

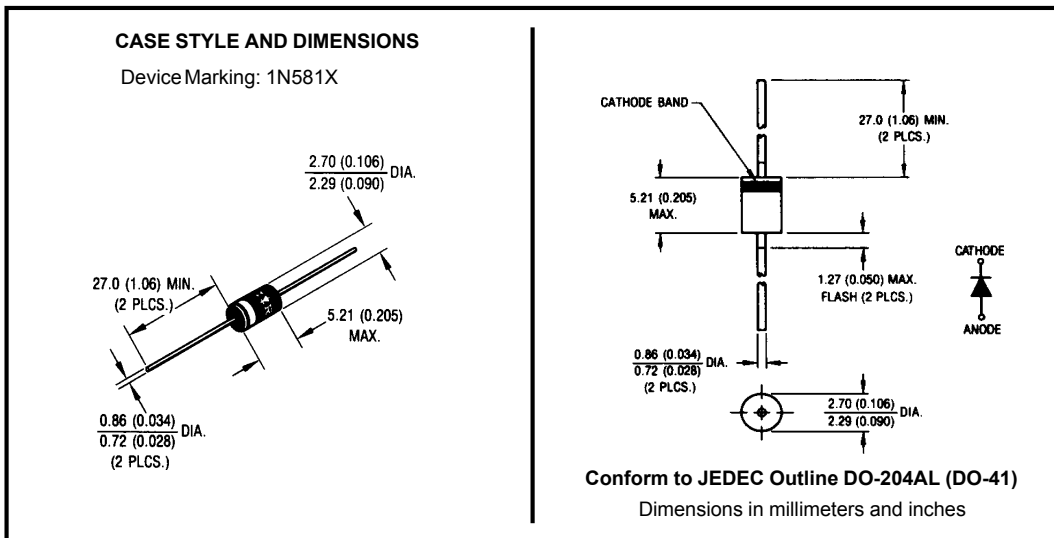
**Major Ratings and Characteristics**

Characteristics	1N5818 1N5819	Units
$I_{F(AV)}$ Rectangular waveform	1.0	A
$V_{RRM}$	30/40	V
$I_{FSM}$ @ $t_p = 5 \mu s$ sine	225	A
$V_F$ @1 Apk, $T_J = 25^\circ C$	0.55	V
$T_J$ range	-40 to 150	$^\circ C$

**Description/Features**

The 1N5818/ 1N5819 axial leaded Schottky rectifier has been optimized for very low forward voltage drop, with moderate leakage. Typical applications are in switching power supplies, converters, free-wheeling diodes, and reverse battery protection.

- Low profile, axial leaded outline
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Very low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability



## Voltage Ratings

Part number	1N5818	1N5819
$V_R$ Max. DC Reverse Voltage (V)	30	40
$V_{RWM}$ Max. Working Peak Reverse Voltage (V)		

## Absolute Maximum Ratings

Parameters	Value	Units	Conditions
$I_{F(AV)}$ Max. Average Forward Current * See Fig. 4	1.0	A	50% duty cycle @ $T_L = 90^\circ\text{C}$ , rectangular wave form
$I_{FSM}$ Max. Peak One Cycle Non-Repetitive Surge Current * See Fig. 6	225	A	5 $\mu\text{s}$ Sine or 3 $\mu\text{s}$ Rect. pulse
	35		10ms Sine or 6ms Rect. pulse

Following any rated load condition and with rated  $V_{RWM}$  applied

## Electrical Specifications

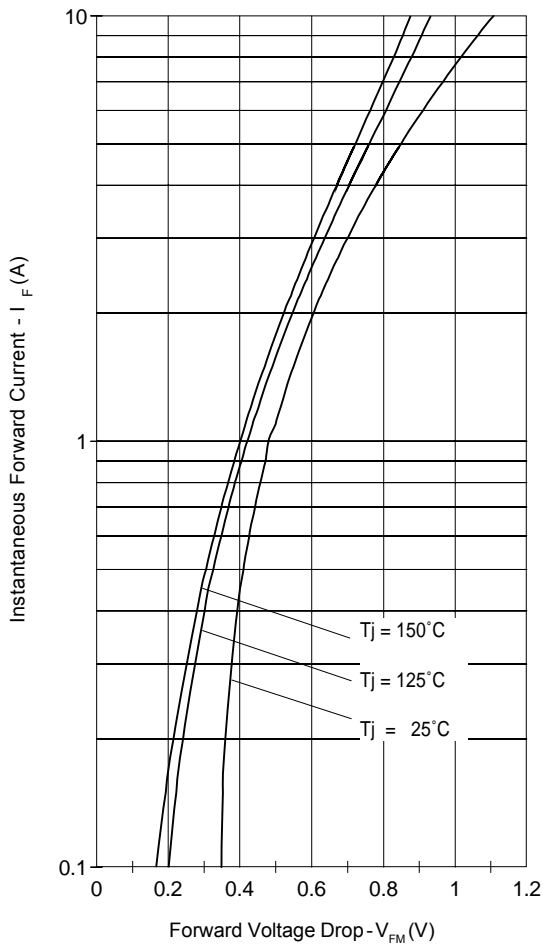
Parameters	1N5818	1N5819	Units	Conditions
$V_{FM}$ Max. Forward Voltage Drop * See Fig. 1 (1)	0.55	0.6	V	@ 1A
	0.71	0.73	V	@ 2A
	0.875	0.9	V	@ 3A
	0.5	0.55	V	@ 1A
	0.61	0.63	V	@ 2A
	0.77	0.79	V	@ 3A
$I_{RM}$ Max. Reverse Leakage Current * See Fig. 2 (1)	1.0		mA	$T_J = 25^\circ\text{C}$
	6.0		mA	$T_J = 100^\circ\text{C}$
	12		mA	$T_J = 125^\circ\text{C}$
$C_T$ Max. Junction Capacitance	60		pF	$V_R = 5V_{DC}$ (test signal range 100 to 1Mhz) $25^\circ\text{C}$
$L_S$ Typical Series Inductance	8.0		nH	Measured lead to lead 5mm from pack. body
$dv/dt$ Max. Voltage Rate of Change (Rated $V_R$ )	10000		V/ $\mu\text{s}$	

(1) Pulse Width < 300 $\mu\text{s}$ , Duty Cycle < 2%

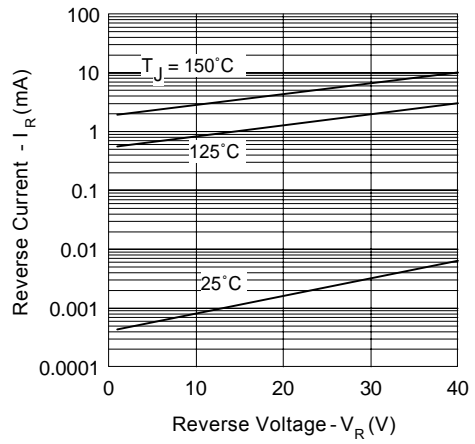
## Thermal-Mechanical Specifications

Parameters	Value	Units	Conditions
$T_J$ Max. Junction Temperature Range	-40 to 150	$^\circ\text{C}$	
$T_{stg}$ Max. Storage Temperature Range	-40 to 150	$^\circ\text{C}$	
$R_{thJL}$ Max. Thermal Resistance Junction to Lead (2)	80	$^\circ\text{C}/\text{W}$	DC operation (* See Fig. 4)
wt Approximate Weight	0.33(0.012)	g(oz.)	
Case Style	DO-204AL(DO-41)		

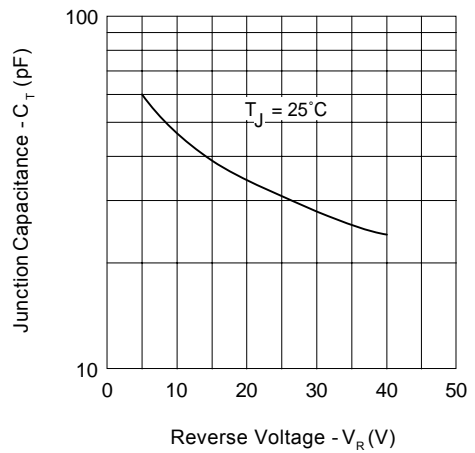
(2) Mounted 1 inch square PCB, thermal probe connected to lead 2mm from package



**Fig. 1 - Typ. Forward Voltage Drop Characteristics**



**Fig. 2 - Typical Values Of Reverse Current Vs. Reverse Voltage**



**Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage**

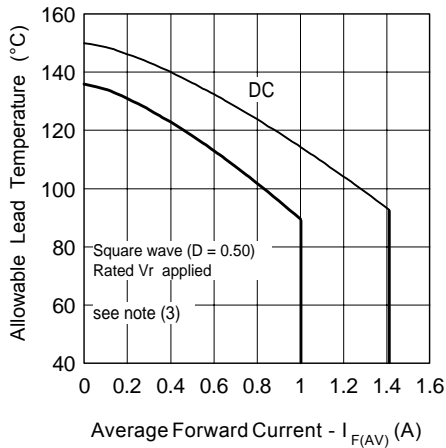


Fig. 4 - Typ. Allowable Lead Temperature Vs. Average Forward Current

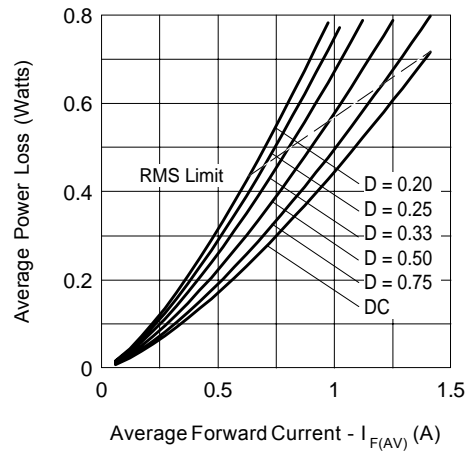


Fig. 5 - Forward Power Loss Characteristics

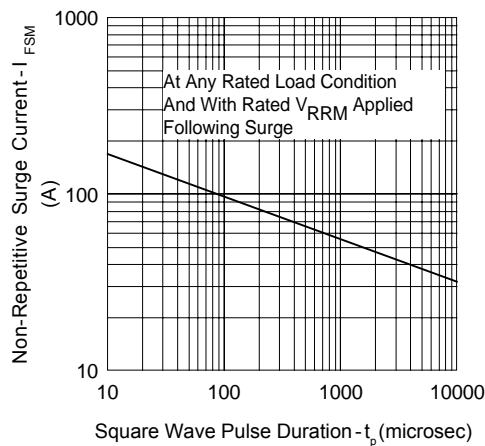


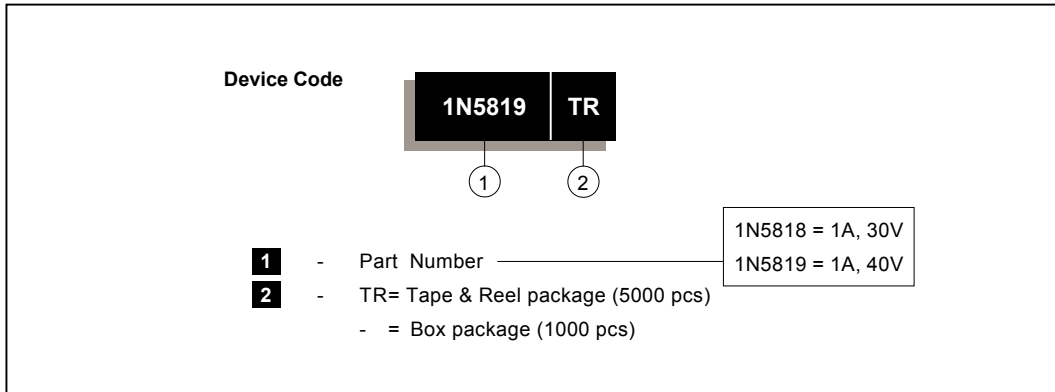
Fig. 6 - Typ. Non-Repetitive Surge Current

(2) Formula used:  $T_C = T_J - (Pd + Pd_{REV}) \times R_{thJC}$ ;

$Pd$  = Forward Power Loss =  $I_{F(AV)} \times V_{FM} @ (I_{F(AV)} / D)$  (see Fig. 6);

$Pd_{REV}$  = Inverse Power Loss =  $V_{R1} \times I_R (1 - D)$ ;  $I_R @ V_{R1} = 80\%$  rated  $V_R$

### Ordering Information Table



Data and specifications subject to change without notice.  
This product has been designed and qualified for Industrial Level.  
Qualification Standards can be found on IR's Web site.