WESTCODE SEMICONDUCTORS

Series SWxxC/DXC500

Capsule Rectifier Diode

Consists of a diffused silicon element mounted in an hermetic ceramic cold welded capsule. Available in industry standard and thin housings.

Ratings	Unless otherwise stated Tj = 150°C	Maximum Limits							Units
	Voltage Codes	**46**	**48**	**50**	**52**	**54**	**56**	**58**	
V_{RRM}	Repetitive peak reverse voltage.	4600	4800	5000	5200	5400	5600	5800	V
V_{RSM}	Non-repetitive peak reverse voltage.	4700	4900	5100	5300	5500	5700	5900	V

$I_{F(AV)}$	Average forward current	Half sine wave	55°C heatsink temperature (double side cooled)	1295	A
			100°C heatsink temperature (single side cooled)	550	A
$I_{F(RMS)}$	R.M.S forward current	25°C heatsink temperature, double side cooled		2400	A
I_F	Continuous forward current	25°C heatsink temperature, double side cooled		2160	A
$I_{FSM(1)}$	Peak one-cycle surge	10ms duration, 60% V_{RRM} re-applied		10.0	KA
$I_{FSM(2)}$	Peak one-cycle surge	10ms duration, $V_R \leq 10$ volts		11.0	KA
$I^2t_{(2)}$	Maximum permissible surge energy	10ms duration, $V_R \leq 10$ volts		0.605×10^6	A^2s
		3ms duration, $V_R \leq 10$ volts		0.446×10^6	A^2s
Tj	Operating temperature range			−55 to + 150	°C
T_{stg}	Storage temperature range			−55 to + 190	°C

Characteristics	Unless otherwise indicated Tj = 150°C			
V_{FM}	Peak forward voltage	I_F = 2340 A	2.75	V
V_O	Forward conduction threshold voltage		1.15	V
r	Forward conduction slope resistance		0.684	mΩ
I_{RRM}	Repetitive peak reverse current	At V_{RRM}	70.0	mA
$R_{th(j-hs)}$	Thermal resistance, junction to heat sink.	Double side cooled	0.022	°C/W
		Single side cooled	0.044	°C/W

Ordering Information (Please quote device code as explained below - 10 digits)

S W	• •	• X C	5 0 0
Fixed type code	Voltage Code (see ratings)	CXC - Thick Housing DXC - Thin Housing	Fixed Type Code

Typical code : SW50CXC500, 5000 V_{RRM}

Details of a full range of capsule mounting clamps are available - ask for brochure.

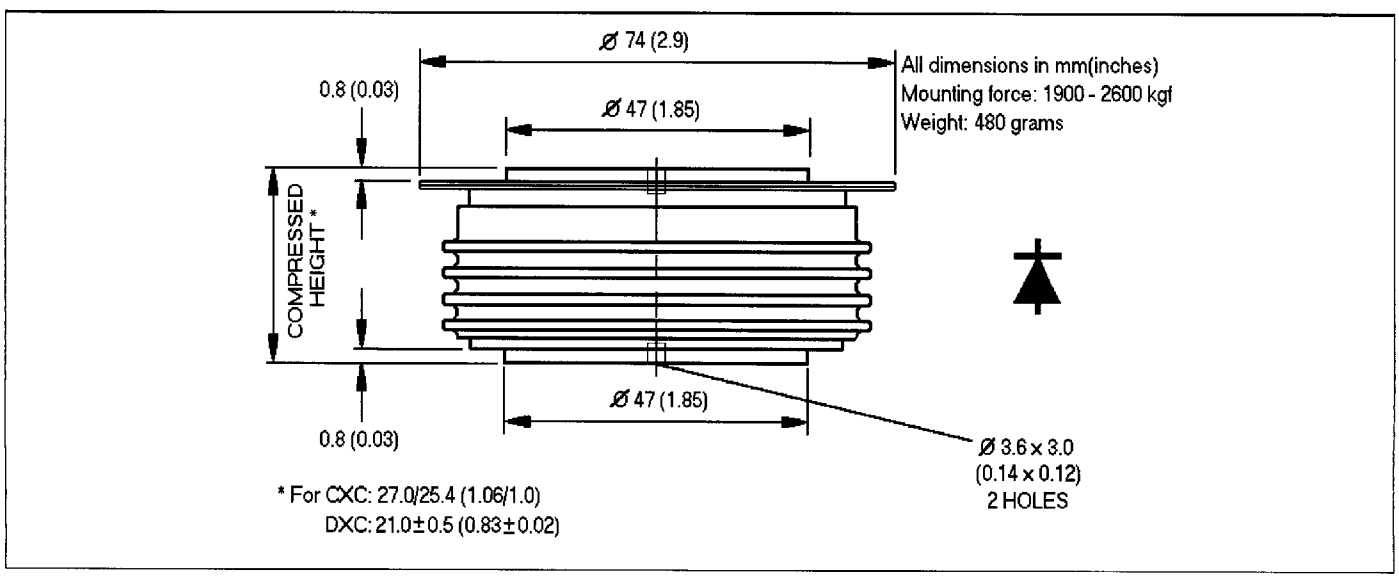


Figure 1. Dissipation/Sink Temperature v. Mean Forward Current.

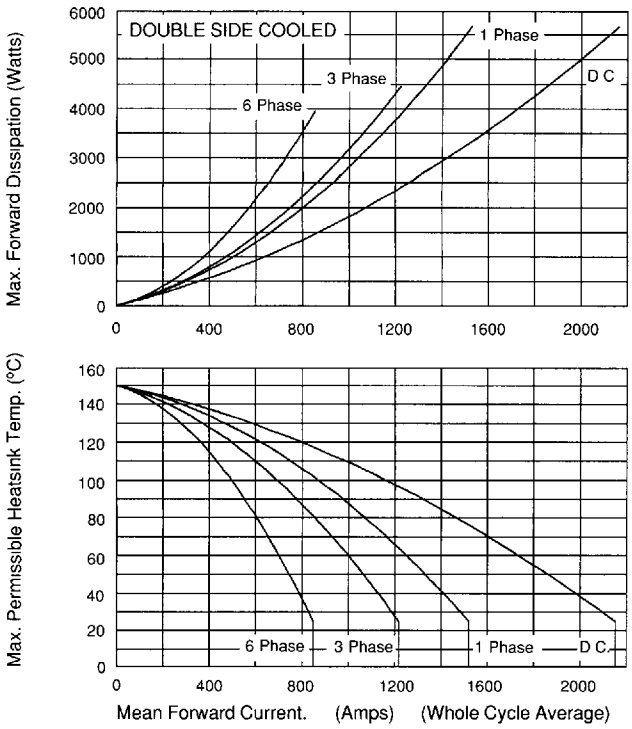


Figure 2. Dissipation/Sink Temperature v. Mean Forward Current.

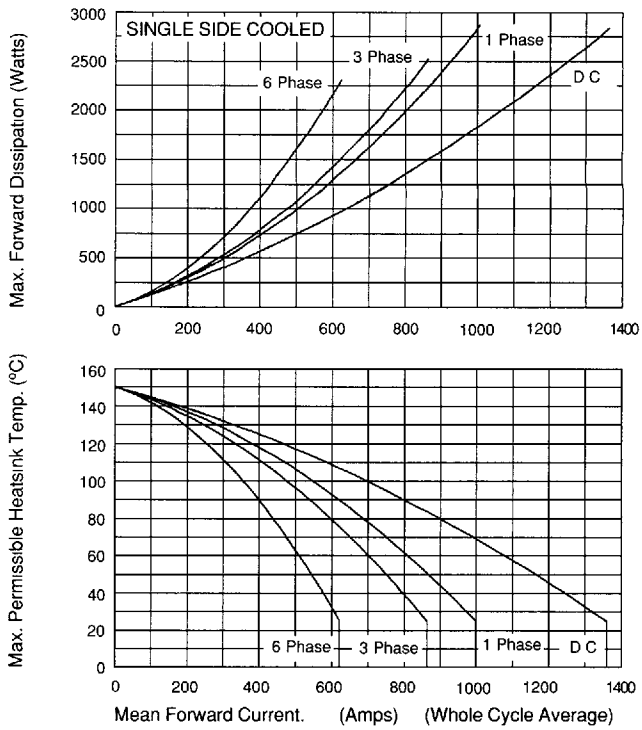
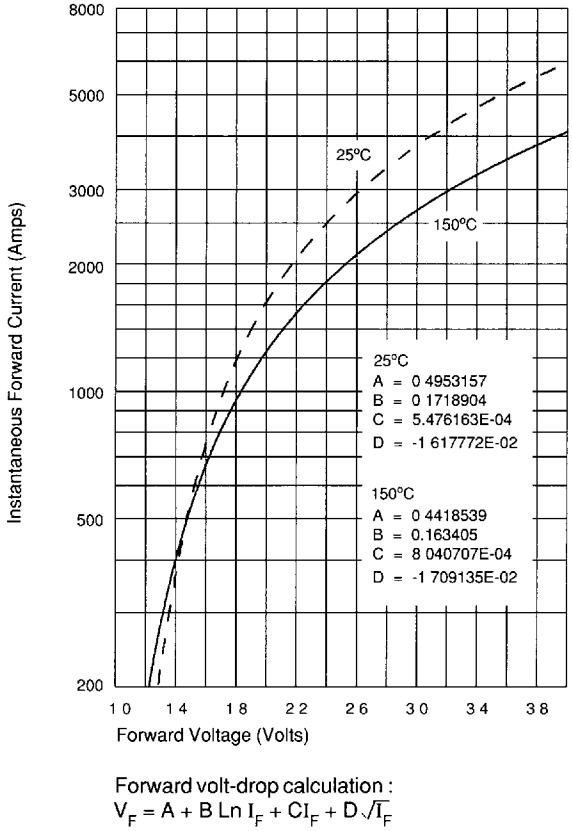


Figure 3. Limit Forward Characteristic at 150°C.



Forward volt-drop calculation :

$V_F = A + B \text{ Ln } I_F + CI_F + D\sqrt{I_F}$

Figure 4. Junction to Sink Transient Thermal Impedance.

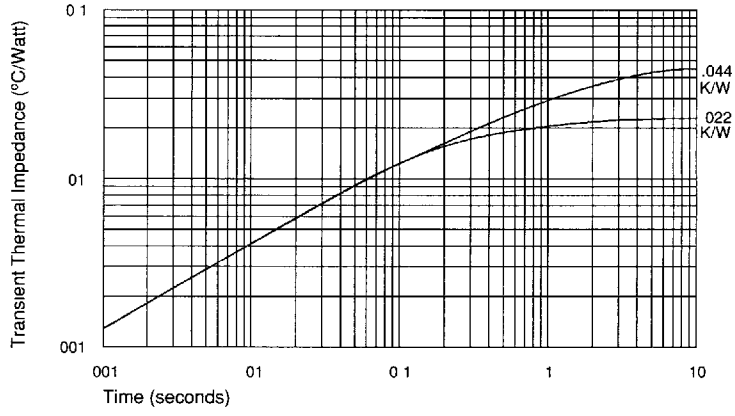
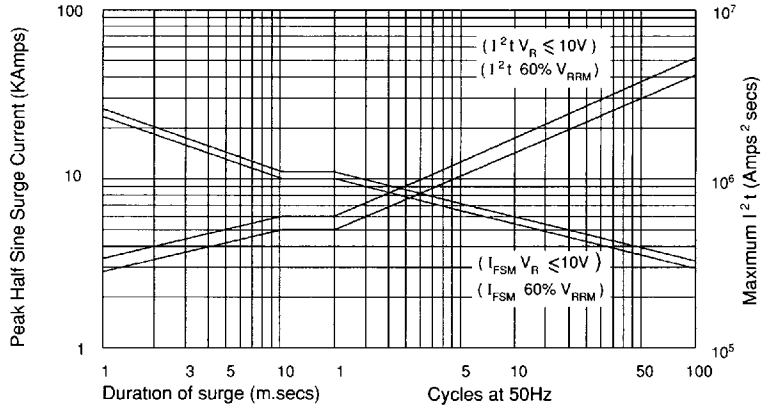


Figure 5. Non-Repetitive Surge Current at Initial Junction Temperature 150°C.



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