WESTCODE SEMICONDUCTORS

TECHNICAL PUBLICATION
DP300
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Stud-Base Silicon Rectifier Diodes Type PHN/PHR300

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

RATINGS Maximum values at 180°C Tj unless stated otherwise

RATING	CONDITIONS	SYMBOL	
Average forward current	Half sine wave 100°C case temperature	$I_{F(AV)}$	380A
RMS current		$I_{F(RMS)}$	600A
DC forward current		I_F	600A
Peak one-cycle surge (non repetitive)	10ms duration { 60% V_{RRM} re-applied; $V_R \leq$ 10 volts	$I_{FSM(1)}$	5500A
		$I_{FSM(2)}$	6050A
Maximum permissible surge energy	10ms duration { 60% V_{RRM} re-applied; $V_R \leq$ 10 volts	I^2t (1)	152000A^{2}s
		I^2t (2)	183000A^{2}s
	3ms duration $V_R \leq$ 10 volts		135000A^{2}s
Case operating temperature		T_C	-30, +180°C
Storage temperature		T_{stg}	-40, +200°C

CHARACTERISTICS Maximum values at 180°C Tj unless stated otherwise

CHARACTERISTIC	CONDITIONS	SYMBOL	
Peak forward voltage drop	At 1180A, I_{FM}	V_{FM}	1.83V
Forward conduction threshold voltage		V_0	0.95V
Forward conduction slope resistance		r	0.75mΩ
Peak reverse current	At V_{RRM}	I_{RRM}	15mA
Thermal resistance junction to case for a diode with a maximum forward volt-drop characteristic	DC and 180° sine wave	$R_{th(j-c)}$	0.13°C/W
	120° rectangular wave		0.14°C/W
Thermal resistance case to heatsink		$R_{th(c-hs)}$	0.04°C/W

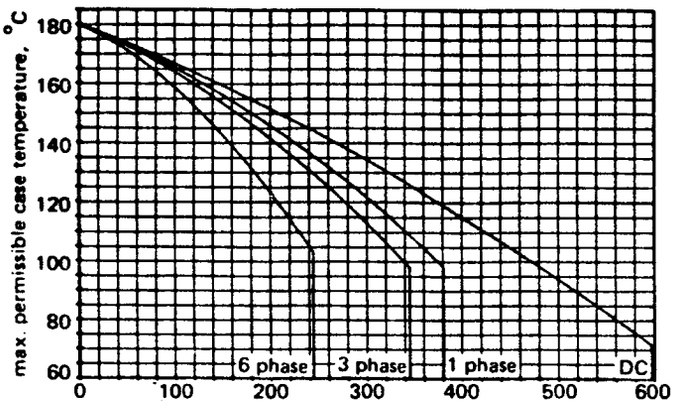
VOLTAGE CODE →	02	04	06	08	10	12	14	15	
Repetitive voltage V_{RRM}	200	400	600	800	1000	1200	1400	1500	
Non-repetitive voltage V_{RSM}	300	500	700	900	1100	1300	1500	1600	

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

S W	● ●	P H	●	3 0 0
FIXED BASIC CODE	VOLTAGE CODE (see above)	FIXED OUTLINE CODE	STUD POLARITY N = cathode R = anode	FIXED TYPE CODE

Typical code SW06PHR300 = 600V_{RRM} diode with stud anode

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



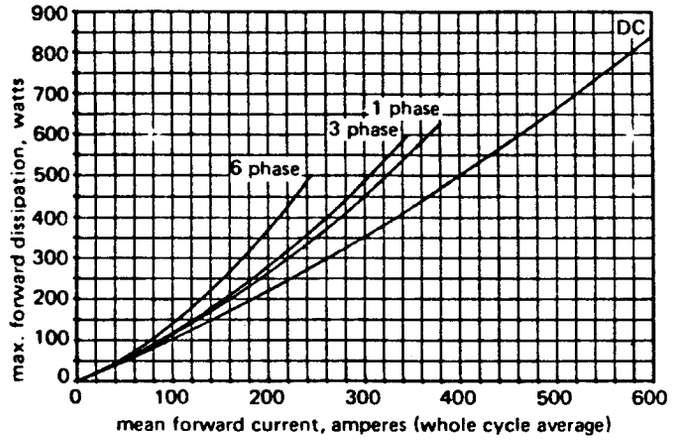


Figure 1 Dissipation and stud temperature v. mean forward current

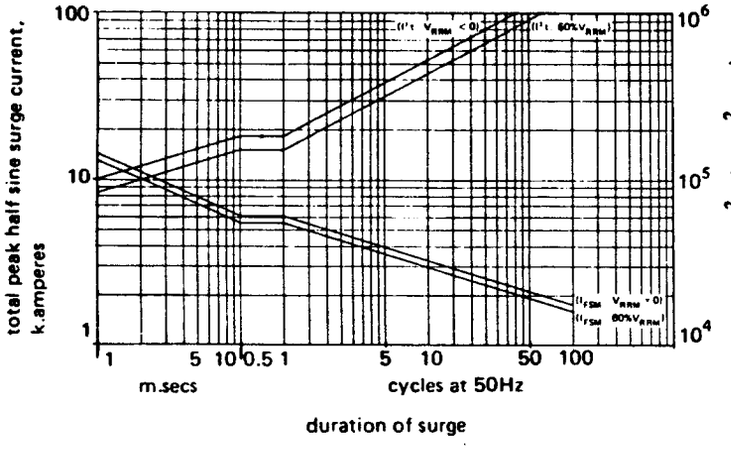


Figure 2 Max. non repetitive surge current at initial junction temperature 180°C

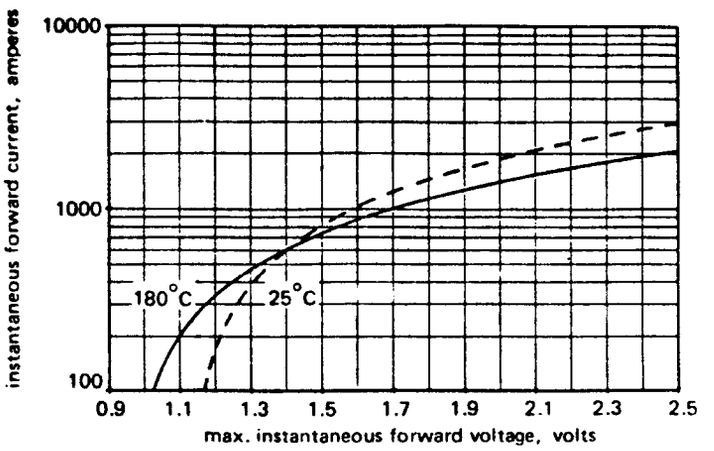


Figure 3 Forward voltage characteristic

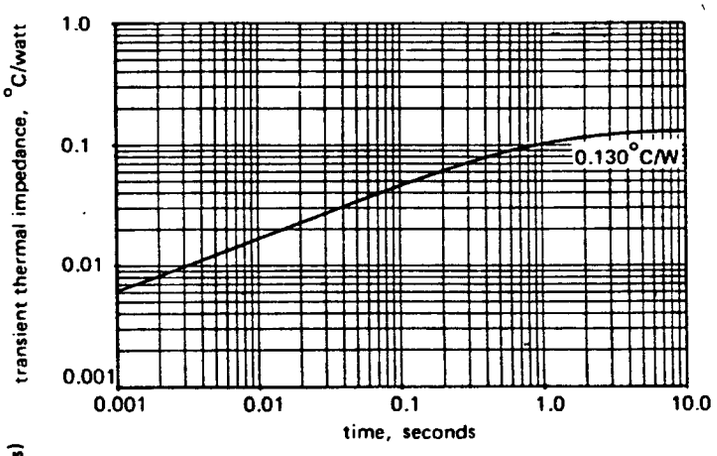
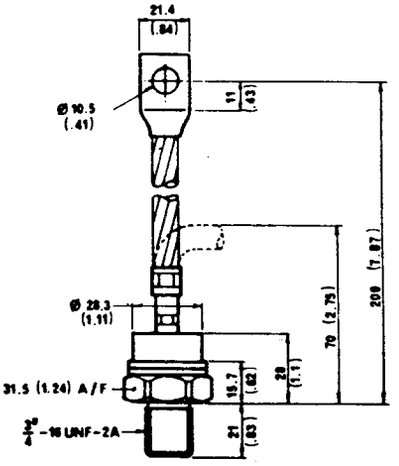


Figure 4 Transient thermal impedance, junction to case



Mounting Torque
2.50 – 2.77 KgM
threads not to be lubricated

Weight: 250 grams

dimensions in mm (inches)

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