WESTCODE SEMICONDUCTORS

TECHNICAL PUBLICATION
D P30
ISSUE 1
March, 1980

Stud-Base Silicon Rectifier Diodes Type PCN/PCR030

30 amperes average: up to 1600 volts V_{RRM}

RATINGS Maximum values at 175°C Tj unless stated otherwise

RATING	CONDITIONS	SYMBOL	
Average forward current	Half sine wave 125°C case temperature	$I_{F(AV)}$	30A
RMS current		$I_{F(RMS)}$	47A
DC forward current		I_F	47A
Peak one-cycle surge (non repetitive)	8.3ms duration { 60% V_{RRM} re-applied; $V_R \leqslant$ 10 volts	$I_{FSM(1)}$	371A
		$I_{FSM(2)}$	424A
Maximum permissible surge energy	8.3ms duration { 60% V_{RRM} re-applied; $V_R \leqslant$ 10 volts	I^2t (1)	$594A^2s$
	3ms duration $V_R \leqslant$ 10 volts	I^2t (2)	$776A^2s$
			$600A^2s$
Case operating temperature		T_C	-55, +175°C
Storage temperature		T_{stg}	-55, +175°C

CHARACTERISTICS Maximum values at 175°C Tj unless stated otherwise

CHARACTERISTIC	CONDITIONS	SYMBOL	
Peak forward voltage drop	At 130A, I_{FM}	V_{FM}	1.64V
Forward conduction threshold voltage		V_0	0.9V
Forward conduction slope resistance		r	5.7mΩ
Peak reverse current	At V_{RRM}	I_{RRM}	3mA
Thermal resistance junction to case for a diode with a maximum forward volt-drop characteristic	DC and 180° sine wave	$R_{th(j-c)}$	1.25°C/W
	120° rectangular wave		1.86°C/W
Thermal resistance case to heatsink		$R_{th(c-hs)}$	0.25°C/W

VOLTAGE CODE →	02	04	06	08	10	12	14	15	16
Repetitive voltage V_{RRM}	200	400	600	800	1000	1200	1400	1500	1600
Non-repetitive voltage V_{RSM}	300	500	700	900	1100	1300	1500	1600	1700

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

S W	● ●	P C	●	0 3 0
FIXED BASIC CODE	VOLTAGE CODE (see above)	FIXED OUTLINE CODE DO4	STUD POLARITY N = cathode R = anode	FIXED TYPE CODE

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Typical code SW06PCR030 = 600V_{RRM} diode with stud anode

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

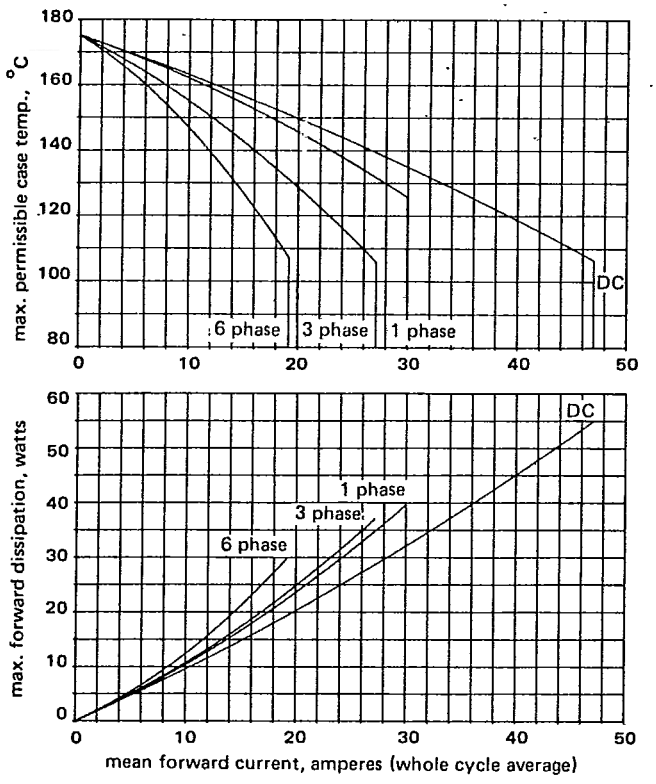


Figure 1 Dissipation and stud temperature v. mean forward current

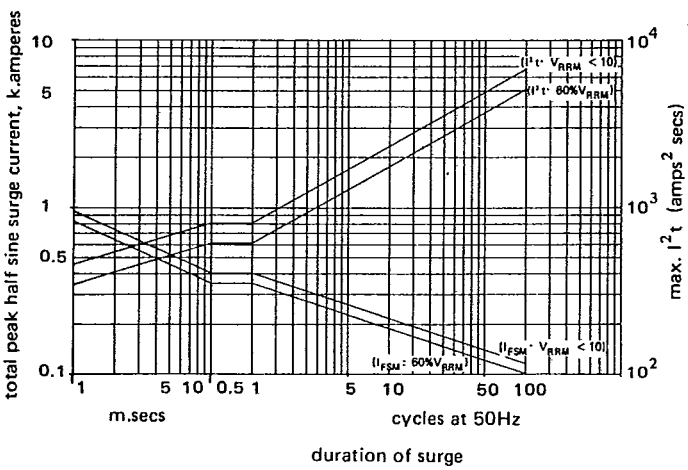


Figure 2 Max. non repetitive surge current at initial junction temperature 175°C

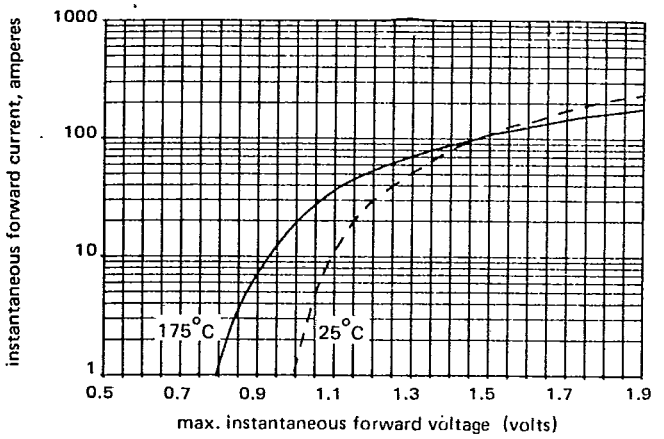


Figure 3 Forward voltage characteristic

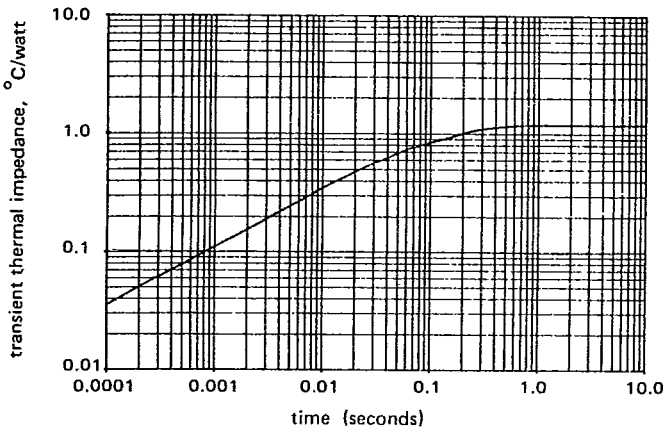
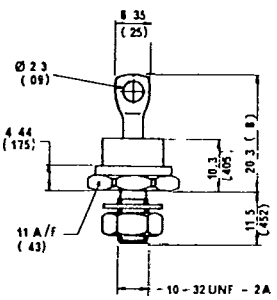


Figure 4 Transient thermal impedance, junction to case



Mounting Torque
0.20 – 0.25 KgM
threads not to be lubricated

Weight: 6 grams

dimensions in mm (inches)

Conforms to DO – 4

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