

SM*CXC924- Fast Recovery Rectifier

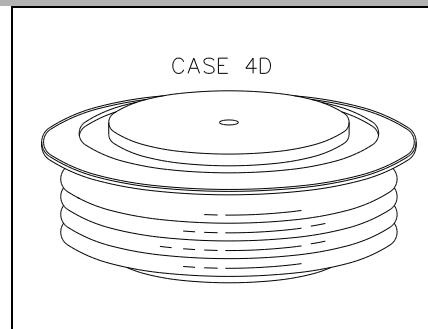
Rectifier

1500 - 2400 V_{RRM}; 1265 A avg

HIGH POWER FAST RECOVERY RECTIFIER

Features:

- . All Diffused Structure
- . Fast Switching Performance
- . Blocking capability up to 2400 volts
- . Soft Reverse Recovery
- . Rugged Ceramic Hermetic Package
- . Pressure Assembled Device



ELECTRICAL CHARACTERISTICS AND RATINGS

Reverse Blocking

Device Type	V _{RRM} (1)	V _{RSM} (1)
SM15CXC	1500	1600
SM16CXC	1600	1700
SM18CXC	1800	1900
SM20CXC	2000	2100
SM22CXC	2200	2300
SM24CXC	2400	2500

V_{RRM} = Repetitive peak reverse voltage

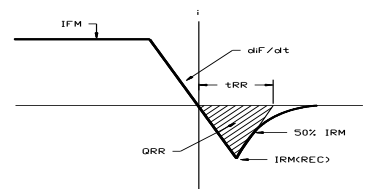
V_{RSM} = Non repetitive peak reverse voltage (2)

Repetitive peak reverse leakage	I _{RRM}	10 mA 75 mA (3)
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Notes:

All ratings are specified for T_j=25 °C unless otherwise stated.

- (1) All voltage ratings are specified for an applied 50Hz/60Hz sinusoidal waveform over the temperature range -40 to +150 °C.
- (2) 10 msec. max. pulse width
- (3) Maximum value for T_j = 150 °C.
- (4) See parameter definition below :



REVERSE RECOVERY CHARACTERISTIC

Conducting - on state

Parameter	Symbol	Min	Max.	Typ	Units	Conditions
Average value of on-state current	I _{F(AV)}		1265		A	Sinewave, 180° conduction, T _c = 55°C
RMS value of on-state current	I _{FRMS}		1450		A	Nominal value
Peak one cycle surge (non repetitive) current	I _{FSM}		18000 16000		A A	8.3 msec (60Hz), sinusoidal wave-shape, 180° conduction, T _j = 150 °C 10.0 msec (50Hz), sinusoidal wave-shape, 180° conduction, T _j = 150 °C
I square t	I ² t		1.3x10 ⁶		A ² s	8.3 msec and 10 msec
Peak on-state voltage	V _{FM}		2.65		V	I _{FM} = 2900 A; Duty cycle ≤ 0.01%; T _{jmax}
Reverse Recovery Current (4)	I _{RM(REC)}		45		A	I _{FM} = 1000 A; dI _F /dt = 10 A/μs; T _{jmax}
Reverse Recovery Charge (4)	Q _{rr}		200		μC	I _{FM} = 1000 A; dI _F /dt = 10 A/μs; T _{jmax}
Reverse Recovery Time (4)	t _{RR}		*		μs	

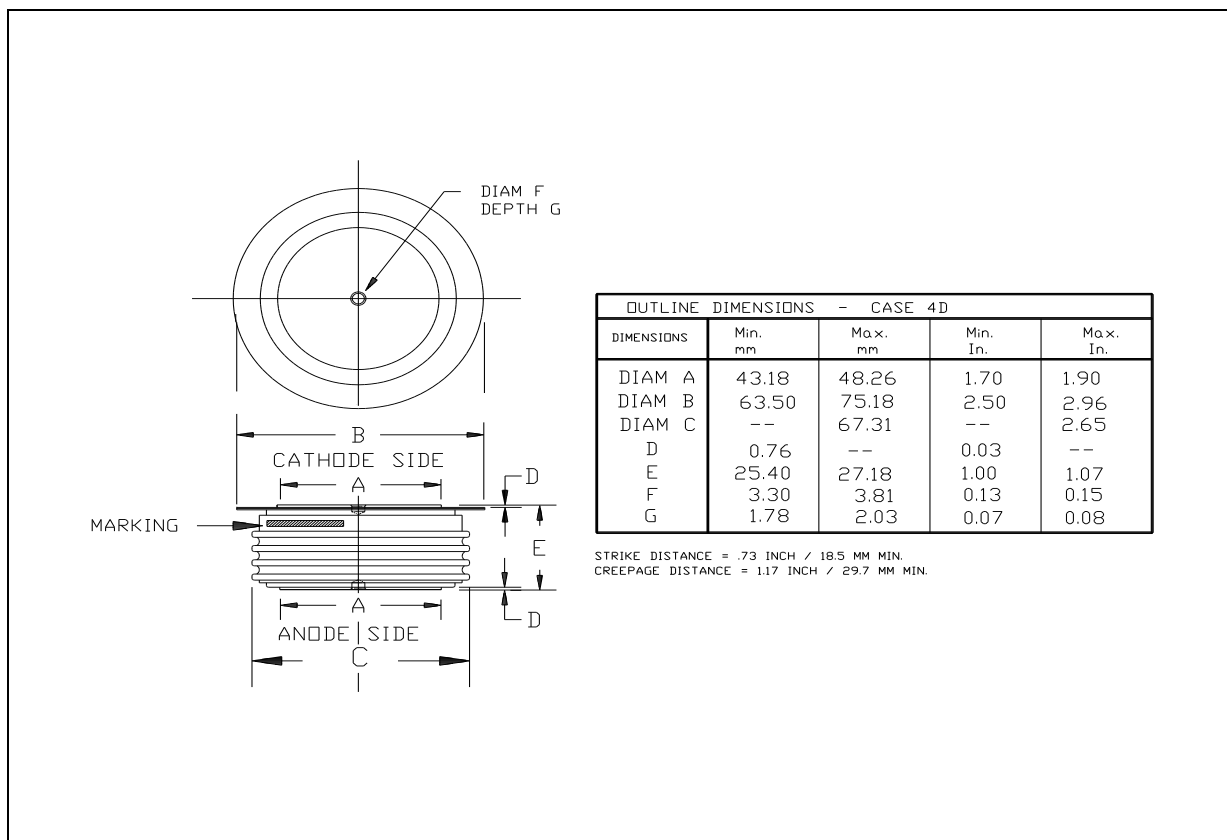
* For guaranteed maximum values, contact factory

THERMAL AND MECHANICAL CHARACTERISTICS SM*CXC924 - Fast Recovery Rectifier

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Operating temperature	T _j	-40	+150		°C	
Storage temperature	T _{stg}	-40	+150		°C	
Thermal resistance - junction to case	R _{θ(j-c)}		0.023 0.046		°C/W	Double sided cooled Single sided cooled
Thermal resistance - case to sink	R _{θ(c-s)}		.010 .020		°C/W	Double sided cooled * Single sided cooled *
Mounting force	P	5000 22.3	6000 26.7		lb. kN	
Weight	W			16 460	oz. g	

* Mounting surfaces smooth, flat and greased

CASE OUTLINE AND DIMENSIONS



Fast Recovery Rectifier