

FAST RECOVERY DIODES

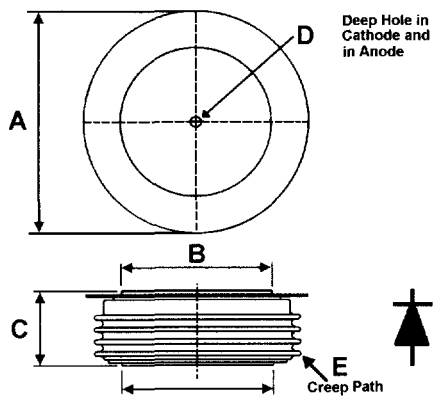
A range of fast recovery diodes tailored to meet specific industry needs. Perfectly suited to applications requiring soft recovery characteristics.

Key Features:

- Pressure contact technology
- Cold weld ceramic capsule and stud types
- Soft Recovery
- Low Loss
- High Reliability
- Stud type – Normal and Reverse Polarity

Key Applications:

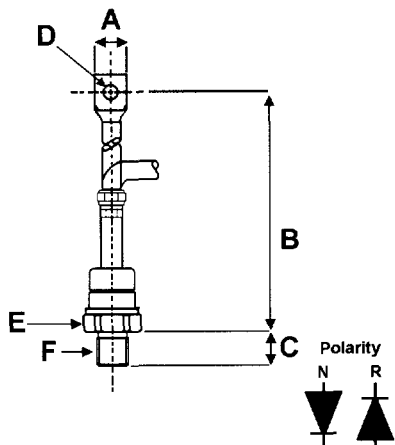
- Inverter Systems
- Uninterruptable Power Supplies
- Freewheeling Diodes
- AC Drive Systems
- Snubber diodes



Fast Recovery Diodes - Capsule Types

Dimensions:

Size	Wt (g)	A Max \varnothing mm	B Max \varnothing mm	C Range mm	D \varnothing / Hole Depth	E Creep Path
1	70	42	19 \pm 0.1	14.4 - 13.1	3.6 / 3.5x1.8	12 min
2	90	42	25.1 \pm 0.1	15.1 - 14.15	3.6 / 3.5x1.8	12 min
3	141	42	25.1 \pm 0.1	26.6 - 25.7	3.6 / 3.5x1.8	25.4 min
4	340	58.5	34 \pm 0.1	27.0 - 25.4	3.6 / 3.5x1.8	25 min
5	510	74	47 \pm 0.1	27.7 - 25.9	3.6 / 3.5x2.3	25.4 min
6	1000	101.6	63 \pm 0.1	33.1 - 32.9	3.6 / 3.5x3	46 min
7	1700	110.5	73.1 \pm 0.1	37.65 - 36	3.6 / 3.5x3	41.5 min



Fast Recovery Diodes - Stud types

Dimensions:

Size	Wt (g)	A Max mm	B Max mm	C Range mm	D Boss	E Nut A/F	F Thread
1	17	7.5	20	11.5 max	4	17.5 / 17.2	1/4"-28UNF-2A
2	85	n/a	52.1	20.7 max	5.4	26.9 / 26.5	M12x1.75
3	250	n/a	55.5 max	21 max	10.5	31.6 / 31.4	1/2"-20UNF-2A
4	85	16.5	117 / 110	16.3 max	7.1	26.9 / 26.5	3/8"-24UNF-2A
5	250	21.4	200 \pm 10	21 max	10.5	31.6 / 31.4	3/4"-16UNF-2A
6	250	21.4	200 \pm 10	21 max	10.5	31.6 / 31.4	3/4"-16UNF-2A

WESTCODE

Type / Part Number	V _{SM} Range (Note 3) (V)	I _{FSM} @ T _{HS} 55°C (A)	Typical Reverse Recovered Charge and Typical Reverse Recovery @ T _J Max (50% Chord)				I _{FSM(1)} 10ms V _r <10V (Note 2) (A)	I _{FSM(2)} 10ms (Note 2) (A ² s)	I _{FSM} @ T _J Max. (mA)	V _s @ T _J Max. (Note 1) (V) (mΩ)		T _J Max. (°C)	R _{th} J-hs d.c. 180° sine (K/W)	Mounting Force (kgf)	Size Ref.
			Q _{rr} (μC)	t _{rr} (μs)	I _{rr} (A)	di/dt (A/μs)				V _s	r				
SMxCXC 100	1200-1800	337	68	1.0	1000	100	2700	30 x 10 ³	20	1.46	0.80	125	0.090	330-550	1
SMxCXC 115	1600-2800	233	180	3.0	1000	100	2050	20.9 x 10 ³	50	1.49	3.22	125	0.090	330-550	1
SMxCXC 134	1600-2500	350	173	2.80	1000	150	4670	109 x 10 ³	20	1.21	1.20	125	0.090	330-550	1
SMxCXC 144	1600-2800	370	255	2.80	550	150	4950	122 x 10 ³	20	1.28	0.92	125	0.090	330-550	1
SMxCXC 170	200-1400	440	56	2.30	550	40	4950	122 x 10 ³	20	1.02	0.70	125	0.090	330-550	1
SMxCXC 174	1200-2000	435	120	2.80	550	40	4950	122 x 10 ³	20	1.00	0.74	125	0.090	330-550	1
SMxCXC 176	1200-2000	434	120	2.80	550	40	4950	122 x 10 ³	20	1.00	0.74	125	0.085	365-1000	2
SMxCXC 190	200-1600	760	41	1.50	550	40	10450	546 x 10 ³	50	1.13	0.38	125	0.050	530-1000	2
SMxHXC 084	3000-4500	220	266	2.50	1000	150	2200	24 x 10 ³	50	1.90	4.16	150	0.100	350-550	3
SMxHXC 103	2500-3500	310	188	2.30	1000	100	5050	128 x 10 ³	50	1.49	2.06	150	0.100	350-550	3
SMxHXC 164	3000-4500	364	480	2.60	1000	150	5400	146 x 10 ³	50	1.05	1.65	150	0.100	350-550	3
SMxHXC 166	2000-3000	240	75	1.5	1000	100	3424	59 x 10 ³	50	2.01	3.33	150	0.100	350-550	3
SMxCXC 220	200-1600	860	105	2.30	800	50	11000	605 x 10 ³	50	1.17	0.32	125	0.044	1000-2000	4
SMxCXC 224	1400-2100	875	225	1.70	800	50	11000	605 x 10 ³	50	1.09	0.34	125	0.044	1000-2000	4
SMxCXC 274	4600-6000	710	1000	3.30	1000	200	9240	0.427 x 10 ⁶	100	1.45	0.875	125	0.033	1000-2000	4
SMxCXC 314	200-1200	1090	120	1.60	1000	200	14900	1.10 x 10 ⁶	100	1.15	0.304	125	0.033	1000-2000	4
SMxCXC 344	3000-4500	588	315	3.50	1000	60	4350	94.6 x 10 ³	100	2.32	1.77	150	0.033	1000-2000	4
SMxCXC 364	3000-4500	660	263	3.00	1000	50	8470	359 x 10 ³	100	1.71	0.925	125	0.033	1000-2000	4
SMxCXC 374	3000-4500	736	953	3.80	1000	200	10000	500 x 10 ³	100	1.50	0.76	125	0.033	1000-2000	4
SMxCXC 474	2800-3600	864	548	2.80	1000	200	11000	605 x 10 ³	100	1.39	0.50	125	0.033	1000-2000	4
SMxCXC 524	1600-2500	956	338	2.00	1000	200	12870	830 x 10 ³	50	1.44	0.33	125	0.033	1000-2000	4
SMxCXC 724	200-2000	940	248	1.90	1000	200	15400	1.19 x 10 ⁶	100	1.24	0.33	125	0.033	1000-2000	4
SMxCXC 804	1800-2500	761	140	2.4	800	50	10000	500 x 10 ³	50	1.70	0.58	125	0.033	1000-2000	4
SMxCXC 334	1600-2500	1500	420	2.30	1000	200	18700	1.75 x 10 ⁶	60	1.24	0.44	150	0.022	1900-2600	5
SMxCXC 504	200-600	1830	225	1.50	1000	200	28600	4.09 x 10 ⁶	50	0.93	0.18	125	0.022	1900-2600	5
SMxCXC 574	4600-6000	1105	1500	4.50	1000	200	14300	1.02 x 10 ⁶	60	1.36	0.56	125	0.022	1900-2600	5
SMxCXC 604	3000-4500	1010	724	3.00	1000	200	10600	0.56 x 10 ⁶	150	1.70	1.03	150	0.022	1900-2600	5
SMxCXC 614	3000-4500	1160	600	5.30	1000	60	11900	0.71 x 10 ⁶	150	1.50	0.77	150	0.022	1900-2600	5
SMxCXC 624	3000-4500	1106	863	3.80	1000	200	14300	1.02 x 10 ⁶	50	1.37	0.553	125	0.022	1900-2600	5
SMxCXC 824	2600-3600	1243	698	2.90	1000	200	18000	1.62 x 10 ⁶	60	1.27	0.420	125	0.022	1900-2600	5
SMxCXC 915	1600-2600	1610	551	3.00	1000	200	19300	1.86 x 10 ⁶	150	1.31	0.345	150	0.022	1900-2600	5
SMxCXC 924	1600-2500	1496	280	3.70	1000	60	21560	2.32 x 10 ⁶	85	1.15	0.265	125	0.022	1900-2600	5
SMxCXC 394	3600-4500	1565	1550	4.5	1000	200	21700	2.35 x 10 ⁶	100	1.09	0.36	125	0.018	2700-3400	6
SMxCXC 864	3000-4500	1490	1125	4.10	1000	200	27300	3.73 x 10 ⁶	150	1.38	0.71	150	0.016	2700-3400	6
SMxCXC 968	1800-2500	2840	1650	4.40	1000	200	35000	6.10 x 10 ⁶	100	0.90	0.17	150	0.016	2700-3400	6
SMxCXC 384	3000-4000	2325*	1500*	5.5	1000	150	25300*	3.19 x 10 ⁶	150	1.67*	0.186*	125	0.011	2700-4700	7
SMxCXC 954	3600-4200	2640	1500*	5.5	1000	200	30270	4.58 x 10 ⁶	150	1.38	0.29	150	0.011	2700-4700	7
SMxCXC 964	2500-3500	2700	1500	12.00	1000	150	30600	4.70 x 10 ⁶	150	1.00	0.33	150	0.011	2700-4700	7
SMxCXC 974	2000-3000	3775	1125	4.10	1000	60	48400	11.7 x 10 ⁶	150	1.19	0.118	150	0.011	2700-4700	7

Type / Part Number	V _{SM} Range (Note 3) (V)	Typical Reverse Recovered Charge and Typical Reverse Recovery @ T _J Max (50% Chord)				I _{FSM(1)} 10ms V _r ≥ 50% V _{SM} (Note 2) (A)	I _{FSM(2)} 10ms V _r ≤ 10V (Note 2) (A)	I _{FSM} 10ms (Note 2) (A ² s)	I _{FSM} @ T _J Max. (mA)	V _s @ T _J Max. (Note 1) (V) (mΩ)		T _J Max. (°C)	R _{th} J-c d.c. 180° sine (K/W)	R _{th} c-hs (K/W)	Mounting Torque (kgm)	Size Ref.
		Q _{rr} (μC)	t _{rr} (μs)	I _{rr} (A)	di/dt (A/μs)					V _s	r					
1N3999-03	50-400	-	0.20	1	25	240	285	400	15	1.28	4.9	150	1.3	0.10	0.41-0.48	1
1N3999-13	50-400	-	0.20	1	25	265	340	580	15	1.15	3.05	150	0.8	0.10	0.41-0.48	1
SMxPCN 046	200-400	10	0.51	100	150	650	750	2800	25	1.15	3.05	150	0.8	0.10	0.41-0.48	1
SMxPCN 070-1	200-600	0.18*	0.15*	220	25	700	830	3450	20	1.26	2.23	175	0.44	0.10	0.41-0.48	1
SMxPCN 070-2	200-1000	0.98*	0.38*	220	25	700	830	3450	20	1.26	2.23	175	0.44	0.10	0.41-0.48	1
SMxPCN 074	200-1000	32	0.98	100	150	1000	1150	5600	25	1.06	3.00	150	0.5	0.10	0.41-0.48	1
SMxPCN 076	200-400	11.3	0.50	100	150	1200	1380	9500	25	0.77	3.15	150	0.5	0.10	0.41-0.48	1
SMxPCN 085-1	200-600	0.18*	0.15*	267	25	1100	1300	8450	20	1.24	1.91	175	0.44	0.10	0.41-0.48	1
SMxPCN 085-2	200-1000	0.98*	0.38*	267	25	1100	1300	8450	20	1.24	1.91	175	0.44	0.10	0.41-0.48	1
SMxPCN 094	1600-2500	240	2.60	1000	150	2240	2450	30.0 x 10 ³	20	1.29	1.54	175	0.3	0.08	1.15-1.44	2
SMxPHN 100	1200-1800	68	1.00	1000	100	2450	2700	38.5 x 10 ³	20	1.24	1.28	125	0.3	0.08	1.15-1.44	4
SMxPCPHN 134	1600-2500	173	2.80	1000	150	4250	4670	109 x 10 ³	20	1.21	1.20	175	0.13	0.04	1.15-1.44	3
SMxPCPHN 144	1600-2500	255	2.80	1000	150	4500	4950	122 x 10 ³	20	1.28	0.92	175	0.13	0.04	1.15-1.44	3
SMxPHN 170	200-1400	137	1.80	1000	200	4500	4950	122 x 10 ³	20	1.02	0.70	125	0.13	0.04	2.50-2.77	5
SMxPHN 174	1200-2000	293	2.30	1000	200	4500	4950	122 x 10 ³	20	1.00	0.74	125	0.13	0.04	2.50-2.77	6

* T_J 25°C

Notes:

- $I_{TSM} (8.3ms) = I_{TSM} (10ms) \times 1.066$
 $I_{T^2} (8.3ms) = I_{T^2} (10ms) \times 0.943$
 At initial temperature T_i 125°C.
- V_s Threshold voltage) for conduction loss and heatsink calculations.
 r Slope resistance) (T_J = 125°C)
- A blocking voltage derating factor of 0.13% per degree Celsius is applicable for T_J below 25°C.