




# 1N5817 THRU 1N5819

## SCHOTTKY RECTIFIERS



VOLTAGE:	20-40 Volts	CURRENT:	1 Amperes	DO-41	Marking and Polarity
<b>FEATURES</b> <ul style="list-style-type: none"> <li>Plastic package has Underwriters Laboratory Flammability Classification 94V-0</li> <li>Metal silicon junction ,majority carrier conduction</li> <li>Guard ring for overvoltage protection</li> <li>Low power loss ,high efficiency</li> <li>High current capability ,ultra low forward voltage drop</li> </ul>					
<b>MECHANICAL DATA</b> <ul style="list-style-type: none"> <li><b>Case:</b> JEDEC DO-41 molded plastic body</li> <li><b>Terminals:</b> Plated axial leads, solderable per MIL-STD-750,method 2026</li> <li><b>Polarity:</b> color band denotes cathode end</li> <li><b>Mounting Position:</b> Any</li> <li><b>Weight:</b> 0.012 ounce, 0.33 grams</li> </ul>				<b>Remark:</b> <ol style="list-style-type: none"> <li>1N581X=Mode,X=7,8,9</li> <li>NH=niuhang trademark</li> <li>FFDDK=Production line,According to actual changes;</li> </ol>	
<b>TYPICAL APPLICATIONS</b> <ul style="list-style-type: none"> <li>For use in low voltage ,high frequency inverters ,DC/DC converters, free wheeling ,and polarity protection applications</li> </ul>					

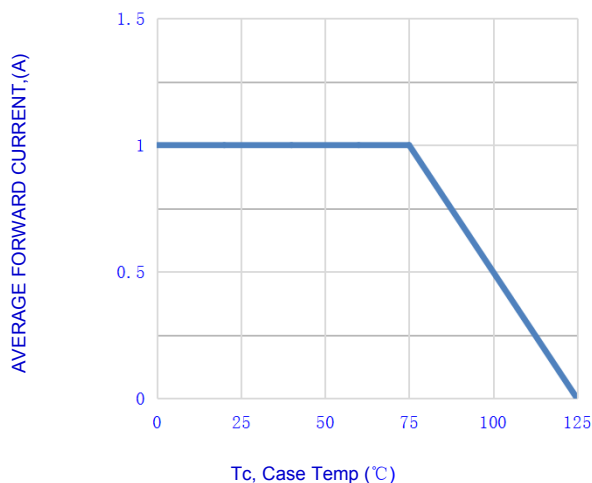
Maximum Ratings (Ratings at 25°C ambient temperature unless otherwise specified.)							
Parameter	Symbol		1N5817	1N5818	1N5819	Unit	
Maximum repetitive peak reverse voltage	$V_{RRM}$		20	30	40	V	
Maximum RMS voltage	$V_{RMS}$		14	21	28	V	
Maximum DC blocking voltage	$V_{DC}$		20	30	40	V	
Maximum average forward rectified current(see fig.1)	$I_{F(AV)}$		1			A	
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)(see fig.5)	$I_{FSM}$		25			A	
Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified).							
Parameter	Test Conditions		Symbol	1N5817	1N5818	1N5819	Unit
Maximum instantaneous forward voltage(see fig.2)(Note 1)	$T_A=25^{\circ}C$	$I_F=1A$	$V_F$	0.47	0.55	0.6	V
Maximum instantaneous reversecurrent at rated DC blockingvoltage (see fig.3)(Note 1)	$T_A=25^{\circ}C$	$V_R=V_{RRM}$	$I_R$	200			uA
	$T_A=125^{\circ}C$	$V_R=80\%*V_{RRM}$		10			mA
Typical junction capacitance(see fig.4)	4V,1MHz		$C_J$	110			pF
Thermal Characteristcs (Ratings at 25°C ambient temperature unless otherwise specified )							
Parameter	Symbol		1N5817	1N5818	1N5819	Unit	
Operating junction	$T_J$		-55	to	125	°C	
Storage temperature range	$T_{STG}$		-55	to	125		
Typical thermal resistance (Note 2)	$R_{\theta JA}$		80			°C/W	
	$R_{\theta JL}$		15				
Note:							
1. Pulse width < 300 uS, Duty cycle < 2%							
2. Thermal resistance from junction to lead vertical P.C.B. mounted , 0.375"(9.5mm)lead length,Polymide PCB, 2 oz Copper.							

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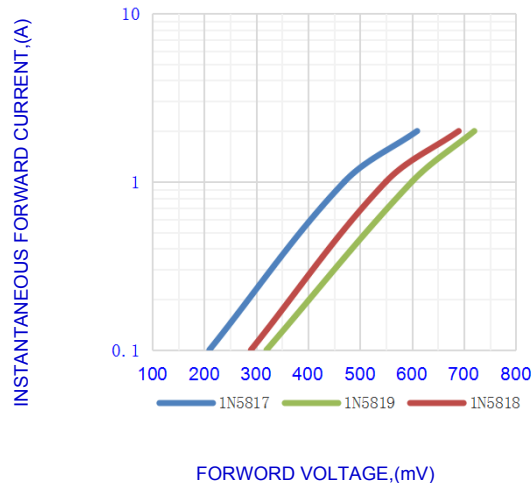
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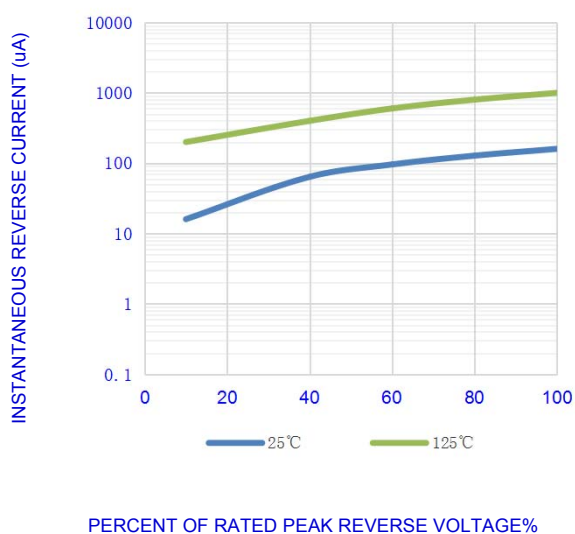
**RATING AND CHARACTERISTIC CURVES**



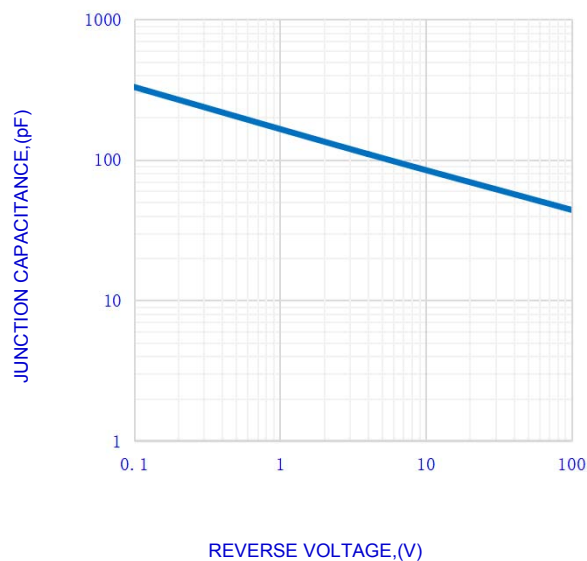
**Fig.1- FORWARD CURRENT DERATING CURVE**



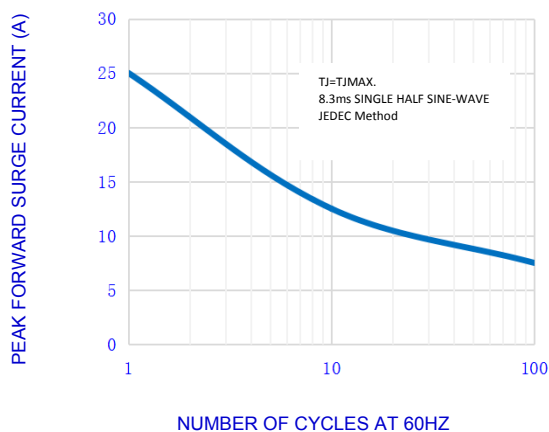
**Fig.2-TYPICAL INSTANTANEOUS FORWARD**



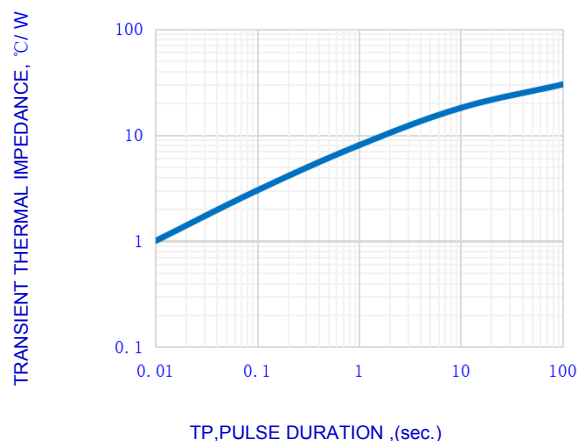
**Fig.3-TYPICAL REVERSE CHARACTERISTICS**



**Fig.4- TYPICAL JUNCTION CAPACITANCE**



**Fig.5-MAX. NON-REPETITIVE SURGE CURRENT**



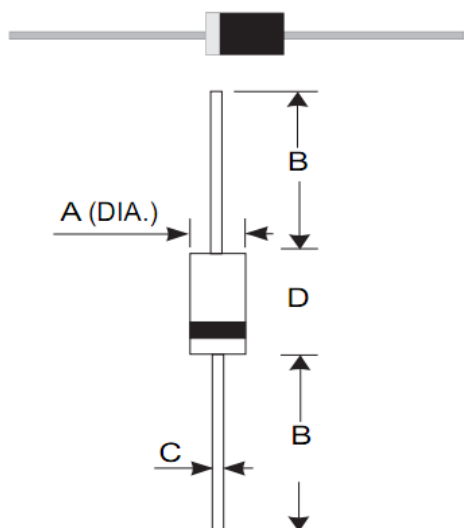
**FIG.6-TYPICAL TRANSIENT THERMAL IMPEDANCE**

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**OUTLINE DRAWINGS**

**DO-41**



**OUTLINE DIMENSIONS**

Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.0	-	2.8	0.079	-	0.110
B	25.1	-	-	0.988	-	-
C	0.6	-	0.9	0.024	-	0.035
D	4.2	-	5.2	0.165	-	0.205

**Packing Information**

Package	Pack	Box Size L×W×H(mm)	Quantity (pcs/box)	Carton Size L×W×H(mm)	Quantity (pcs/carton)
D0-41	B/G	250*75*140	5000	420*280*310	50000

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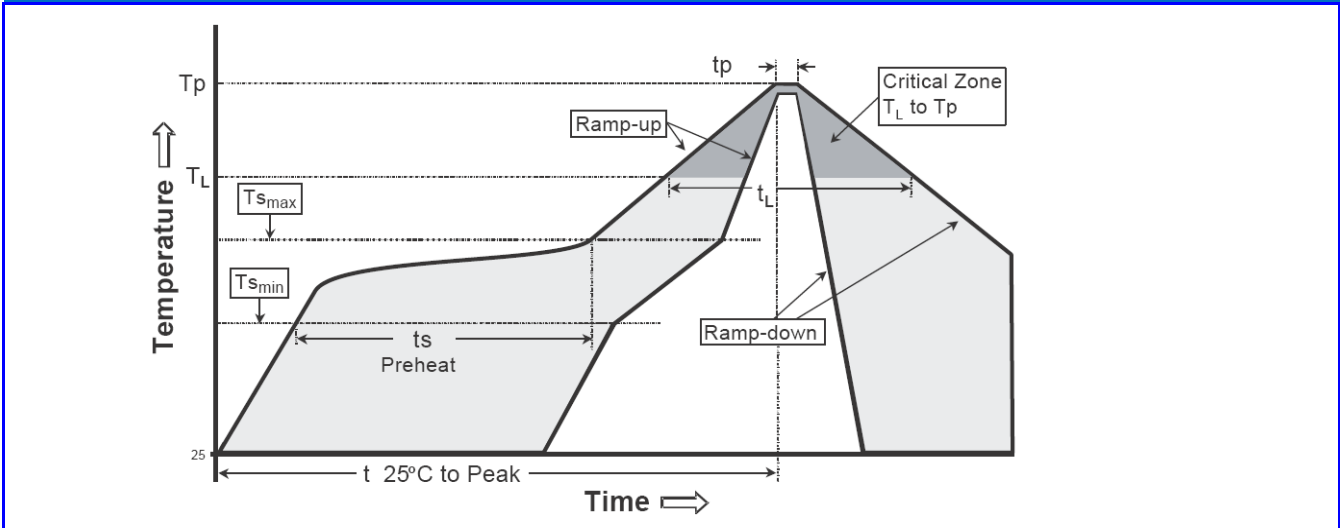
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**Recommended wave soldering condition**

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

**Recommended temperature profile for IR reflow**



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (T <sub>smax</sub> to T <sub>p</sub> )	3°C/second max.	3°C/second max.
Preheat -Temperature Min(TS min) -Temperature Max(TS max) -Time(ts min to ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (T <sub>L</sub> ) - Time (t <sub>L</sub> )	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(T <sub>P</sub> )	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

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