



WESTCODE SEMICONDUCTORS



Technical Publication
1N3879-83
Issue 1
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Fast Recovery Stud-Base Diode Type 1N3879-83

6 amperes average: up to 400 volts V_{RRM}

RATINGS (Maximum values at T_j 150°C unless stated otherwise)

RATING	CONDITIONS	SYMBOL	
Average forward current	Half sine wave 100°C case temperature	$I_{F(AV)}$	6A
RMS current		$I_{F(RMS)}$	47A
DC forward current		I_F	47A
Peak one-cycle surge (non repetitive)	10ms sine pulse { 60% V_{RRM} re-applied max. $V_{RM} \leq 10$ volts	$I_{FSM(1)}$ $I_{FSM(2)}$	125A 145A
Maximum surge I^2t	10ms sine pulse { 60% V_{RRM} re-applied max. $V_{RM} \leq 10$ volts	$I^2t(1)$ $I^2t(2)$	78A ² s 105A ² s
	3ms sine pulse $V_{RM} \leq 10$ volts	$I^2t(3)$	78A ² s
Operating temperature range		T_{case}	-65,+150°C
Storage temperature range		T_{stg}	-65,+175°C

CHARACTERISTICS (Maximum values at T_j 150°C unless stated otherwise)

CHARACTERISTIC	CONDITIONS	SYMBOL	
Peak forward voltage drop	At 40A, I_{FM}	V_{FM}	1.7V
Forward conduction threshold voltage		V_o	1.35V
Forward conduction slope resistance		r	8.4mΩ
Peak reverse current	$V_{RM} = V_{RRM}$ (max.) $T_j = 150^\circ C$ $T_j = 25^\circ C$	I_{RRM}	10mA
Thermal resistance	Junction to case Case to heatsink	$R_{th(j-c)}$ $R_{th(c-hs)}$	1mA 2.0°C/W 0.25°C/W
Reverse recovery time	$I_{FM} = 1A$, $dI/dt = 25 A/\mu s$ $V_{RM} = 50V$, $T_j = 25^\circ C$	t_{rr}	0.2μs

VOLTAGE CODE	879	880	881	882	883	
Repetitive voltage V_{RRM}	50	100	200	300	400	
Non-repetitive voltage V_{RSM}	100	200	300	400	500	

ORDERING INFORMATION (Please quote device code as explained below - 6 or 7 digits)

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FIXED JEDEC CODE	FIXED CODE	VOLTAGE CODE (see above)	for reverse polarity add suffix R

Typical codes 1N3881 = 200V_{RRM} diode with base cathode 1N3881R = 200V_{RRM} diode with base anode