

WESTCODE SEMICONDUCTORS

Series

SWxxCXC470

Capsule Rectifier Diode

Consists of a diffused silicon element mounted in an hermetic ceramic cold welded capsule.

Ratings	Unless otherwise stated $T_j = 190^\circ\text{C}$	Maximum Limits								Units
		02	04	06	08	10	12	14	15	
V_{RRM}	Repetitive peak reverse voltage.	200	400	600	800	1000	1200	1400	1500	V
V_{RSM}	Non-repetitive peak reverse voltage.	300	500	700	900	1100	1300	1500	1600	V

$I_{F(AV)}$	Average forward current	Half sine wave	55°C heatsink temperature (double side cooled)	925	A
			100°C heatsink temperature (single side cooled)	470	A
$I_{F(RMS)}$	R.M.S forward current	25°C heatsink temperature, double side cooled		1630	A
I_F	Continuous forward current	25°C heatsink temperature, double side cooled		1480	A
$I_{FSM(1)}$	Peak one-cycle surge	10ms duration, 60% V_{RRM} re-applied		9.0	KA
$I_{FSM(2)}$	Peak one-cycle surge	10ms duration, $V_R \leq 10$ volts		10.0	KA
$I^2 t_{(2)}$	Maximum permissible surge energy	10ms duration, $V_R \leq 10$ volts		0.5×10^6	$A^2 s$
		3ms duration, $V_R \leq 10$ volts		0.36×10^6	$A^2 s$
T_j	Operating temperature range			-55 to +190	°C
T_{stg}	Storage temperature range			-55 to +200	°C

Characteristics		Unless otherwise indicated $T_j = 190^\circ\text{C}$		
V_{FM}	Peak forward voltage	$I_F = 1930$ A	1.45	V
V_O	Forward conduction threshold voltage		0.51	V
r	Forward conduction slope resistance		0.49	$m\Omega$
I_{RRM}	Repetitive peak reverse current	At V_{RRM}	15.0	mA
$R_{th(j-hs)}$	Thermal resistance, junction to heat sink.	Double side cooled	0.09	°C/W
		Single side cooled	0.18	°C/W

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

S	W	• •	C	X	C	4	7	0
Fixed type code	Voltage Code (see ratings)		Fixed Outline Code			Fixed Type Code		

Typical code : SW12CXC470, 1200 V_{RRM}

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

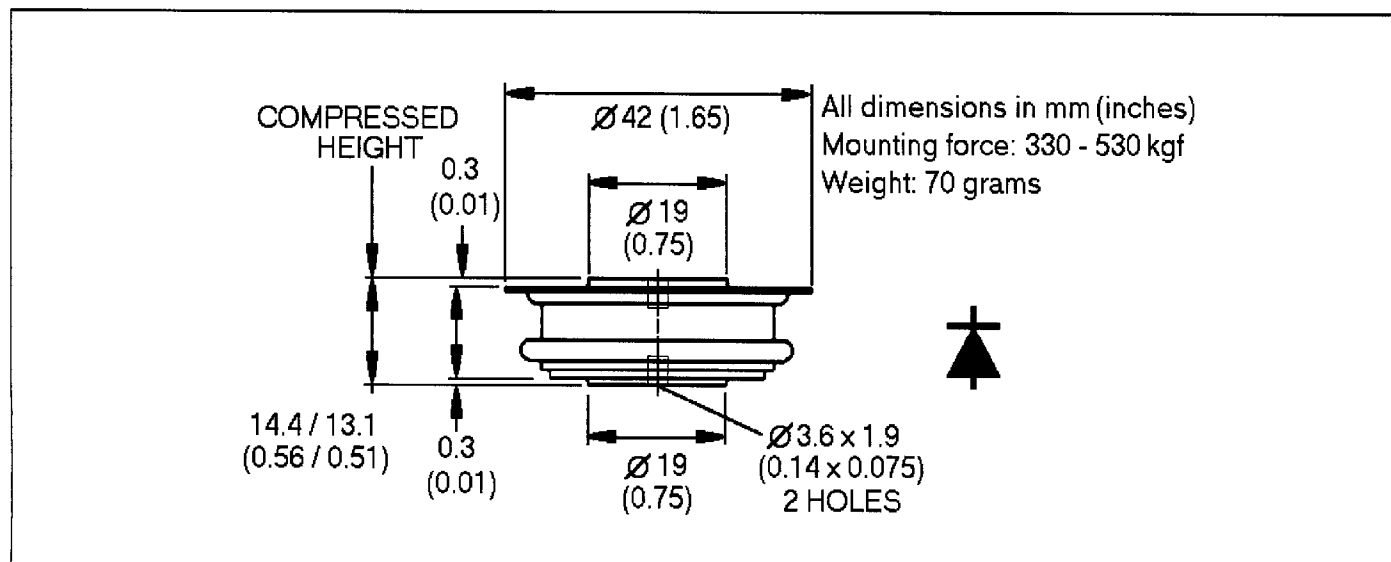


Figure 1. Dissipation/Sink Temperature v. Mean Forward Current.

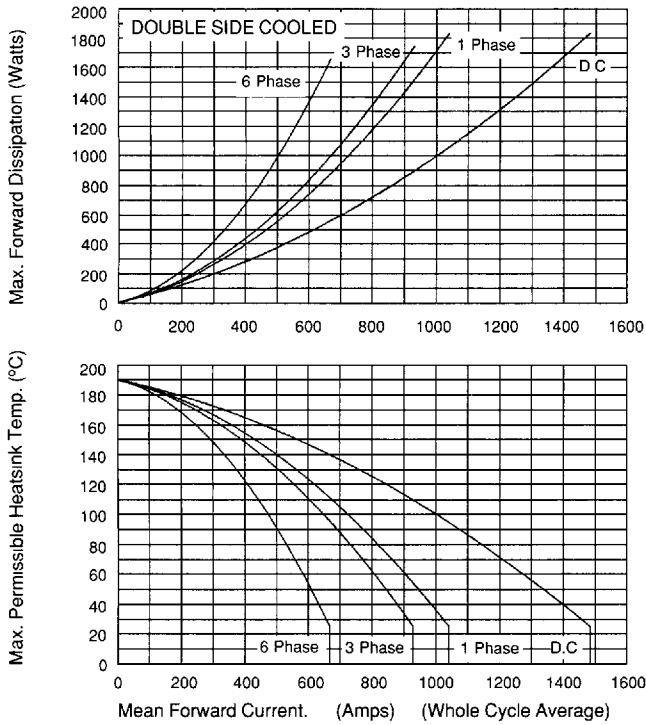


Figure 2. Dissipation/Sink Temperature v. Mean Forward Current.

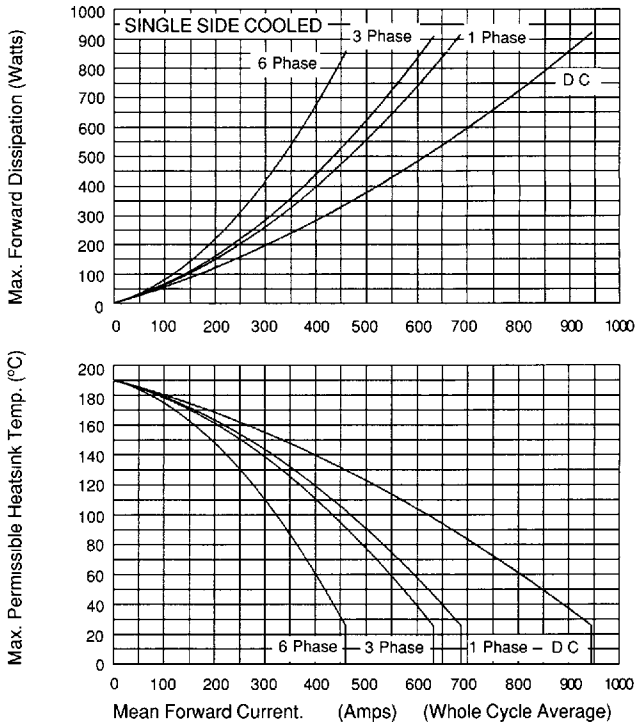
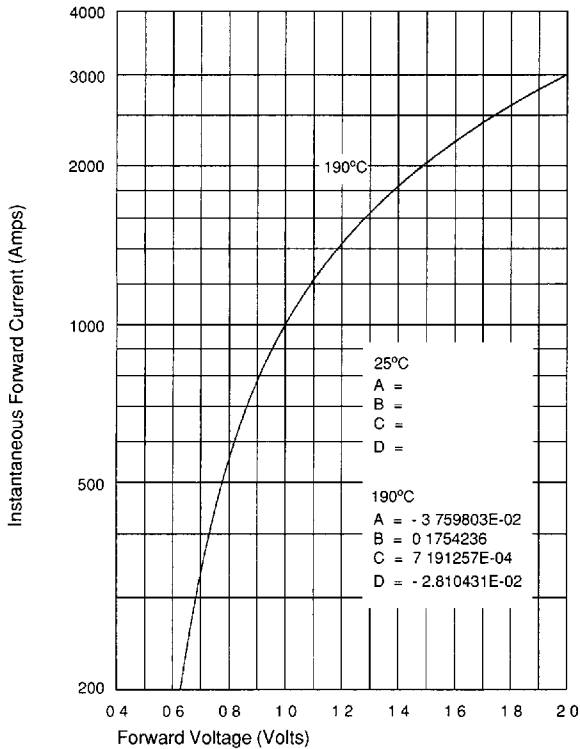


Figure 3. Limit Forward Characteristic at 190°C.



Forward volt-drop calculation:

$$V_F = A + B \ln I_F + C I_F + D \sqrt{I_F}$$

Figure 4. Junction to Sink Transient Thermal Impedance.

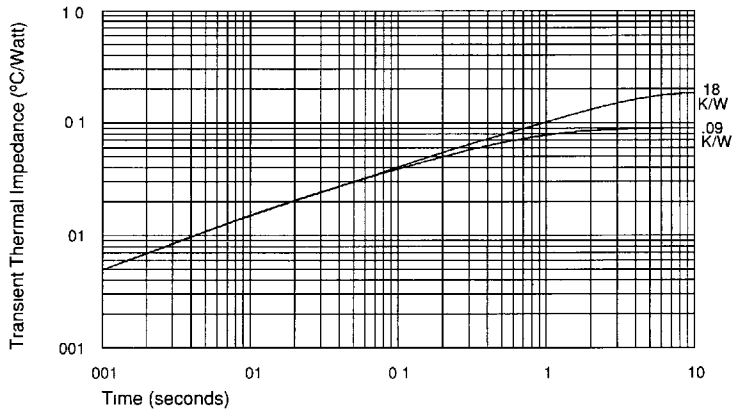
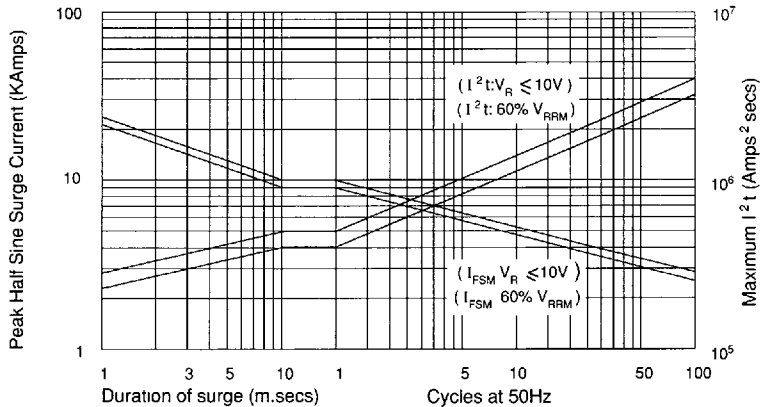


Figure 5. Non-Repetitive Surge Current at Initial Junction Temperature 190°C.



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



WESTCODE SEMICONDUCTORS LIMITED
 P.O. BOX 57, Chippenham, Wiltshire, England SN15 1JL
 Telephone (Sales) : (0249) 444524. Telex 44751.
 Telefax : (0249) 659448