



WESTCODE SEMICONDUCTORS


**TECHNICAL
PUBLICATION**
D H320
ISSUE 1
May, 1980

Flat-Base Silicon Rectifier Diodes Type HHN/HHR320

320 amperes average: up to 2400 volts V_{RRM}

RATINGS Maximum values at 180°C T_j unless stated otherwise

RATING	CONDITIONS	SYMBOL	
Average forward current	Half sine wave 100°C case temperature	$I_{F(AV)}$	320A
RMS current		$I_{F(RMS)}$	600A
DC forward current		I_F	600A
Peak one-cycle surge (non repetitive)	10ms duration $\begin{cases} 60\% V_{RRM} \text{ re-applied} \\ V_R \leq 10 \text{ volts} \end{cases}$	$I_{FSM(1)}$ $I_{FSM(2)}$	4000A 4400A
Maximum permissible surge energy	10ms duration $\begin{cases} 60\% V_{RRM} \text{ re-applied} \\ V_R \leq 10 \text{ volts} \end{cases}$	$I^2 t (1)$ $I^2 t (2)$	80000A ² s 96800A ² s
	3ms duration $V_R \leq 10 \text{ volts}$		71580A ² s
Case operating temperature		T _C	-30, +180°C
Storage temperature		T _{stg}	-40, +200°C

CHARACTERISTICS Maximum values at 180°C T_j unless stated otherwise

CHARACTERISTIC	CONDITIONS	SYMBOL	
Peak forward voltage drop	At 1000A, I_{FM}	V_{FM}	1.84V
Forward conduction threshold voltage		V_0	1V
Forward conduction slope resistance		r	0.83mΩ
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 120° rectangular wave	$R_{th(j-c)}$	0.15°C/W 0.16°C/W
Thermal resistance case to heatsink		$R_{th(c-hs)}$	0.04°C/W

VOLTAGE CODE →	16	18	20	22	24				
Repetitive voltage V_{RRM}	1600	1800	2000	2200	2400				
Non-repetitive voltage V_{RSM}	1700	1900	2100	2300	2500				

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

S	W	●	●	H	H	●	3	2	0
FIXED BASIC CODE	VOLTAGE CODE (see above)			FIXED OUTLINE CODE		BASE POLARITY N = cathode R = anode		FIXED TYPE CODE	

 Typical code SW18HHR320 = 1800V_{RRM} diode with base anode

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

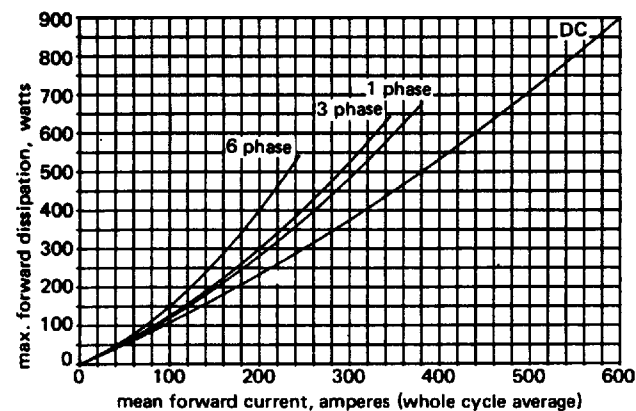
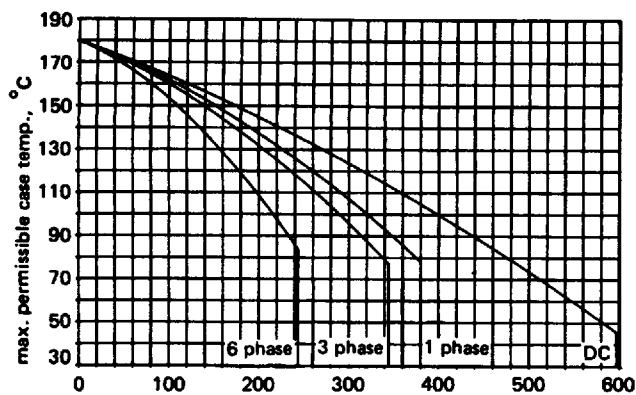


Figure 1 Dissipation and stud temperature
v. mean forward current

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

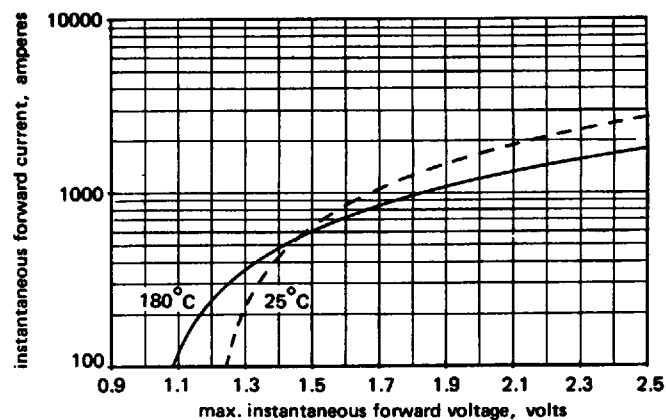


Figure 3 Forward voltage characteristic

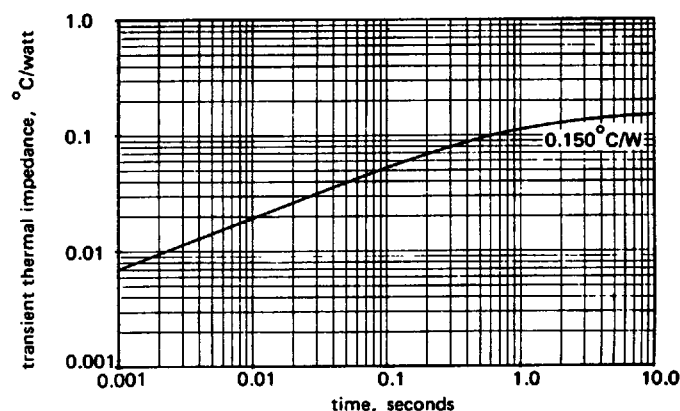
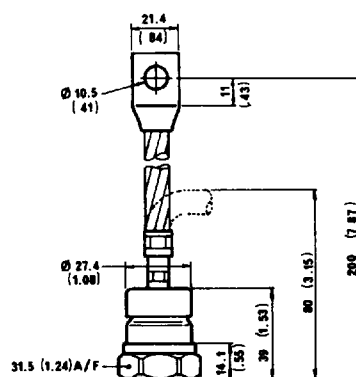


Figure 4 Transient thermal impedance, junction
to case



Mounting:
Clamp Kit 170A102
Weight: 200 grams
dimensions
in mm (inches)

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