

Recovery rectifiers

Hyperfast recovery, space-saving devices

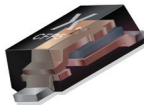
Nexperia's recovery rectifiers deliver high power density while minimizing reverse recovery time and loss. For efficient switching and power conversion applications in automotive, industrial and consumer markets.

Portfolio

- › 200–650 V **Hyperfast** switching parts with optimized recovery time (t_{rr}) of < 30 ns
- › High speed switching capability
- › Low voltage drop ($V_F @ I_{F, max} \sim 1$ V)
- › Low leakage current, also at high temperature
- › AEC-Q101 qualified parts ($175^\circ\text{C } T_{J(max)}$)

Robust & thermally efficient

- › High current pulse capability due to solid copper clip-bond
- › High power density / high efficiency planar technology
- › Low magnetic inductance optimizes switching behavior



Key applications

- › Polarity protection
- › DC/DC conversion
- › AC/DC conversion
- › Freewheeling of inductive load
- › Standard switching application
- › High-speed switching application
- › Onboard charging
- › Solenoid control
- › Piezo injection

Economical use of space



CFP2-HP (SOD323HP)

2.2 x 1.3 x 0.68 mm*
 $R_{th(j-sp)} = 6$ K/W



CFP3 (SOD123W)

2.6 x 1.7 x 1.0 mm*
 $R_{th(j-sp)} = 18$ K/W



CFP5 (SOD128)

3.8 x 2.5 x 1.0 mm*
 $R_{th(j-sp)} = 12$ K/W



CFP15B (SOT1289B)










5.8 x 4.3 x 0.95 mm*
 $R_{th(j-sp)} = 3$ K/W

- › Just 1 mm package height for thin PCB designs
- › More than 50% footprint savings - CFP3 compared to SMA

*Body size (l x w x h)

Recovery rectifiers

Types in **bold red** will be released in 2022,
types in **bold** represent new products

V_R max (V)	V_F max (V)	I_F (A)	I_R max (μ A)	V_R (V)	t_{rr} max (ns)	Package	Automotive-qualified					
							CFP2-HP (SOD323HP)	CFP3 (SOD123W)	CFP5 (SOD128)	CFP15B (SOT1289B)		
												
							Size (mm)	2.2 x 1.3 x 0.68	2.6 x 1.7 x 1.0	3.8 x 2.5 x 1.0	5.8 x 4.3 x 0.95	
P_{tot} (mW) @ 1cm ²	1200	1150	1200	2150								
200	1.05	1	1	200	25		PNE20010EXD (-Q)					
	0.93	1	0.2	200	25			PNE20010ER				
	0.98	2	0.2	200	25			PNE20020ER				
	0.95	2	1	200	25				PNE20020EP			
	0.98	3	1	200	30				PNE20030EP			
	0.93	4	1	200	30						PNE20040EPE (-Q)	
	0.94	6	1	200	30							PNE20060EPE (-Q)
	0.96	8	1	200	30							PNE20080EPE (-Q)
	0.97	10	1	200	30							PNE200100EPE (-Q)
	0.98	2x2	1	200	25							PNE20040CPE (-Q)
	0.94	2x3	1	200	30							PNE20060CPE (-Q)
	0.95	2x4	1	200	30							PNE20080CPE (-Q)
0.95	2x5	1	200	30						PNE200100CPE (-Q)		
400	1.1	1	1	400	1800			PNS40010ER				
650	1.25	1	1	650	50			PNU65010ER (-Q)				
	1.25	1	1	650	50				PNU65010EP (-Q)			

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