



# WESTCODE SEMICONDUCTORS



TECHNICAL  
PUBLICATION

**D P12**

ISSUE 2

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## Stud-Base Silicon Rectifier Diodes Type PCN/PCRO12 17 amperes average: up to 1200 volts $V_{RRM}$

**RATINGS** Maximum values at 150°C T<sub>j</sub> unless stated otherwise

RATING	CONDITIONS	SYMBOL	
Average forward current	Half sine wave 100°C case temperature	$I_{F(AV)}$	17A
RMS current		$I_{F(RMS)}$	40A
DC forward current		$I_F$	40A
Peak one-cycle surge (non repetitive)	10ms duration $\left\{ \begin{array}{l} 60\% V_{RRM} \text{ re-applied} \\ V_R \leq 10 \text{ volts} \end{array} \right.$	$I_{FSM(1)}$	210A
Maximum permissible surge energy	10ms duration $\left\{ \begin{array}{l} 60\% V_{RRM} \text{ re-applied} \\ V_R \leq 10 \text{ volts} \end{array} \right.$	$I_{FSM(2)}$	240A
		$I^2 t (1)$	220A <sup>2</sup> s
	3ms duration $V_R \leq 10 \text{ volts}$	$I^2 t (2)$	290A <sup>2</sup> s 213A <sup>2</sup> s
Case operating temperature		T <sub>C</sub>	-55, +150°C
Storage temperature		T <sub>stg</sub>	-55, +150°C

**CHARACTERISTICS** Maximum values at 150°C T<sub>j</sub> unless stated otherwise

CHARACTERISTIC	CONDITIONS	SYMBOL	
Peak forward voltage drop	At 55A, $I_{FM}$	$V_{FM}$	1.62V
Forward conduction threshold voltage		$V_0$	0.98V
Forward conduction slope resistance		$r$	11.6mΩ
Peak reverse current	At $V_{RRM}$ DC and 180° sine wave 120° rectangular wave	$I_{RRM}$	3mA
Thermal resistance junction to case for a diode with a maximum forward volt-drop characteristic		$R_{th(j-c)}$	2°C/W 2.94°C/W
Thermal resistance case to heatsink		$R_{th(c-hs)}$	0.25°C/W

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

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

S	www	DataShee	4U.com	P	C	●	0	1	2
<b>FIXED BASIC CODE</b>	<b>VOLTAGE CODE</b> (see above)			<b>FIXED OUTLINE CODE</b> DO4		<b>STUD POLARITY</b> N = cathode R = anode	<b>FIXED TYPE CODE</b>		

Typical code SW06PCRO12 = 600V<sub>RRM</sub> diode with stud anode

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

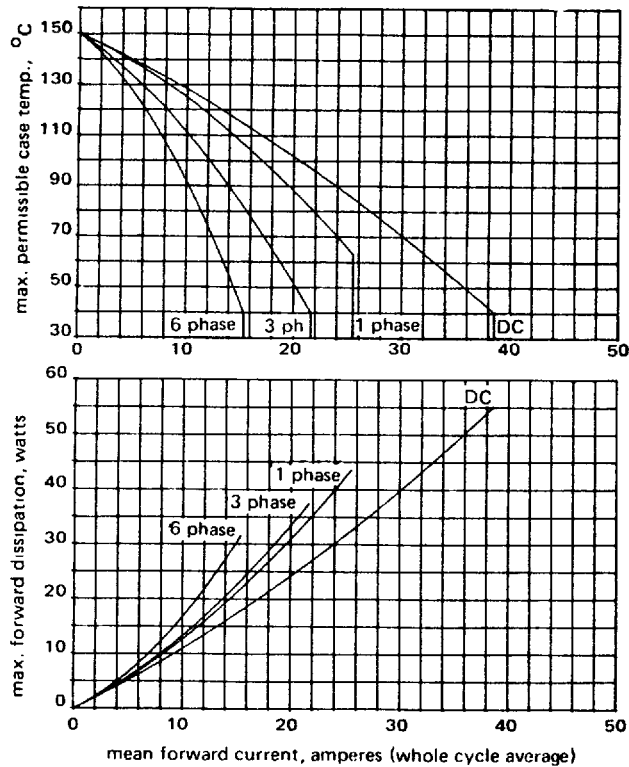


Figure 1 Dissipation and stud temperature v. mean forward current

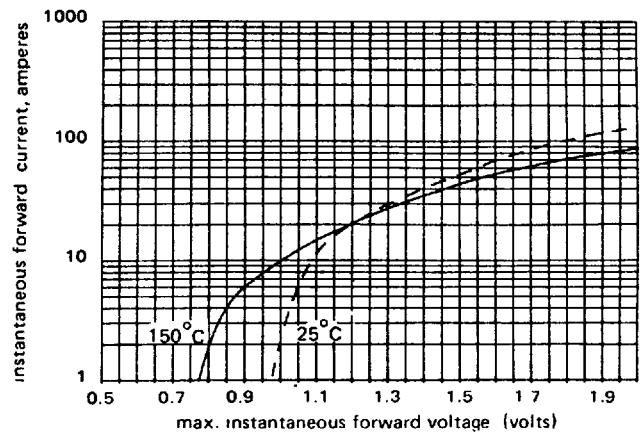


Figure 3 Forward voltage characteristic

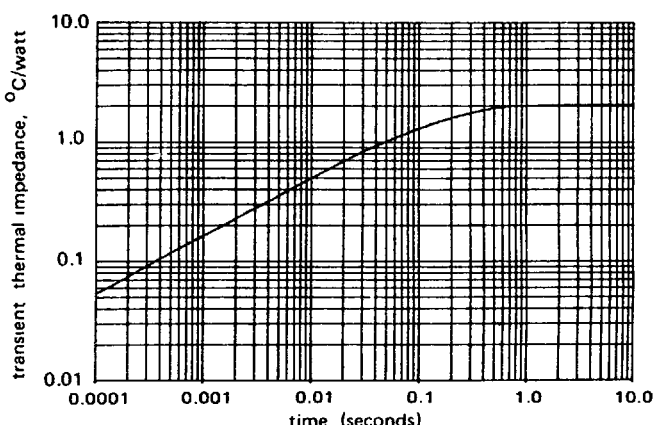


Figure 4 Transient thermal impedance, junction to case

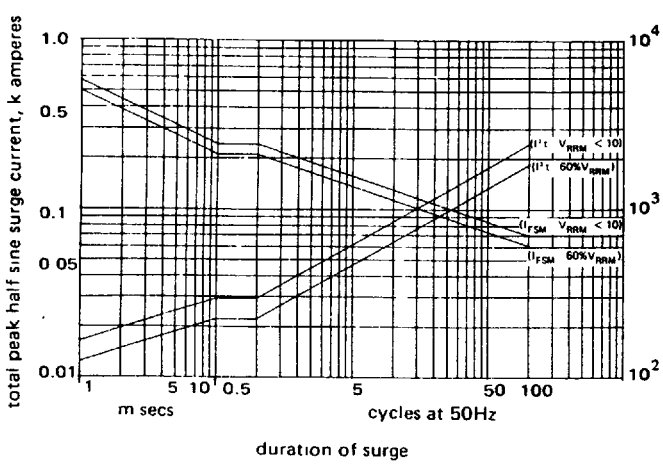
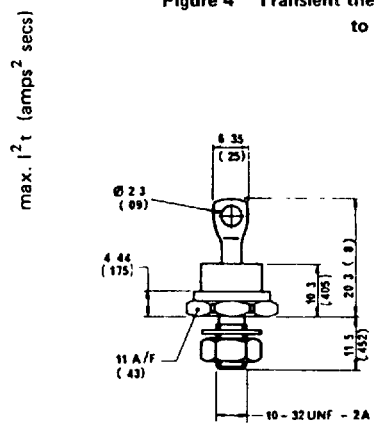


Figure 2 Max. non repetitive surge current at initial junction temperature 150°C



Mounting Torque  
 0.20 - 0.25 KgM  
 threads not to be  
 lubricated  
 Weight: 6 grams  
 dimensions  
 in mm (inches)

Conforms to DO - 4

**HAWKER**  
**WESTCODE SEMICONDUCTORS**  
**SIDDELEY**

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