

Recovery Rectifier

Ultra- and hyperfast recovery, space-saving devices

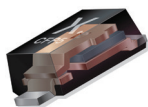
Nexperia's recovery rectifiers deliver high power density while minimizing reverse recovery time and loss. For efficient switching and power conversion applications in automotive, industrial and consumer markets.

Portfolio

- › 200 V – 650 V Ultra- and Hyperfast switching
- › Optimized recovery time (t_{rr}) of up to < 30 ns
- › Low voltage drop
- › Low leakage current, also at high temperature
- › AEC-Q101 qualified parts ($175\text{ }^{\circ}\text{C T}_{J(\text{max})}$)
- › D2PAK Real-2-Pin package to meet creepage and clearance requirements

Robust & thermally efficient

- › High current pulse capability due to solid copper clip-bond (CFP packages)
- › 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*
 $R_{th(j-sp)} = 6\text{ K/W}$



CFP3 (SOD123W)

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



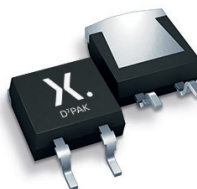
CFP5 (SOD128)

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



CFP15B (SOT1289B)

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



D2PAK (SOT8018)

8.8 x 10.35 x 4.46 mm*
 $R_{th(j-o)} = 1.5\text{ K/W}$

*Body size (l x w x h)

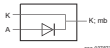
Recovery rectifiers

Types in **bold** represent new products

							Automotive-qualified			
V_R max (V)	V_F max (V)	($@$) I_F (A)	I_R max (μA)	($@$) V_R (V)	trr max (ns)	Package	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)			
	1.09	2					PNE20020EXD (-Q)			
	0.93	1					0.2	200	25	
	0.98	2	0.2	200	25			PNE20020ER		
	0.95	2	1	200	25				PNE20020EP	
	0.98	3	1	200	30				PNE20030EP	
	0.9	4	1	200	30				PNE20040EP (-Q)	
	1	5	1	200	30				PNE20050EP (-Q)	
	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	1500			PNS40010AER (-Q)	
650	1.25	1	1	650	50			PNU65010ER (-Q)		
	1.25	1	1	650	50				PNU65010EP (-Q) PNU65020EP (-Q) PNU65030EP (-Q)	

Recovery rectifiers

Types in **bold** represent new products

V_R max (V)	V_F max (V)	I_F (av) max [A]	I_R max (μA)	(@) V_R (V)	t_{rr} max (ns)	Package	D2PAK (R2P) (SOT8018)
						Size (mm)	
						P_{tot} (mW) @ 6 cm ² cathode pad	8.8 x 10.35 x 4.46
							4200
650	1.55	10	5	650	60		PNU650100EJ (-Q)
	2.4	10	5		30		PNE650100EJ (-Q)
	1.55	15	5		60		PNU650150EJ (-Q)
	2.4	15	5		30		PNE650150EJ (-Q)
	1.55	20	5		60		PNU650200EJ (-Q)
	2.4	20	5		30		PNE650200EJ (-Q)
	1.68	15	5		60		PNU650150AEJ (-Q)
	1.7	20	5		60		PNU650200AEJ (-Q)
	1.8	30	5		60		PNU650300AEJ (-Q)

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Date of release:
May 2024

