



# WESTCODE



# SEMICONDUCTORS

 Technical  
 Publication

**1N3879-83**

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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 $\left\{ \begin{array}{l} 60\% V_{RRM} \text{ re-applied} \\ V_{RM} \leq 10 \text{ volts} \end{array} \right.$ max.	$I_{FSM(1)}$	125A
		$I_{FSM(2)}$	145A
Maximum surge $I^2t$	10ms sine pulse $\left\{ \begin{array}{l} 60\% V_{RRM} \text{ re-applied} \\ V_{RM} \leq 10 \text{ volts} \end{array} \right.$ max.	$I^2t(1)$	78A <sup>2</sup> s
		$I^2t(2)$	105A <sup>2</sup> s
	3ms sine pulse $V_{RM} \leq 10 \text{ volts}$	$I^2t(3)$	78A <sup>2</sup> 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		$V_0$	1.35V
Forward conduction slope resistance		$r$	8.4m $\Omega$
Peak reverse current	$V_{RM} = V_{RRM} \text{ (max.)}$ $T_j = 150^\circ\text{C}$ $T_j = 25^\circ\text{C}$	$I_{RRM}$	10 $\mu$ A
Thermal resistance	Junction to case	$I_{RRM}$	1mA
	Case to heatsink	$R_{th(j-c)}$	2.0°C/W
Reverse recovery time	$I_{FM} = 1\text{A}$ , $di/dt = 25\text{ A}/\mu\text{s}$ $V_{RM} = 50\text{V}$ , $T_j = 25^\circ\text{C}$	$R_{th(c-hs)}$	0.25°C/W
		$t_{rr}$	0.2 $\mu$ s

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)

1	N	3	●	●	●	●
FIXED JEDEC CODE		FIXED CODE	VOLTAGE CODE (see above)			for reverse polarity add suffix R

 Typical codes 1N3881 = 200V<sub>RRM</sub> diode with base cathode 1N3881R = 200V<sub>RRM</sub> diode with base anode