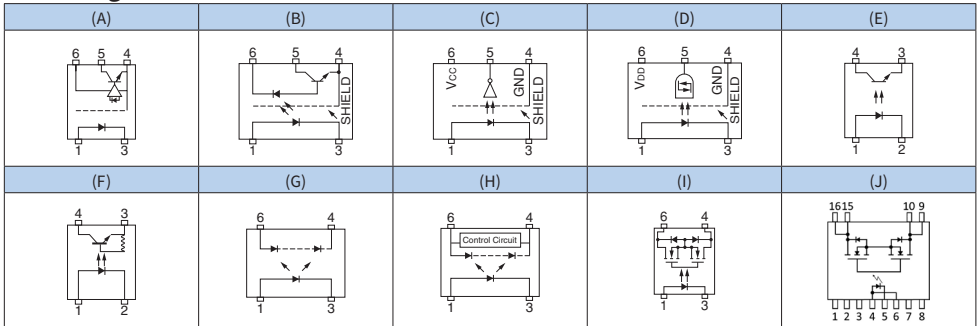
### MOSFET Output 1-Form-A

Part Number	OFF-state Output Terminal Voltage $V_{OFF}$ max (V)	ON-state Current $I_{ON}$ max (A)	Terminal Capacitance $C_{OFF}$ typ. (pF)	ON-state Resistance $R_{ON}$ max ( $\Omega$ )	Trigger LED Current $I_{FT}$ max (mA)	Operating Temperature		Isolation Voltage $BV_s$ min (Vrms)	Toshiba Package	Pin Configuration	AEC-Q101
						$T_{opr}$					
						min (°C)	max (°C)				
TLX9175J	600	0.015	8	335	3	-55	105	3750	4pin SO6	(I)	#
TLX9160T ☆	1500	0.05	100	250	3	-40	125	5000	SO16L-T	(J)	#

# AEC-Q101 qualified

☆ New Products

## Pin Configuration

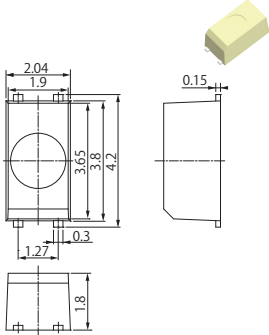
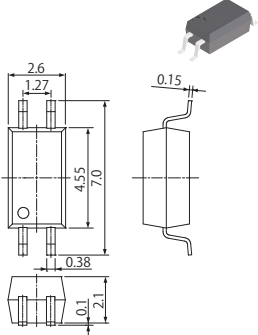
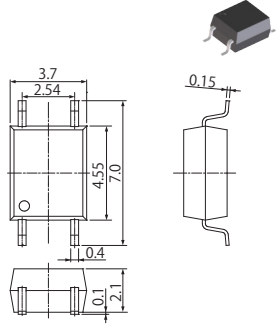
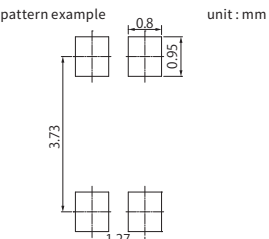
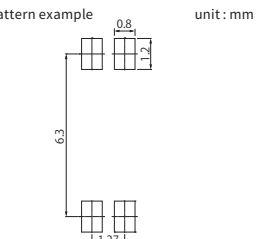
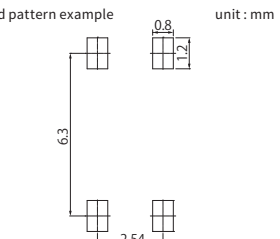


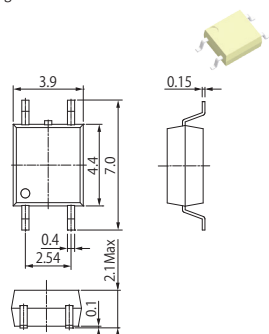
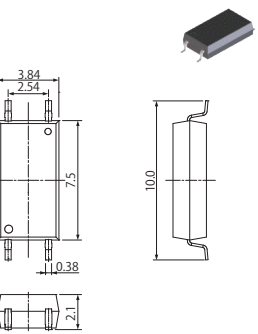
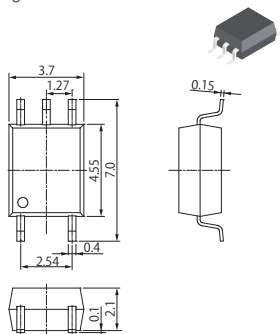
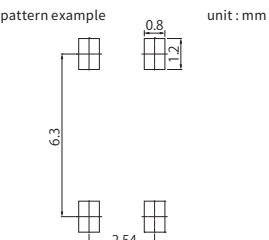
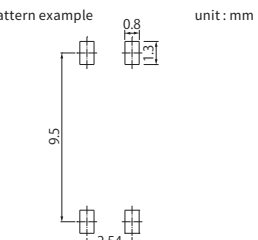
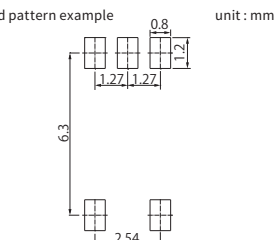


# 4. Device Packages

## ■ Dimensional Out Line (Surface Mount Type)

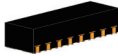
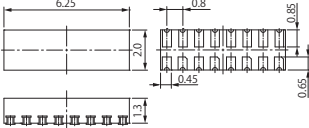

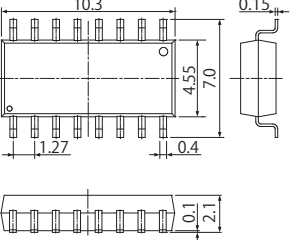

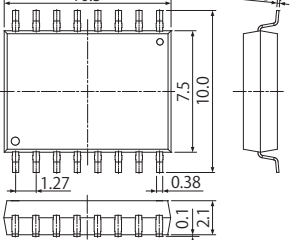
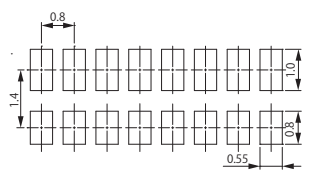
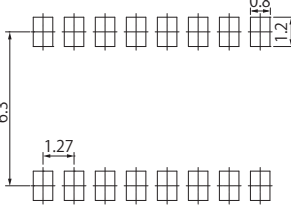
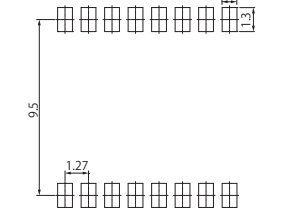
S-VSON4T (1.45 x 2.0)		S-VSON4 (1.45 x 2.0)		VSON4 (1.45 x 2.45)	
Package dimension	unit : mm	Package dimension	unit : mm	Package dimension	unit : mm
Land pattern example	unit : mm	Land pattern example	unit : mm	Land pattern example	unit : mm
VSONR4 (1.45 x 2.75)		P-SON4 (3.4 x 2.1)		USOP4 (2.2 x 3.25)	
Package dimension	unit : mm	Package dimension	unit : mm	Package dimension	unit : mm
Land pattern example	unit : mm	Land pattern example	unit : mm	Land pattern example	unit : mm


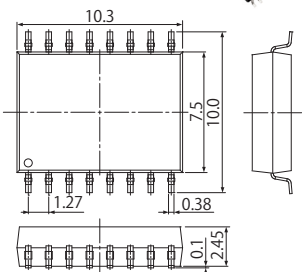
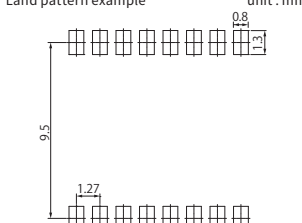
SSOP4 (2.04 x 4.2)	SO4 (2.6 x 7.0)	4pin SO6 (3.7 x 7.0)
<p>Package dimension <span style="float: right;">unit : mm</span></p> 	<p>Package dimension <span style="float: right;">unit : mm</span></p> 	<p>Package dimension <span style="float: right;">unit : mm</span></p> 
<p>Land pattern example <span style="float: right;">unit : mm</span></p> 	<p>Land pattern example <span style="float: right;">unit : mm</span></p> 	<p>Land pattern example <span style="float: right;">unit : mm</span></p> 

2.54SOP4 (3.9 x 7.0)	4pin SO6L (3.84 x 10.0)	5pin SO6 (3.7 x 7.0)
<p>Package dimension <span style="float: right;">unit : mm</span></p> 	<p>Package dimension <span style="float: right;">unit : mm</span></p> 	<p>Package dimension <span style="float: right;">unit : mm</span></p> 
<p>Land pattern example <span style="float: right;">unit : mm</span></p> 	<p>Land pattern example <span style="float: right;">unit : mm</span></p> 	<p>Land pattern example <span style="float: right;">unit : mm</span></p> 



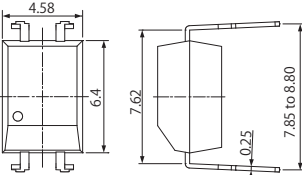
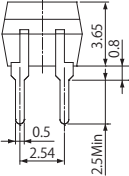

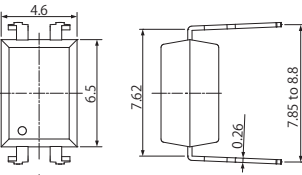
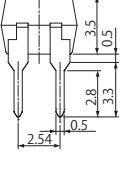

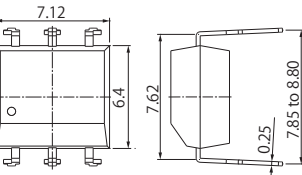
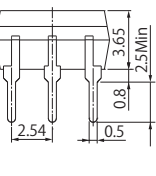
2.54SOP6 (6.3 x 7.0)	SO6L (3.84 x 10.0)	SO8 (5.1 x 6.0)
<p>Package dimension unit : mm</p>	<p>Package dimension unit : mm</p>	<p>Package dimension unit : mm</p>
<p>Land pattern example unit : mm</p>	<p>Land pattern example unit : mm</p>	<p>Land pattern example unit : mm</p>


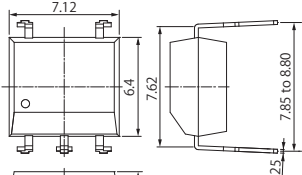
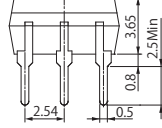

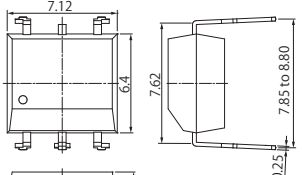
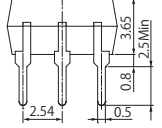

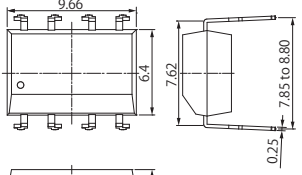
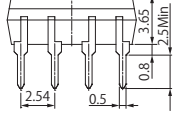
SO8L (5.85 x 10.0)	2.54SOP8 (9.4 x 7.0)	SO16L-T (10.3 x 10.0)
<p>Package dimension unit : mm</p>	<p>Package dimension unit : mm</p>	<p>Package dimension unit : mm</p>
<p>Land pattern example unit : mm</p>	<p>Land pattern example unit : mm</p>	<p>Land pattern example unit : mm</p>

S-VSON16T (6.25 x 2.0)	SO16 (10.3 x 7.0)	SO16L (10.3 x 10.0)
<p>Package dimension unit : mm</p>  <p>Bottom View</p> 	<p>Package dimension unit : mm</p>  	<p>Package dimension unit : mm</p>  
<p>Land pattern example unit : mm</p> 	<p>Land pattern example unit : mm</p> 	<p>Land pattern example unit : mm</p> 

SOIC16-W (10.3 x 10.0)	
<p>Package dimension unit : mm</p>  	<p>Land pattern example unit : mm</p> 

## Dimensional Out Line (Through Hole Type)

DIP4 (4.58 x 7.62)	DIP4 (TLP785) (4.6 x 7.62)	DIP6 (7.12 x 7.62)
<p>Package dimension unit : mm</p>    	<p>Package dimension unit : mm</p>   	<p>Package dimension unit : mm</p>   

5pin DIP6 (7.12 x 7.62)	5pin DIP6 (cut) (7.12 x 7.62)	DIP8 (9.66 x 7.62)
<p>Package dimension unit : mm</p>   	<p>Package dimension unit : mm</p>   	<p>Package dimension unit : mm</p>   

## Lead Form Options

DIP4 (LF1) / (TP1) (4.58 x 10.0)	DIP4 (LF5) / (TP5) (4.58 x 10.0)	DIP4 (LF2) (4.58 x 10.16)
<p>Package dimension unit : mm</p>	<p>Package dimension unit : mm</p>	<p>Package dimension (DIP4 Ftype) unit : mm</p>
<p>Land pattern example unit : mm</p>	<p>Land pattern example unit : mm</p>	

DIP4 (LF4) / (TP4) (4.58 x 12.0)	DIP4 TLP785 (LF6) / (TP6) (4.6 x 10.0)	DIP4 TLP785F (LF7) / (TP7) (4.6 x 11.66)
<p>Package dimension unit : mm</p>	<p>Package dimension unit : mm</p>	<p>Package dimension unit : mm</p>
<p>Land pattern example unit : mm</p>	<p>Land pattern example unit : mm</p>	<p>Land pattern example unit : mm</p>

DIP6 (LF1) / (TP1) (7.12 x 10.0)	DIP6 (LF5) / (TP5) (7.12 x 10.0)	DIP6 (LF2) (7.12 x 10.16)
<p>Package dimension unit : mm</p>	<p>Package dimension unit : mm</p>	<p>Package dimension unit : mm (DIP6 Ftype)</p>

<p>Land pattern example unit : mm</p>	<p>Land pattern example unit : mm</p>	<p>Land pattern example unit : mm</p>
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DIP6 (LF4) / (TP4) (7.12 x 12.0)	5pin DIP6 (LF1) / (TP1) (7.12 x 10.0)	5pin DIP6 (LF5) / (TP5) (7.12 x 10.0)
<p>Package dimension unit : mm</p>	<p>Package dimension unit : mm</p>	<p>Package dimension unit : mm</p>

<p>Land pattern example unit : mm</p>	<p>Land pattern example unit : mm</p>	<p>Land pattern example unit : mm</p>
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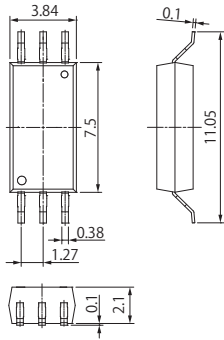
5pin DIP6 (LF2) (7.12 x 10.16)	5pin DIP6 (LF4) / (TP4) (7.12 x 12.0)	5pin DIP6 (cut) (LF1) / (TP1) (7.12 x 10.0)
<p>Package dimension unit : mm</p> <p>(5pin DIP6 FType)</p>	<p>Package dimension unit : mm</p>	<p>Package dimension unit : mm</p>
<p>Land pattern example unit : mm</p>	<p>Land pattern example unit : mm</p>	<p>Land pattern example unit : mm</p>

5pin DIP6 (cut) (LF5) / (TP5) (7.12 x 10.0)	5pin DIP6 (cut) (LF2) (7.12 x 10.16)	5pin DIP6 (cut) (LF4) / (TP4) (7.12 x 12.0)
<p>Package dimension unit : mm</p>	<p>Package dimension unit : mm</p> <p>(5pin DIP6 (cut) FType)</p>	<p>Package dimension unit : mm</p>
<p>Land pattern example unit : mm</p>	<p>Land pattern example unit : mm</p>	<p>Land pattern example unit : mm</p>

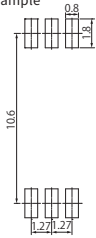


SO6L (LF4) (3.84 x 11.05)

Package dimension unit : mm



Land pattern example unit : mm



DIP8 (LF1) / (TP1) (9.66 x 10.0)		DIP8 (LF5) / (TP5) (9.66 x 10.0)		DIP8 (LF2) (9.66 x 10.16)	
Package dimension	unit : mm	Package dimension	unit : mm	Package dimension (DIP8 Ftype)	unit : mm

Land pattern example	unit : mm	Land pattern example	unit : mm

DIP8 (LF4) / (TP4) (9.66 x 12.0)		SO8L (LF4) (5.85 x 11.05)	
Package dimension	unit : mm	Package dimension	unit : mm
Land pattern example	unit : mm	Land pattern example	unit : mm

# 5. Cross Reference

## IGBT / MOSFET Driver Photocouplers

Manufacturer	Competitor's Product		Toshiba		
	Part Number	Part Number	Compatible Level (Note:1)	Peak Current	Package
BROADCOM	ACNW3130	TLP352F	3	2.5 A	DIP8
	ACNW3190	TLP358HF	4	6.0 A	DIP8
	ACPL-3130	TLP5752H ☆	4	2.5 A	SO6L
	ACPL-330J	TLP5214A	2	4.0 A	SO16L
		TLP5212 ☆		2.5 A	
	ACPL-331J	TLP5214A	2	4.0 A	SO16L
		TLP5212 ☆		2.5 A	
	ACPL-332J	TLP5214A	1	4.0 A	SO16L
		TLP5212 ☆		2.5 A	
	ACPL-333J	TLP5214A	2	4.0 A	SO16L
		TLP5212 ☆		2.5 A	
	ACPL-339J	TLP5231 ☆	1	2.0 A	SO16L
	ACPL-H312	TLP5832 ☆	1	2.5 A	SO8L
	ACPL-H342	TLP5772	3	2.5 A	SO6L
	ACPL-J313	TLP5752H ☆	4	2.5 A	SO6L
	ACPL-K312	TLP5832 ☆	2	2.5 A	SO8L
	ACPL-K342	TLP5772 (LF4)	3	2.5 A	SO6L (LF4)
	ACPL-P302	TLP5701	2	0.6 A	SO6L
	ACPL-P314	TLP5701	2	0.6 A	SO6L
	ACPL-P340	TLP5751	1	1.0 A	SO6L
	ACPL-P341	TLP5754	1	4.0 A	SO6L
	ACPL-P343	TLP5754	1	4.0 A	SO6L
	ACPL-P345	TLP5751	1	1.0 A	SO6L
	ACPL-P346	TLP5752	1	2.5 A	SO6L
	ACPL-P347	TLP5751	2	1.0 A	SO6L
	ACPL-P349	TLP5752	2	2.5 A	SO6L
	ACPL-T350	TLP5752H ☆	4	2.5 A	SO6L
	ACPL-W302	TLP5701 (LF4)	2	0.6 A	SO6L (LF4)
	ACPL-W314	TLP5701 (LF4)	2	0.6 A	SO6L (LF4)
	ACPL-W340	TLP5751 (LF4)	1	1.0 A	SO6L (LF4)
	ACPL-W341	TLP5754 (LF4)	1	4.0 A	SO6L (LF4)
	ACPL-W343	TLP5754 (LF4)	1	4.0 A	SO6L (LF4)
	ACPL-W345	TLP5751 (LF4)	1	1.0 A	SO6L (LF4)
	ACPL-W346	TLP5752 (LF4)	1	2.5 A	SO6L (LF4)
	ACPL-W347	TLP5751 (LF4)	2	1.0 A	SO6L (LF4)
	ACPL-W349	TLP5752 (LF4)	2	2.5 A	SO6L (LF4)
	HCNW3120	TLP352F	1	2.5 A	DIP8
	HCPL-0302	TLP151A	3	0.6 A	5pin SO6
	HCPL-0314	TLP151A	3	0.6 A	5pin SO6
	HCPL-3020	TLP5771H ☆	4	1.0 A	SO6L
	HCPL-3120	TLP5752H ☆	4	2.5 A	SO6L
	HCPL-3140	TLP5771H ☆	4	1.0 A	SO6L
	HCPL-314J	TLP5701 x 2 pcs	4	0.6 A	SO6L
	HCPL-3150	TLP5771H ☆	4	1.0 A	SO6L
	HCPL-315J	TLP5701 x 2 pcs	4	0.6 A	SO6L

☆ New Products

**Note:1**

- 1: Package and characteristics are almost same
- 2: Almost same package but similar characteristics
- 3: Almost same characteristics but different package
- 4: Different package and similar characteristics

Manufacturer	Competitor's Product		Toshiba		
	Part Number	Part Number	Compatible Level (Note:1)	Peak Current	Package
	HCPL-316J	TLP5214A	2	4.0 A	SO16L
		TLP5212 ☆		2.5 A	
	HCPL-3180	TLP5752H ☆	3	2.5 A	SO6L
	HCPL-J312	TLP5752H ☆	4	2.5 A	SO6L
	HCPL-J314	TLP5771H ☆	4	1.0 A	SO6L
	HCPL-T250	TLP5752H ☆	4	2.5 A	SO6L
Fairchild	FOD3120	TLP5752H ☆	4	2.5 A	SO6L
	FOD3150	TLP5771	4	1.0 A	SO6L
	FOD3182	TLP5774	4	4.0 A	SO6L
	FOD8314	TLP5772	2	2.5 A	SO6L
	FOD8332	TLP5214A	1	4.0 A	SO16L
TLP5212 ☆		2.5 A			
Renesas	PS9301L	TLP5701	1	0.6 A	SO6L
	PS9302L	TLP5832 ☆	2	2.5 A	SO8L
	PS9305L	TLP5832 ☆	1	2.5 A	SO8L
	PS9307L	TLP5701	1	0.6 A	SO6L
	PS9308L	TLP5702	2	2.5 A	SO6L
	PS9331L	TLP5702	2	2.5 A	SO6L
	PS9402	TLP5214A	2	4.0 A	SO16L
		TLP5212 ☆		2.5 A	
	PS9505	TLP5752H ☆	4	2.5 A	SO6L
	PS9506	TLP5771H ☆	4	0.6 A	SO6L
	PS9531	TLP5752H ☆	4	2.5 A	SO6L
	PS9552	TLP5752H ☆	4	2.5 A	SO6L
	PS9553	TLP5771H ☆	4	1.0 A	SO6L
PS9801	TLP151A	3	0.6 A	5pin SO6	
SHARP	PC923	TLP5771H ☆	4	1.0 A	SO6L
	PC924	TLP5771H ☆	4	1.0 A	SO6L
	PC925	TLP5752H ☆	4	2.5 A	SO6L
	PC928	TLP5214A	4	4.0 A	SO16L
		TLP5212 ☆		2.5 A	
	PC929	TLP5214A	4	4.0 A	SO16L
TLP5212 ☆		2.5 A			

☆ New Products

**Note:1**

- 1: Package and characteristics are almost same
- 2: Almost same package but similar characteristics
- 3: Almost same characteristics but different package
- 4: Different package and similar characteristics

## High Speed and IPM Driver Photocouplers

Manufacturer	Competitor's Product	Toshiba				
	Part Number	Part Number	Compatible Level (Note:1)	Data Rate (typ.)	Package	
BROADCOM	ACPL-071L	TLP2366		3	20 Mbps	5pin SO6
	ACPL-074L	TLP2261		3	15 Mbps	SO8L (LF4)
	ACPL-M21L	TLP2312	☆	1	5 Mbps	5pin SO6
	ACPL-M483	TLP2348		1	10 Mbps	5pin SO6
	ACPL-M484	TLP2345		1	10 Mbps	5pin SO6
	ACPL-M60L	TLP2363	☆	1	15 Mbps	5pin SO6
	ACPL-M61L	TLP2361		1	15 Mbps	5pin SO6
	ACPL-M62L	TLP2363	☆	1	15 Mbps	5pin SO6
	ACPL-M75L	TLP2366		2	20 Mbps	5pin SO6
	ACPL-K24L	TLP2210		2	20 Mbps	SO8L (LF4)
	ACPL-P454	TLP2704		2	1 Mbps	SO6L
	ACPL-P456	TLP2704		1	1 Mbps	SO6L
	ACPL-P480	TLP2710	☆	2	5 Mbps	SO6L
	ACPL-P481	TLP2710	☆	2	5 Mbps	SO6L
	ACPL-P483	TLP2748		2	10 Mbps	SO6L
	ACPL-P484	TLP2745		2	10 Mbps	SO6L
	ACPL-P611	TLP2768A		2	20 Mbps	SO6L
	ACPL-W21L	TLP2710 (LF4)	☆	2	5 Mbps	SO6L (LF4)
	ACPL-W454	TLP2704 (LF4)		2	1 Mbps	SO6L (LF4)
	ACPL-W456	TLP2704 (LF4)		1	1 Mbps	SO6L (LF4)
	ACPL-W480	TLP2710 (LF4)	☆	2	5 Mbps	SO6L (LF4)
	ACPL-W481	TLP2710 (LF4)	☆	2	5 Mbps	SO6L (LF4)
	ACPL-W483	TLP2748 (LF4)		2	10 Mbps	SO6L (LF4)
	ACPL-W484	TLP2745 (LF4)		2	10 Mbps	SO6L (LF4)
	ACPL-W50L	TLP2719 (LF4)	☆	2	1 Mbps	SO6L (LF4)
	ACPL-W60L	TLP2768A (LF4)		1	20 Mbps	SO6L (LF4)
	ACPL-W611	TLP2768A (LF4)		2	20 Mbps	SO6L (LF4)
	ACPL-W61L	TLP2761 (LF4)		1	15 Mbps	SO6L (LF4)
	ACPL-W70L	TLP2770		3	20 Mbps	SO6L
	HCPL-0201	TLP2355		4	5 Mbps	5pin SO6
	HCPL-0211	TLP2355		4	5 Mbps	5pin SO6
	HCPL-0454	TLP2304	☆	4	1 Mbps	5pin SO6
	HCPL-0466	TLP2304	☆	4	1 Mbps	5pin SO6
	HCPL-0600	TLP2368		4	20 Mbps	5pin SO6
	HCPL-0601	TLP2368		4	20 Mbps	5pin SO6
	HCPL-060L	TLP2368		4	20 Mbps	5pin SO6
	HCPL-0611	TLP2368		4	20 Mbps	5pin SO6
	HCPL-061A	TLP2368		4	20 Mbps	5pin SO6
	HCPL-061N	TLP2368		4	20 Mbps	5pin SO6
	HCPL-0630	TLP2261		4	15 Mbps	5pin SO6
	HCPL-0631	TLP2261		4	15 Mbps	5pin SO6
	HCPL-063A	TLP2261		2	15 Mbps	SO8L
	HCPL-063L	TLP2261		4	15 Mbps	5pin SO6
	HCPL-063N	TLP2261		4	15 Mbps	5pin SO6
	HCPL-0661	TLP2261		4	15 Mbps	5pin SO6
	HCPL-0708	TLP2368		4	20 Mbps	5pin SO6
	HCPL-0738	TLP2261		4	15 Mbps	5pin SO6
	HCPL-2200	TLP2745		4	10 Mbps	SO6L
	HCPL-2201	TLP2745		4	10 Mbps	SO6L
	HCPL-2202	TLP2745		4	10 Mbps	SO6L
	HCPL-2211	TLP2745		4	10 Mbps	SO6L
	HCPL-2212	TLP2745		4	10 Mbps	SO6L
	HCPL-2219	TLP2745		4	10 Mbps	SO6L

☆ New Products

**Note:1**

- 1: Package and characteristics are almost same
- 2: Almost same package but similar characteristics
- 3: Almost same characteristics but different package
- 4: Different package and similar characteristics

Manufacturer	Competitor's Product		Toshiba				
	Part Number	Part Number	Compatible Level (Note:1)	Data Rate (typ.)	Package		
BROADCOM	HCPL-2601	TLP2363	4	15 Mbps	5pin SO6		
	HCPL-2611	TLP2363	4	15 Mbps	5pin SO6		
	HCPL-2630	TLP2261	4	15 Mbps	SO8L		
	HCPL-2631	TLP2261	4	15 Mbps	SO8L		
	HCPL-4502	TLP2719	☆	3	1 Mbps	SO6L	
	HCPL-4503	TLP2719	☆	3	1 Mbps	SO6L	
	HCPL-4504	TLP2719	☆	3	1 Mbps	SO6L	
	HCPL-4506	TLP2704		4	1 Mbps	SO6L	
	HCPL-4661	TLP2261		4	15 Mbps	SO8L	
	HCPL-M452	TLP2309		2	1 Mbps	5pin SO6	
	HCPL-M453	TLP2309		1	1 Mbps	5pin SO6	
	HCPL-M454	TLP2309		1	1 Mbps	5pin SO6	
	HCPL-M456	TLP2304	☆	1	1 Mbps	5pin SO6	
	HCPL-M600	TLP2363	☆	1	15 Mbps	5pin SO6	
	HCPL-M601	TLP2363	☆	1	15 Mbps	5pin SO6	
	HCPL-M611	TLP2363	☆	1	15 Mbps	5pin SO6	
	Renesas	PS8101	TLP2309	3	1 Mbps	5pin SO6	
		PS8302L	TLP2704	2	2 Mbps	SO6L	
		PS8501	TLP2719	☆	3	1 Mbps	SO6L
		PS8502	TLP2719	☆	3	1 Mbps	SO6L
PS8601		TLP2719	☆	3	1 Mbps	SO6L	
PS8602		TLP2719	☆	3	1 Mbps	SO6L	
PS8701		TLP2309	2	1 Mbps	5pin SO6		
PS8802-2		TLP2210	4	5 Mbps	SO8L (LF4)		
PS9113		TLP104	4	1 Mbps	5pin SO6		
PS9115		TLP2366	2	15 Mbps	5pin SO6		
PS9117A		TLP2361	2	15 Mbps	5pin SO6		
PS9121		TLP2368	2	20 Mbps	5pin SO6		
PS9122		TLP2362	2	10 Mbps	5pin SO6		
PS9123		TLP2366	2	20 Mbps	5pin SO6		
PS9124		TLP2362	2	10 Mbps	5pin SO6		
PS9151		TLP2366	1	20 Mbps	5pin SO6		
PS9213		TLP104	4	1 Mbps	5pin SO6		
PS9214		TLP2362	4	10 Mbps	5pin SO6		
PS9303L		TLP2745	2	10 Mbps	SO6L		
PS9313L		TLP2704	2	2 Mbps	SO6L		
PS9317L		TLP2770	2	20 Mbps	SO6L		
PS9324L		TLP2768A	2	20 Mbps	SO6L		
PS9351L		TLP2770	1	15 Mbps	SO6L		
PS9513		TLP2704	3	1 Mbps	SO6L		
PS9587		TLP2363	4	15 Mbps	5pin SO6		
PS9617		TLP2363	4	15 Mbps	5pin SO6		
PS9817A-1		TLP2368	3	20 Mbps	5pin SO6		
PS9817A-2		TLP2261	3	15 Mbps	5pin SO6		
PS9821-1		TLP2366	3	20 Mbps	5pin SO6		
PS9821-2		TLP2261	3	15 Mbps	5pin SO6		
PS9822-1		TLP2304	☆	3	1 Mbps	5pin SO6	
PS9822-2		TLP2210	4	5 Mbps	SO8L (LF4)		
PS9851-1		TLP2366	3	20 Mbps	5pin SO6		
PS9851-2	TLP2261	3	15 Mbps	SO8L (LF4)			
SHARP	PC400T	TLP2358	4	100 kbps	5pin SO6		
	PC410L	TLP2362	2	10 Mbps	5pin SO6		
	PC410S	TLP2368	4	20 Mbps	5pin SO6		
	PC411S	TLP2366	3	20 Mbps	5pin SO6		
	PC456L	TLP2309	2	1 Mbps	5pin SO6		
	PC457L	TLP2309	2	1 Mbps	5pin SO6		
	PC4D10	TLP2261	4	15 Mbps	5pin SO6		

☆ New Products

**Note:1**

- 1: Package and characteristics are almost same
- 2: Almost same package but similar characteristics
- 3: Almost same characteristics but different package
- 4: Different package and similar characteristics

## Isolation Amplifiers / Delta-Sigma Modulators

Manufacturer	Competitor's Product	Toshiba				
		Part Number	Compatible Level (Note:1)	Input Feature	Output Feature	Package
BROADCOM	HCPL-7800	TLP7920	4	differential	Analog, Differential	SO8L (LF4)
	HCPL-7800A	TLP7920	4	differential	Analog, Differential	SO8L (LF4)
	HCPL-7840	TLP7920	4	differential	Analog, Differential	SO8L (LF4)
	ACPL-C790	TLP7820	1	differential	Analog, Differential	SO8L (LF4)
	ACPL-C79A	TLP7820	1	differential	Analog, Differential	SO8L (LF4)
	ACPL-C79B	TLP7820	4	differential	Analog, Differential	SO8L (LF4)
	ACPL-7900	TLP7920	4	differential	Analog, Differential	SO8L (LF4)
	ACPL-790A	TLP7920	4	differential	Analog, Differential	SO8L (LF4)
	ACPL-790B	TLP7920	4	differential	Analog, Differential	SO8L (LF4)
	ACPL-C784	TLP7820	1	differential	Analog, Differential	SO8L (LF4)
	ACPL-C780	TLP7820	1	differential	Analog, Differential	SO8L (LF4)
	ACPL-C78A	TLP7820	1	differential	Analog, Differential	SO8L (LF4)
	ACPL-C870	TLP7820	4	differential	Analog, Differential	SO8L (LF4)
	ACPL-C87A	TLP7820	2	differential	Analog, Differential	SO8L (LF4)
	ACPL-C87B	TLP7820	2	differential	Analog, Differential	SO8L (LF4)
	HCPL-7860	TLP7930	4	differential	Digital, Internal CLK	SO8L (LF4)
	HCPL-786J	TLP7830	4	differential	Digital, Internal CLK	SO8L (LF4)
	ACPL-C797	TLP7830	4	differential	Digital, Internal CLK	SO8L (LF4)
	ACPL-7970	TLP7930	4	differential	Digital, Internal CLK	SO8L (LF4)
	ACPL-796J	TLP7830	4	differential	Digital, Internal CLK	SO8L (LF4)
ACPL-798J	TLP7830	4	differential	Digital, Internal CLK	SO8L (LF4)	
TI	AMC1100DWV	TLP7820	2	differential	Analog, Differential	SO8L (LF4)
	AMC1100DUB	TLP7920	4	differential	Analog, Differential	SO8L (LF4)
	AMC1200BDWV	TLP7820	2	differential	Analog, Differential	SO8L (LF4)
	AMC1200BDUB	TLP7920	4	differential	Analog, Differential	SO8L (LF4)
	AMC1203PSA	TLP7830	4	differential	Digital, Internal CLK	SO8L (LF4)
	AMC1203DUB	TLP7930	4	differential	Digital, Internal CLK	SO8L (LF4)
	AMC1203DW	TLP7830	4	differential	Digital, Internal CLK	SO8L (LF4)
	AMC1203BPASA	TLP7830	4	differential	Digital, Internal CLK	SO8L (LF4)
	AMC1203BDUB	TLP7930	4	differential	Digital, Internal CLK	SO8L (LF4)
	AMC1203BDW	TLP7830	4	differential	Digital, Internal CLK	SO8L (LF4)
	AMC1204DW	TLP7830	4	differential	Digital, Internal CLK	SO8L (LF4)
	AMC1204BDWV	TLP7830	2	differential	Digital, Internal CLK	SO8L (LF4)
	AMC1204BDW	TLP7830	4	differential	Digital, Internal CLK	SO8L (LF4)
	AMC1301	TLP7820	2	differential	Analog, Differential	SO8L (LF4)
	AMC1304	TLP7830	4	differential	Digital, Internal CLK	SO8L (LF4)
AMC1305	TLP7830	4	differential	Digital, Internal CLK	SO8L (LF4)	
Analog Devices	AD7400A	TLP7830	4	differential	Digital, Internal CLK	SO8L (LF4)
	AD7401A	TLP7830	4	differential	Digital, Internal CLK	SO8L (LF4)
	AD7402	TLP7830	2	differential	Digital, Internal CLK	SO8L (LF4)
	AD7403	TLP7830	2	differential	Digital, Internal CLK	SO8L (LF4)
	AD7405	TLP7830	4	differential	Digital, Internal CLK	SO8L (LF4)
Renesas	PS8551A	TLP7920	4	differential	Analog, Differential	SO8L (LF4)
	PS9551A	TLP7930	4	differential	Digital, Internal CLK	SO8L (LF4)

### Note:1

- 1: Package and characteristics are almost same
- 2: Almost same package but similar characteristics
- 3: Almost same characteristics but different package
- 4: Different package and similar characteristics

# High Speed DIGITAL ISOLATORS

Manufacturer	Competitor's Product	Toshiba								
	Part Number	Part Number	Compatible Level (Note:1)	Total Channels	Reverse Channels	Data Rate (Mbps)	Control signal	Default State	Package	
SiLab	Si8641BA-B-IU	DCL541A01	★	4	4	1	150	input disable	L	SOIC16-W
	Si8641BA-C-IU	DCL541A01	★	4	4	1	150	input disable	L	SOIC16-W
	Si8641BB-B-IS	DCL541A01	★	2	4	1	150	input disable	L	SOIC16-W
	Si8641BB-B-IS1	DCL541A01	★	4	4	1	150	input disable	L	SOIC16-W
	Si8641BB-B-IU	DCL541A01	★	4	4	1	150	input disable	L	SOIC16-W
	Si8641BC-B-IS1	DCL541A01	★	4	4	1	150	input disable	L	SOIC16-W
	Si8641BD-B-IS	DCL541A01	★	2	4	1	150	input disable	L	SOIC16-W
	Si8641BT-IS	DCL541A01	★	2	4	1	150	input disable	L	SOIC16-W
	Si8641BA-C-IU	DCL541A01	★	4	4	1	150	input disable	L	SOIC16-W
	Si8641BD-B-IS2	DCL541A01	★	2	4	1	150	input disable	L	SOIC16-W
	Si8641EC-B-IS1	DCL541B01	★	4	4	1	150	input disable	H	SOIC16-W
	Si8641ED-B-IS	DCL541B01	★	2	4	1	150	input disable	H	SOIC16-W
	Si8641ET-IS	DCL541B01	★	2	4	1	150	input disable	H	SOIC16-W
	Si8641EB-B-IU	DCL541B01	★	4	4	1	150	input disable	H	SOIC16-W
	Si8641ED-B-IS2	DCL541B01	★	2	4	1	150	input disable	H	SOIC16-W
TI	ISO7741FDW	DCL541A01	★	2	4	1	150	input disable	L	SOIC16-W
	ISO7741FBDW	DCL541A01	★	2	4	1	150	input disable	L	SOIC16-W
	ISO7741FDBQ	DCL541A01	★	2	4	1	150	input disable	L	SOIC16-W
	ISO7641FC	DCL541A01	★	2	4	1	150	input disable	H	SOIC16-W
	ISO7641FM	DCL541A01	★	4	4	1	150	input disable	H	SOIC16-W
	ISO7241M	DCL541B01	★	2	4	1	150	input disable	H	SOIC16-W
	ISO7741DW	DCL541B01	★	2	4	1	150	input disable	H	SOIC16-W
	ISO7741BDW	DCL541B01	★	2	4	1	150	input disable	H	SOIC16-W
	ISO7741DBQ	DCL541B01	★	4	4	1	150	input disable	H	SOIC16-W
	ISO7740FDW	DCL540L01	★	1	4	0	150	output enable	L	SOIC16-W
	ISO7740FDBQ	DCL540L01	★	3	4	0	150	output enable	L	SOIC16-W
	ISO7740FQDWQ1	DCL540L01	★	1	4	0	150	output enable	L	SOIC16-W
	ISO7740FQDBQQ1	DCL540L01	★	3	4	0	150	output enable	L	SOIC16-W
	ISO7741FQDWQ1	DCL540L01	★	1	4	0	150	output enable	L	SOIC16-W
	ISO7741FQDWWQ1	DCL540L01	★	3	4	0	150	output enable	L	SOIC16-W
	ISO7741FQDBQQ1	DCL540L01	★	3	4	0	150	output enable	L	SOIC16-W
	ISO7240M	DCL540H01	★	1	4	0	150	output enable	H	SOIC16-W
	ISO7640FM	DCL540H01	★	1	4	0	150	output enable	H	SOIC16-W
	ISO7740DW	DCL540H01	★	1	4	0	150	output enable	H	SOIC16-W
	ISO7740DBQ	DCL540H01	★	3	4	0	150	output enable	H	SOIC16-W
	ISO7740QDWQ1	DCL540H01	★	1	4	0	150	output enable	H	SOIC16-W
ISO7740QDBQQ1	DCL540H01	★	3	4	0	150	output enable	H	SOIC16-W	
ISO7741QDWQ1	DCL540H01	★	1	4	0	150	output enable	H	SOIC16-W	
ISO7741QDBQQ1	DCL540H01	★	3	4	0	150	output enable	H	SOIC16-W	
ISO7741QDWWQ1	DCL540H01	★	3	4	0	150	output enable	H	SOIC16-W	
ADI	ADuM141D0BRZ	DCL541A01	★	3	4	1	150	input disable	L	SOIC16-W
	ADuM141E0BRZ	DCL541A01	★	4	4	1	150	input disable	L	SOIC16-W
	ADuM141D0BRWZ	DCL541A01	★	1	4	1	150	input disable	L	SOIC16-W
	ADuM141D0BRQZ	DCL541A01	★	3	4	1	150	input disable	L	SOIC16-W
	ADuM141E0BRQZ	DCL541A01	★	4	4	1	150	input disable	L	SOIC16-W
	ADuM241D0BRWZ	DCL541A01	★	1	4	1	150	input disable	L	SOIC16-W
	ADuM241E0BRWZ	DCL541A01	★	2	4	1	150	input disable	L	SOIC16-W



Manufacturer	Competitor's Product	Toshiba								
	Part Number	Part Number	Compatible Level (Note:1)	Total Channels	Reverse Channels	Data Rate (Mbps)	Control signal	Default State	Package	
	ADuM241D0BRIZ	DCL541A01 ★	1	4	1	150	input disable	L	SOIC16-W	
	ADuM241E0BRIZ	DCL541A01 ★	2	4	1	150	input disable	L	SOIC16-W	
	ADuM141D1BRZ	DCL541B01 ★	3	4	1	150	input disable	H	SOIC16-W	
	ADuM141E1BRZ	DCL541B01 ★	4	4	1	150	input disable	H	SOIC16-W	
	ADuM141D1BRWZ	DCL541B01 ★	1	4	1	150	input disable	H	SOIC16-W	
	ADuM141D1BRQZ	DCL541B01 ★	3	4	1	150	input disable	H	SOIC16-W	
	ADuM141E1BRWZ	DCL541B01 ★	2	4	1	150	input disable	H	SOIC16-W	
	ADuM141E1WBRWZ	DCL541B01 ★	2	4	1	150	input disable	H	SOIC16-W	
	ADuM141E0BRWZ	DCL541B01 ★	2	4	1	150	input disable	H	SOIC16-W	
	ADuM141E1BRQZ	DCL541B01 ★	4	4	1	150	input disable	H	SOIC16-W	
	ADuM141E1WBRQZ	DCL541B01 ★	4	4	1	150	input disable	H	SOIC16-W	
	ADuM241D1BRWZ	DCL541B01 ★	1	4	1	150	input disable	H	SOIC16-W	
	ADuM241E1BRWZ	DCL541B01 ★	2	4	1	150	input disable	H	SOIC16-W	
	ADuM241E1WBRWZ	DCL541B01 ★	2	4	1	150	input disable	H	SOIC16-W	
	ADuM241D1BRIZ	DCL541B01 ★	1	4	1	150	input disable	H	SOIC16-W	
	ADuM241E1BRIZ	DCL541B01 ★	2	4	1	150	input disable	H	SOIC16-W	
	ADuM140D0BRZ	DCL540L01 ★	4	4	0	150	output enable	L	SOIC16-W	
	ADuM140E0BRZ	DCL540L01 ★	3	4	0	150	output enable	L	SOIC16-W	
	ADuM140D0BRWZ	DCL540L01 ★	2	4	0	150	output enable	L	SOIC16-W	
	ADuM140D0BRQZ	DCL540L01 ★	4	4	0	150	output enable	L	SOIC16-W	
	ADuM140E0BRWZ	DCL540L01 ★	1	4	0	150	output enable	L	SOIC16-W	
	ADuM140E0BRQZ	DCL540L01 ★	3	4	0	150	output enable	L	SOIC16-W	
	ADuM240D0BRWZ	DCL540L01 ★	2	4	0	150	output enable	L	SOIC16-W	
	ADuM240E0BRWZ	DCL540L01 ★	1	4	0	150	output enable	L	SOIC16-W	
	ADuM240E0WBRWZ	DCL540L01 ★	1	4	0	150	output enable	L	SOIC16-W	
	ADuM240D0BRIZ	DCL540L01 ★	2	4	0	150	output enable	L	SOIC16-W	
	ADuM240E0BRIZ	DCL540L01 ★	1	4	0	150	output enable	L	SOIC16-W	
	ADuM140D1BRZ	DCL540H01 ★	4	4	0	150	output enable	H	SOIC16-W	
	ADuM140E1BRZ	DCL540H01 ★	3	4	0	150	output enable	H	SOIC16-W	
	ADuM140D1BRWZ	DCL540H01 ★	2	4	0	150	output enable	H	SOIC16-W	
	ADuM140D1BRQZ	DCL540H01 ★	4	4	0	150	output enable	H	SOIC16-W	
	ADuM140E1BRWZ	DCL540H01 ★	1	4	0	150	output enable	H	SOIC16-W	
	ADuM140E1WBRWZ	DCL540H01 ★	1	4	0	150	output enable	H	SOIC16-W	
	ADuM140E1BRQZ	DCL540H01 ★	3	4	0	150	output enable	H	SOIC16-W	
	ADuM240D1BRWZ	DCL540H01 ★	2	4	0	150	output enable	H	SOIC16-W	
	ADuM240E1BRWZ	DCL540H01 ★	1	4	0	150	output enable	H	SOIC16-W	
	ADuM240D1BRIZ	DCL540H01 ★	2	4	0	150	output enable	H	SOIC16-W	
	ADuM240E1BRIZ	DCL540H01 ★	1	4	0	150	output enable	H	SOIC16-W	
Skyworks	Si8640BB-B-IS	DCL540L01 ★	1	4	0	150	output enable	L	SOIC16-W	
	Si8640BB-B-IS1	DCL540L01 ★	3	4	0	150	output enable	L	SOIC16-W	
	Si8640BC-B-IS1	DCL540L01 ★	3	4	0	150	output enable	L	SOIC16-W	
	Si8640BD-B-IS	DCL540L01 ★	1	4	0	150	output enable	L	SOIC16-W	
	Si8640BT-IS	DCL540L01 ★	1	4	0	150	output enable	L	SOIC16-W	
	Si8640BA-B-IU	DCL540L01 ★	3	4	0	150	output enable	L	SOIC16-W	
	Si8640BB-B-IU	DCL540L01 ★	3	4	0	150	output enable	L	SOIC16-W	
	Si8640BD-B-IS2	DCL540L01 ★	1	4	0	150	output enable	L	SOIC16-W	
	Si8640EC-B-IS1	DCL540H01 ★	3	4	0	150	output enable	H	SOIC16-W	

Manufacturer	Competitor's Product	Toshiba								
	Part Number	Part Number	Compatible Level (Note:1)	Total Channels	Reverse Channels	Data Rate (Mbps)	Control signal	Default State	Package	
	Si8640ED-B-IS	DCL540H01	★ 1	4	0	150	output enable	H	SOIC16-W	
	Si8640ET-IS	DCL540H01	★ 1	4	0	150	output enable	H	SOIC16-W	
	Si8640EB-B-IU	DCL540H01	★ 3	4	0	150	output enable	H	SOIC16-W	
	Si8640ED-B-IS2	DCL540H01	★ 1	4	0	150	output enable	H	SOIC16-W	
	Si8645BA-B-IU	DCL540C01	★ 3	4	0	150	without	L	SOIC16-W	
	Si8645BB-B-IS	DCL540C01	★ 1	4	0	150	without	L	SOIC16-W	
	Si8645BB-B-IS1	DCL540C01	★ 3	4	0	150	without	L	SOIC16-W	
	Si8645BC-B-IS1	DCL540C01	★ 3	4	0	150	without	L	SOIC16-W	
	Si8645BD-B-IS	DCL540C01	★ 1	4	0	150	without	L	SOIC16-W	
	Si8645BT-IS	DCL540C01	★ 1	4	0	150	without	L	SOIC16-W	
	Si8645BA-C-IU	DCL540C01	★ 3	4	0	150	without	L	SOIC16-W	
	Si8645BB-B-IS	DCL540C01	★ 1	4	0	150	without	L	SOIC16-W	
	Si8645BB-B-IU	DCL540C01	★ 3	4	0	150	without	L	SOIC16-W	
	Si8645ET-IS	DCL540C01	★ 1	4	0	150	without	H	SOIC16-W	

★ Under Development (The specification is subject to change without notice.)

**Note:1**

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- 4: Different package and similar characteristics

# Photorelays (1-Form-A)

Manufacturer	Competitor's Product	Toshiba					
		Part Number	Compatible Level (Note:1)	OFF-state Output Terminal Voltage	ON-state Current	Package	
Panasonic	AQV201	TLP3544	1	40 V	3.5 A	DIP6	
	AQV202	TLP3545A	1	60 V	4 A	DIP6	
	AQV204	TLP223GA	☆	400 V	0.12 A	DIP4	
	AQV210EH	TLP240G	4	350 V	0.10 A	DIP4	
	AQV210S	TLP192G	1	350 V	0.11 A	2.54SOP6	
	AQV212	TLP240A	3	60 V	0.5 A	DIP4	
	AQV212S	TLP176AM	3	60 V	0.7 A	4pin SO6	
	AQV214	TLP223GA	☆	400 V	0.12 A	DIP4	
	AQV214E	TLP223GA	☆	400 V	0.12 A	DIP4	
	AQV214EH	TLP223GA	☆	400 V	0.12 A	DIP4	
	AQV214H	TLP223GA	☆	400 V	0.12 A	DIP4	
	AQV214S	TLP172GAM	3	400 V	0.11 A	4pin SO6	
	AQV215	TLP3546A	1	100 V	3.5 A	DIP6	
	AQV215S	TLP3109A	1	100 V	3 A	2.54SOP6	
	AQV216	TLP223J	☆	400 V	0.09 A	DIP4	
	AQV217S	TLP171D	3	200 V	0.2 A	2.54SOP4	
	AQV227NS	TLP199D	2	200 V	0.2 A	2.54SOP6	
	AQV251G	TLP3543A	1	30 V	5 A	DIP6	
	AQV252	TLP3545A	1	60 V	4 A	DIP6	
	AQV252G	TLP3545A	1	60 V	4 A	DIP6	
	AQV252G2S	TLP3107A	1	60 V	4 A	2.54SOP6	
	AQV252G3S	TLP3107A	1	60 V	4 A	2.54SOP6	
	AQV254	TLP223GA	☆	400 V	0.12 A	DIP4	
	AQV254H	TLP223GA	☆	400 V	0.12 A	DIP4	
	AQV255	TLP3546A	1	100 V	3.5 A	DIP6	
	AQV255GS	TLP3109A	1	100 V	3 A	2.54SOP6	
	AQV255G3S	TLP3109A	1	100 V	3 A	2.54SOP6	
	AQV258	TLX9160T	☆	3	1500 V	0.05 A	SO16L-T
	AQY210LS	TLP174G	1	350 V	0.12 A	2.54SOP4	
	AQY210S	TLP172GM	1	350 V	0.11 A	4pin SO6	
	AQY211EH	TLP241A	1	40 V	2.0 A	DIP4	
	AQY211G2S	TLP3127	1	60 V	1.7 A	2.54SOP4	
	AQY212G2S	TLP3122A	1	60 V	1.4 A	4pin SO6	
	AQY212GS	TLP3122A	1	60 V	1.4 A	4pin SO6	
	AQY212S	TLP176AM	1	60 V	0.7 A	4pin SO6	
	AQY214EH	TLP223GA	☆	400 V	0.12 A	DIP4	
	AQY214S	TLP172GAM	1	400 V	0.11 A	2.54SOP4	
	AQY216EH	TLP223J	☆	600 V	0.09 A	DIP4	
	AQY221N2S	TLP3440S	☆	40 V	0.12 A	S-VSON4T	
	AQY221N2V	TLP3440S	☆	40 V	0.12 A	S-VSON4T	
	AQY221R2S	TLP3475S	☆	40 V	0.4 A	S-VSON4T	
	AQY221R2V	TLP3414	1	40 V	0.25 A	S-VSON4	
	AQY221R6T	TLP3406S	4	30 V	1.5 A	S-VSON4	
	AQY222R2V	TLP3475S	☆	40 V	0.4 A	S-VSON4	
	AQY225R1S	TLP3409S	4	100 V	0.65 A	S-VSON4	
	AQY225R2S	TLP3419	4	80 V	0.2 A	VSON4	
	AQY225R2V	TLP3417	☆	40 V	0.12 A	VSON4	
AQY234S	TLP172GAM	1	400 V	0.11 A	4pin SO6		
AQY275	TLP241B	☆	100 V	2 A	DIP4		
IXYS	CPC1330	TLP223GA	☆	400 V	0.12 A	DIP4	
	CPC1393	TLP223J	☆	1	600 V	0.09 A	DIP4
Renesas	LCA100	TLP223GA	☆	3	400 V	0.12 A	DIP4
	PS7113-1A	TLP3546A	2	100 V	3.5 A	DIP6	
	PS7141E-1A	TLP223GA	☆	3	400 V	0.12 A	DIP4
	PS7160-1A	TLP223J	☆	3	600 V	0.09 A	DIP4
	PS7206-1A	TLP176AM	1	60 V	0.7 A	4pin SO6	
	PS7241E-1A	TLP172GAM	1	400 V	0.11 A	2.54SOP4	
	PS7341-1A	TLP223GA	☆	3	400 V	0.12 A	DIP4
	PS7360-1A	TLP223J	☆	3	600 V	0.09 A	DIP4
	PS7804-1A	TLP3475S	☆	3	60 V	0.4 A	S-VSON4T

☆ New Products

**Note:1**

- 1: Package and characteristics are almost same
- 2: Almost same package but similar characteristics
- 3: Almost same characteristics but different package
- 4: Different package and similar characteristics

## Photorelays (1-Form-A)

Manufacturer	Competitor's Product	Toshiba				
		Part Number	Compatible Level (Note:1)	OFF-state Output Terminal Voltage	ON-state Current	Package
TOWARD	AB21RS	TLP176AM	1	60 V	0.7 A	4pin SO6
	AB38S	TLP170J	1	600 V	0.09 A	2.54SOP4
	AB31S	TLP172GM	2	350 V	0.11 A	4pin SO6
	AB37S	TLP176AM	1	60 V	0.7 A	4pin SO6
	AB45S	TLP176AM	1	60 V	0.7 A	4pin SO6
	AB34S	TLP176D	1	200 V	0.2 A	2.54SOP4
	AB30S	TLP172GAM	1	400 V	0.11 A	2.54SOP4
	AB37	TLP240A	1	60 V	0.5 A	DIP4
	AB45	TLP240A	1	60 V	0.5 A	DIP4
	AB34	TLP240D	1	200 V	0.25 A	DIP4
	AB31	TLP240G	2	350 V	0.10 A	DIP4
	AB30	TLP223GA ☆	1	400 V	0.12 A	DIP4
	AB38	TLP223J ☆	1	600 V	0.09 A	DIP4
	AB26	TLP241A	1	40 V	2.0 A	DIP4
	AB47	TLP3556A	2	100 V	2.0 A	DIP4
	AB48	TLP3556A	1	100 V	2.0 A	DIP4
BROADCOM	ASSR-601J	TLX9160T ☆	1	1500 V	0.05 A	SO16L-T

## Photorelays (2-Form-A)

Manufacturer	Competitor's Product	Toshiba				
		Part Number	Compatible Level (Note:1)	OFF-state Output Terminal Voltage	ON-state Current	Package
Panasonic	AQW210	TLP240G x 2 pcs	4	350 V	0.1 A	DIP4
	AQW210EH	TLP223GA x 2 pcs ☆	4	400 V	0.12 A	DIP4
	AQW210HL	TLP224G-2	2	350 V	0.12 A	DIP8
	AQW210S	TLP172GM x 2 pcs	3	350 V	0.11 A	4pin SO6
	AQW212	TLP240A x 2 pcs	4	60 V	0.5 A	DIP4
	AQW212EH	TLP240A x 2 pcs	4	60 V	0.5 A	DIP4
	AQW212S	TLP202A	1	60 V	0.4 A	2.54SOP8
	AQW214	TLP223GA x 2 pcs ☆	3	400 V	0.12 A	DIP4
	AQW214EH	TLP223GA x 2 pcs ☆	3	400 V	0.12 A	DIP4
	AQW214S	TLP206GA	1	400 V	0.12 A	2.54SOP8
	AQW215	TLP3556A x 2 pcs	3	100 V	2.0 A	DIP4
	AQW216	TLP223J x 2 pcs ☆	3	600 V	0.09 A	DIP4
	AQW216EH	TLP223J x 2 pcs ☆	3	600 V	0.09 A	DIP4
	AQW217	TLP240D x 2 pcs	3	200 V	0.25 A	DIP4
	AQW223R2S	TLP240G x 2 pcs	4	350 V	0.1 A	DIP4
	AQW227N	TLP240D x 2 pcs	3	200 V	0.25 A	DIP4
	IXYS	CPC2014N	TLP202A	1	60 V	0.4 A
CPC2017N		TLP202A	4	60 V	0.4 A	2.54SOP8
CPC2025N		TLP206GA	4	400 V	0.12 A	2.54SOP8
CPC2030N		TLP206G	4	350 V	0.12 A	2.54SOP8
Renesas	PS7241-2A	TLP172GAM x 2 pcs	3	400 V	0.11 A	4pin SO6

## Photorelays (1-Form-A / 1-Form-B)

Manufacturer	Competitor's Product	Toshiba				
		Part Number	Compatible Level (Note:1)	OFF-state Output Terminal Voltage	ON-state Current	Package
Panasonic	AQW610EH	TLP4006G	1	350 V	0.12 A	DIP8
	AQW610S	TLP4026G	1	350 V	0.12 A	2.54SOP8
	AQW614	TLP4006G	2	350 V	0.12 A	DIP8
	AQW614EH	TLP4006G	2	350 V	0.12 A	DIP8
	AQW654	TLP4006G	2	350 V	0.12 A	DIP8

☆ New Products

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## Photorelays (1-Form-B, 2-Form-B)

Manufacturer	Competitor's Product	Toshiba					
		Part Number	Compatible Level (Note:1)	OFF-state Output Terminal Voltage	ON-state Current	Package	
Panasonic	AQV410EH	TLP4597G	1	350 V	0.15 A	DIP6	
	AQV414	TLP4597G	2	350 V	0.15 A	DIP6	
	AQV414E	TLP4597G	2	350 V	0.15 A	DIP6	
	AQV414S	TLP4197G	2	350 V	0.12 A	2.54SOP6	
	AQV454	TLP4597G	2	350 V	0.15 A	DIP6	
	AQV454H	TLP4597G	2	350 V	0.15 A	DIP6	
	AQY410EH	TLP4227G	1	350 V	0.15 A	DIP4	
	AQY410S	TLP4176G	1	350 V	0.12 A	2.54SOP4	
	AQY412S	TLP4176A	1	60 V	0.5 A	2.54SOP4	
	AQY412SX	TLP4176A	1	60 V	0.5 A	2.54SOP4	
	AQY412SZ	TLP4176A	1	60 V	0.5 A	2.54SOP4	
	AQY414EH	TLP4227G	2	350 V	0.15 A	DIP4	
	AQY414S	TLP4176G	2	350 V	0.12 A	2.54SOP4	
	AQW414	TLP4227G-2	2	350 V	0.15 A	DIP8	
	AQW414EH	TLP4227G-2	2	350 V	0.15 A	DIP8	
	AQW414S	TLP4206G	2	350 V	0.12 A	2.54SOP8	
	AQW454	TLP4227G-2	2	350 V	0.15 A	DIP8	
	IXYS	CPC1125N	TLP4176G	2	350 V	0.12 A	2.54SOP4
		CPC1130N	TLP4176G	1	350 V	0.12 A	2.54SOP4
		CPC1135N	TLP4176G	1	350 V	0.12 A	2.54SOP4
CPC1150N		TLP4176G	1	350 V	0.12 A	2.54SOP4	
CPC1231N		TLP4176G	1	350 V	0.12 A	2.54SOP4	
CPC1333		TLP4227G	2	350 V	0.15 A	DIP4	
CPC2125N		TLP4206G	4	350 V	0.12 A	2.54SOP8	
LBB110		TLP4227G-2	1	350 V	0.15 A	DIP8	
LCB110		TLP4597G	2	350 V	0.15 A	DIP6	
LCB111		TLP4597G	2	350 V	0.15 A	DIP6	
LCB710		TLP4590A ☆	1	60 V	1.2 A	DIP6	
PBB190		TLP4227G-2	2	350 V	0.15 A	DIP8	
PLB190		TLP4597G	2	350 V	0.15 A	DIP6	
XBB170		TLP4227G-2	1	350 V	0.15 A	DIP8	
XCB170		TLP4597G	1	350 V	0.15 A	DIP6	

☆ New Products

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# 6. Part Naming Conventions

## 3-Digit Part Numbering Example (Except Alphabetical Characters)

Example of Photocouplers

TLP 1 76 A  
①      ②      ③      ④

- ① Photocoupler
- ② Package Type
  - 1: SO6 / SOP
  - 2: SO4 / SOP / SOP16 / DIP (2500 Vrms / 5000 Vrms)
  - 3: SO6L / DIP (5000 Vrms)
  - 4: DIP4 (5000 Vrms)
  - 5: DIP (2500 Vrms)
  - 6: DIP (5000 Vrms)
  - 7: DIP (4000 Vrms)
- ③ Output Type
  - 00 to 09: IC Output, Photorelay
  - 10 to 19: IC Output
  - 20 to 29: 4 / 8 / 16-pin multi-channel Photocoupler
  - 30 to 39: 6 pin
  - 40 to 49: Thyristor Output, Photorelay
  - 50 to 59: IC Output
  - 60 to 69: Triac Output
  - 70 to 79: Photorelay
  - 80 to 89: Transistor Output / Darlingtion Transistor Output
  - 90 to 99: Transistor Output, Photorelay, Photovoltaic Output
- ④ Suffix
  - Withstand Voltage Level
    - (a) Photorelay      (b) Triac Output, Thyristor Output
    - A: 40 V, 60 V      G: 400 V
    - D: 200 V      J: 600 V
    - G: 350 V      L: 800 V
    - GA: 400 V
    - J: 600 V

## 4-Digit Part Numbering Example (Except Alphabetical Characters)

Example of Photocouplers

TLP 2 7 61 A  
①      ②      ③      ④      ⑤

- ① Photocoupler
- ② Product category
  - 2: IC Output (logic, IPM Drivers)
  - 3: Photorelay (1-form-A) / Triac Output / Photovoltaic Output
  - 4: Photorelay (except 1-form-A)
  - 5: IC Output (Power Device Driver / Smart Gate Driver)
  - 7: Isolation Amplifier
- ③ Package category

Number	Package Type		Product Category
	IC Output / Isolation Amplifier	Photorelay	Triac Output / Photovoltaic Output
0	SO4 / MFSOP6	-	Triac Output
1	SO8 (Dual ch.)	SOP	-
2	SO8L (Dual ch.), SO16L	SSOP	-
3	SO6	USOP	-
4	SO8 (Single ch.)	VSON, P-SON	-
5	-	DIP	-
6	DIP8 (Dual ch.)	-	-
7	SO6L	-	Triac Output
8	SO8L (Single ch.)	-	-
9	DIP8 (Single ch.)	-	Photovoltaic Output

- ④ Serial Number
- ⑤ Suffix

## Part Naming Example for Digital Isolators

### Standard Digital Isolators

Example of Standard Digital Isolators

DC L 5 4 0 C 0 1  
①      ②      ③      ④      ⑤      ⑥      ⑦      ⑧

- ① Digital Isolators
- ② Output Type
  - L: Logic
- ③ Data rate
  - 1: to 1Mbps
  - 2: to 10Mbps
  - 3: to 50Mbps
  - 4: to 100Mbps
  - 5: to 200Mbps
- ④ Total Channel
  - 4: 4 channel
- ⑤ Reverse channel
  - 0: None
  - 1: 1 channel
- ⑥ Control-pin (Default output)
  - L: Enable (Low)
  - H: Enable (High)
  - A: Disable (Low)
  - B: Disable (High)
  - C: None (Low)
  - D: None (High)
- ⑦ Option
  - 0: None
- ⑧ Package Type
  - 1: SOIC16-W

## Part Naming Example for Automotive Devices

### Photocouplers (Output: Transistor, IC, Photovoltaic)

Example of Photocoupler

TLX 9 304  
①      ②      ③

- ① Photocoupler (For Automotive Device)
- ② 9: For Automotive Device
- ③ Serial Number

### Photorelays

Example of Photorelay

TLX 9 175 J  
①      ②      ③      ④

- ① Photorelay (For Automotive Device)
- ② 9: For Automotive Device
- ③ Serial Number
- ④ Withstand Voltage Level
  - J: 600 V
  - T: 1500 V

Note: For those parts which do not follow the part naming convention shown above, see the appropriate datasheet.

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