

## Stud-Base Silicon Rectifier Diodes Type PCN/PCRO30

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

**RATINGS** Maximum values at 175°C T<sub>j</sub> 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 $\left\{ \begin{array}{l} 60\% V_{RRM} \text{ re-applied} \\ V_R \leq 10 \text{ volts} \end{array} \right.$	$I_{FSM(1)}$	371A
		$I_{FSM(2)}$	424A
Maximum permissible surge energy	8.3ms duration $\left\{ \begin{array}{l} 60\% V_{RRM} \text{ re-applied} \\ V_R \leq 10 \text{ volts} \end{array} \right.$	$I^2 t (1)$	594A <sup>2</sup> s
	3ms duration $V_R \leq 10 \text{ volts}$	$I^2 t (2)$	776A <sup>2</sup> s
Case operating temperature		T <sub>c</sub>	-55, +175°C
Storage temperature		T <sub>stg</sub>	-55, +175°C

**CHARACTERISTICS** Maximum values at 175°C T<sub>j</sub> 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 voltage drop characteristic	DC and 180° sine wave 120° rectangular wave	$R_{th(j-c)}$	1.25°C/W 1.86°C/W
Thermal resistance case to heatsink		$R_{th(c-hs)}$	0.26°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 D04	STUD POLARITY N = cathode R = anode	FIXED TYPE CODE	

 Typical code SW06PCRO30 = 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.*

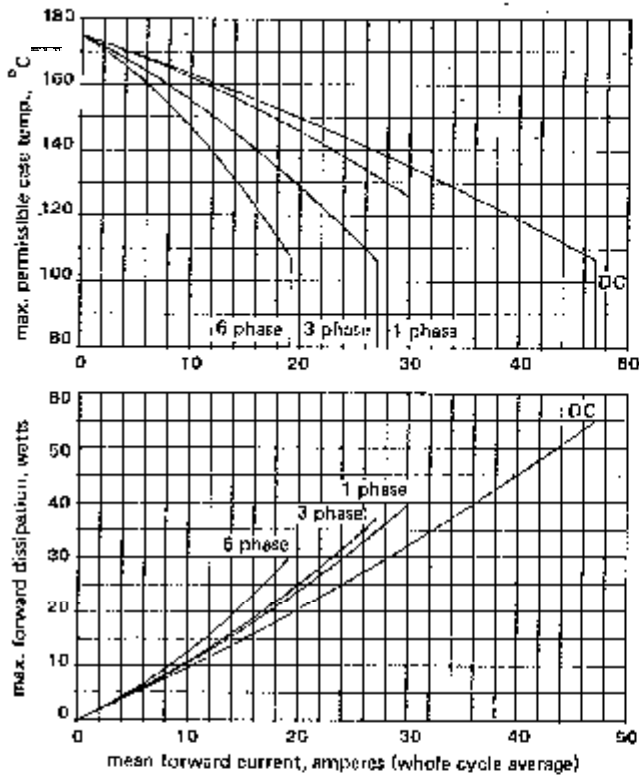


Figure 1 Dissipation and stud temperature v. mean forward current

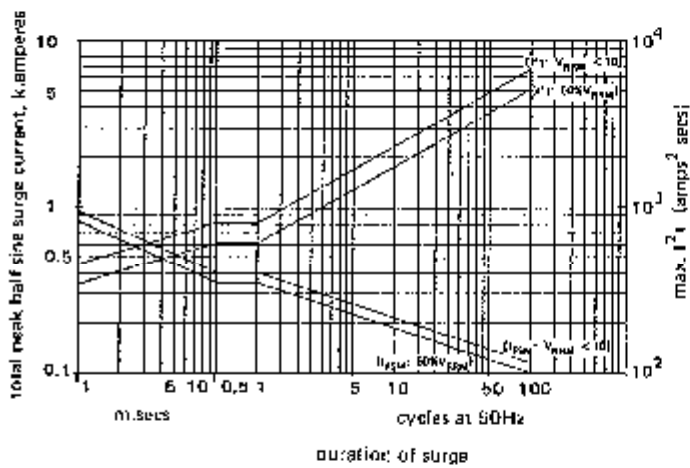


Figure 2 Max. non repetitive surge current at initial junction temperature 175°C

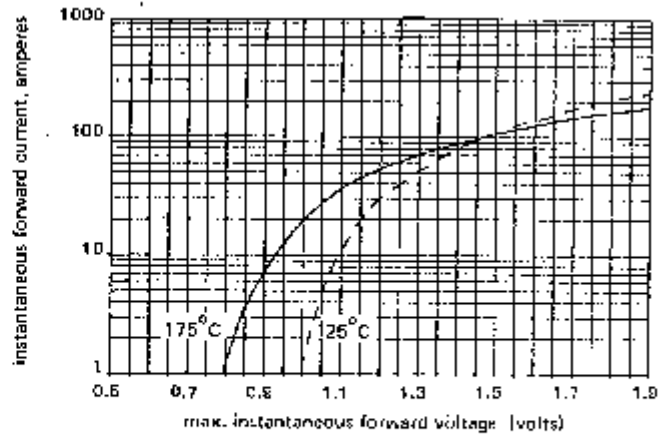


Figure 3 Forward voltage characteristic

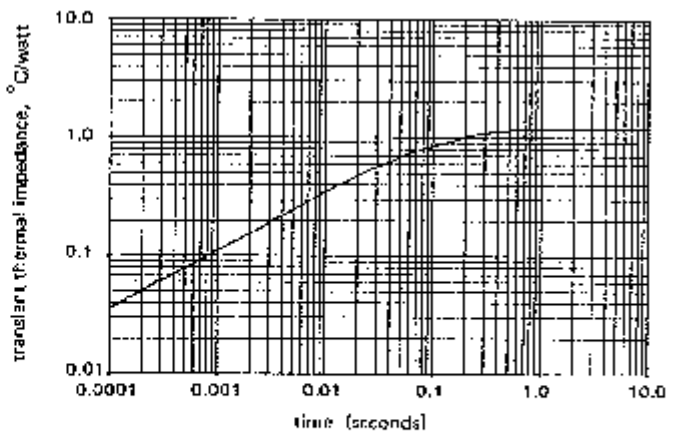
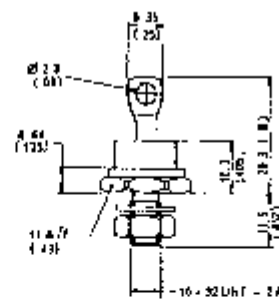


Figure 4 Transient thermal impedance, junction to case



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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