



WESTCODE SEMICONDUCTORS

 TECHNICAL
PUBLICATION

DC 300

ISSUE 1

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Ceramic Capsule Silicon Diodes Type CXC300

650 amperes average: up to 1500 volts V_{RRM}

RATINGS Maximum values at 180°C T_j unless stated otherwise

RATING	CONDITIONS	SYMBOL	
Average forward current	Half sine wave { 55°C heatsink temperature (double side cooled) 100°C heatsink temperature (single side cooled)	$I_{F(AV)}$	650A 300A
RMS current	25°C heatsink temp., double side cooled	$I_{F(RMS)}$	1170A
DC forward current	25°C heatsink temp., double side cooled	I_F	1000 A
Peak one-cycle surge (non repetitive) of forward current	8.3ms duration { 60% V_{RRM} re-applied $V_R \leq 10$ volts	$I_{FSM(1)}$ $I_{FSM(2)}$	5830A 6413A
Maximum permissible surge energy	8.3ms duration { 60% V_{RRM} re-applied $V_R \leq 10$ volts 3ms duration $V_R \leq 10$ volts	$I^2 t (1)$ $I^2 t (2)$	147440A ² s 177510A ² s 135000A ² s
Operating temperature range		T_{hs}	-30, + 180°C
Storage temperature		T_{stg}	-40, + 200°C

CHARACTERISTICS Maximum values at 180°C T_j unless stated otherwise

CHARACTERISTIC	CONDITIONS	SYMBOL	
Peak forward voltage drop	At 1500A, I_{FM}	V_{FM}	2.08V
Forward conduction threshold voltage		V_o	0.95V
Forward conduction slope resistance		r	0.75mΩ
Peak reverse current	At V_{RRM}	I_{RRM}	15mA
Thermal resistance junction to heatsink. for a device with a maximum forward volt-drop characteristic.	Capsule Single side cooled Double side cooled	$R_{th(j-hs)}$	0.18°C/W 0.09°C/W

VOLTAGE CODE →	02	04	06	08	10	12	14	15	
Repetitive voltage V_{RRM}	200	400	600	800	1000	1200	1400	1500	
Non-repetitive voltage V_{RSM}	300	500	700	900	1100	1300	1500	1600	

ORDERING INFORMATION (Please quote device code as explained below — 10 digits)

S	W	●	●	C	X	C	3	0	0
FIXED BASIC CODE	VOLTAGE CODE (see above)	FIXED OUTLINE CODE DO — 200 AA cold weld capsule				FIXED TYPE CODE			

 Typical code SW12CXC300 = 1200V_{RRM} type CXC300 diode

In the interest of product improvement, Westcode reserves the right to change specifications at any time without notice.

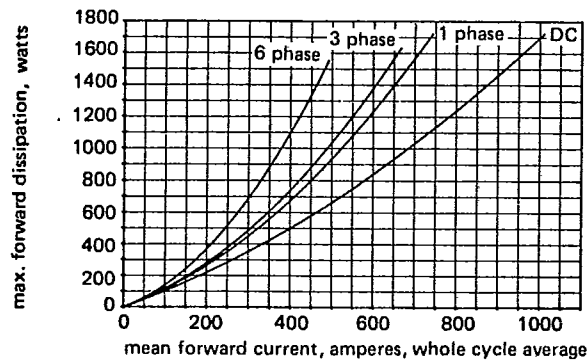
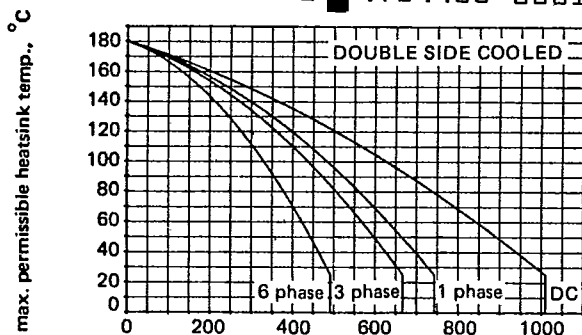


Figure 1 Dissipation / sink temperature v. mean forward current

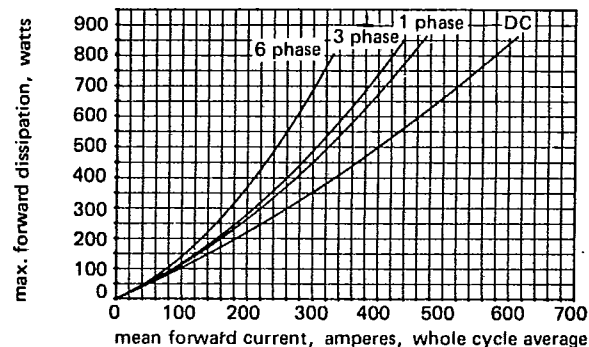
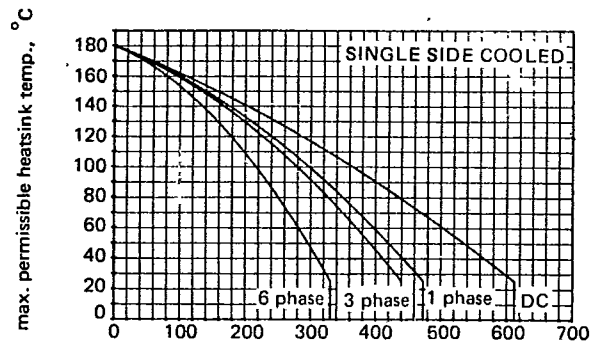


Figure 2 Dissipation / sink temperature v. mean forward current

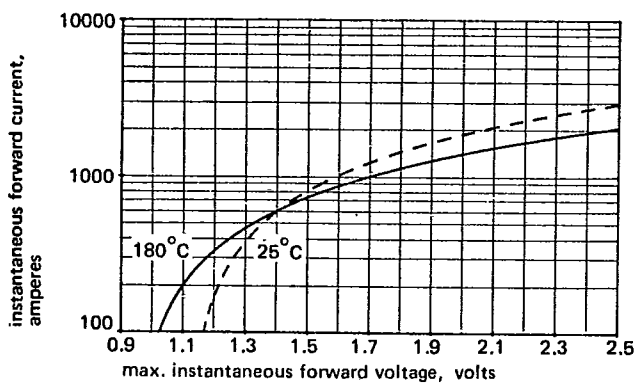


Figure 3 Forward voltage characteristic

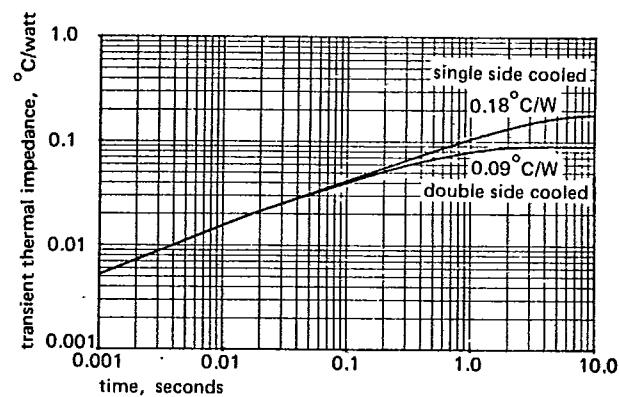


Figure 4 Transient thermal impedance, junction to heatsink

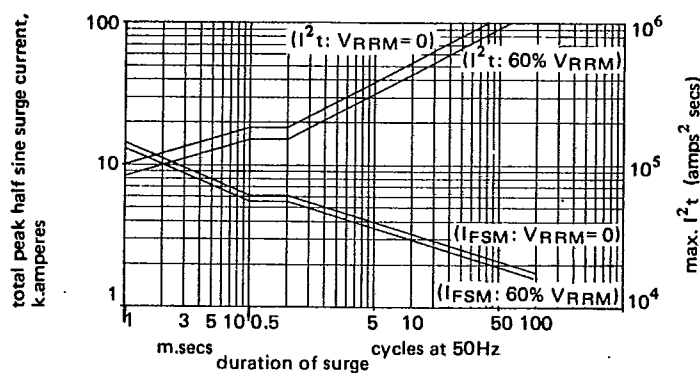
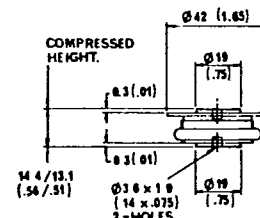


Figure 5 Max. non repetitive surge current at initial junction temperature 180°C



DO - 200 AA

Dimensions in mm (inches)

Mounting Force: 330 - 550Kg

Weight: 70 grams

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