

WESTCODE SEMICONDUCTORS

 Series
SMxxPCN/R134

Stud Base Fast Recovery Diode

Suitable for G.T.O. snubber networks, featuring low forward recovery voltage, soft reverse recovery and low stored charge.

Ratings	Unless otherwise indicated $T_j = 125^\circ\text{C}$.	Maximum Limits						Units
		16	18	20	22	24	25	
V_{RRM} V_{RSM}	Voltage Codes							
	Repetitive peak reverse voltage.	1600	1800	2000	2200	2400	2500	V
	Non-repetitive peak reverse voltage.	1700	1900	2100	2300	2500	2600	V

$I_{F(AV)}$	Average forward current	Half sine wave 100°C case temperature	120	A
$I_{(RMS)}$	R.M.S. forward current	25°C heatsink temperature	400	A
I_F	Continuous forward current	25°C heatsink temperature	400	A
$I_{FSM(1)}$	Peak forward surge current	10ms duration, 60% V_{RRM} re-applied	4.25	KA
$I_{FSM(2)}$	(non-repetitive)	10ms duration, $V_R \leq 10$ volts	4.67	KA
$I^2 t(2)$	Maximum permissible surge energy	10ms duration, $V_R \leq 10$ volts	109×10^3	A^2s
		3ms duration, $V_R \leq 10$ volts	80.6×10^3	A^2s
T_j	Operating temperature range		-40 to +125	$^\circ\text{C}$
T_{stg}	Storage temperature range		-40 to +150	$^\circ\text{C}$

Characteristics		Unless otherwise indicated $T_j = 125^\circ\text{C}$		
V_{FM}	Peak forward voltage	$I_F = 470\text{ A}$	1.77	V
V_O	Forward conduction threshold voltage		1.21	V
r	Forward conduction slope resistance		1.20	$\text{m}\Omega$
V_{fr}	Typical forward recovery voltage	At $1000\text{A}/\mu\text{s}$	70	V
I_{RRM}	Repetitive peak reverse current	At V_{RRM}	20	mA
Q_{ra}	Stored charge	$I_{FM} = 1000\text{A}$, $di/dt 200\text{A}/\mu\text{s}$ $V_{RM} = 50\text{V}$, 50% chord value	265	μC
t_{rr}	Typical reverse recovery		1.90	μs
$R_{th(j-c)}$	Thermal resistance, junction to case		0.13	$^\circ\text{C}/\text{W}$
$R_{th(c-s)}$	Thermal resistance, case to heat sink		0.04	$^\circ\text{C}/\text{W}$

Ordering Information (Please quote device code as explained below - 10 digits)

S	M	• •	PC	•	1 3 4
Fixed type code	Voltage Code (see ratings)	Fixed Outline Code	Base Polarity N = cathode R = anode	Fixed Type Code	

 Typical code: SM20PCN134 - 2000 V_{RRM} Diode with Stud Cathode.

Full details of interpretation of curves, calculation of total losses and mounting details can be found in leaflet "Series SM/P/D/R - Notes on Ratings and Characteristics".

