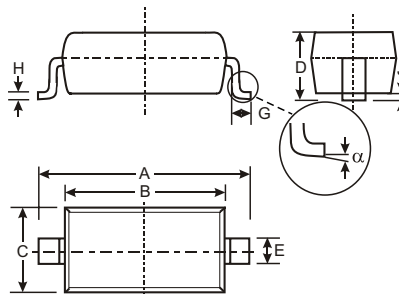


### Features

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- High Current Capability and Low Forward Voltage Drop
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Application

### Mechanical Data

- Case: SOD-123, Plastic
- Plastic Material: UL Flammability Classification Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Polarity: Cathode Band
- Leads: Solderable per MIL-STD-202, Method 208
- Also Available in Lead Free Plating (Matte Tin Finish). Please see Ordering Information, Note 4, on Page 3
- Marking: Date Code and Type Code, See Page 3
- Type Code: SL
- Weight: 0.01 grams (approx.)
- Ordering Information: See Page 3



SOD-123		
Dim	Min	Max
A	3.55	3.85
B	2.55	2.85
C	1.40	1.70
D	—	1.35
E	0.55 Typical	
G	0.25	—
H	0.11 Typical	
J	—	0.10
$\alpha$	0°	8°
All Dimensions in mm		

### Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

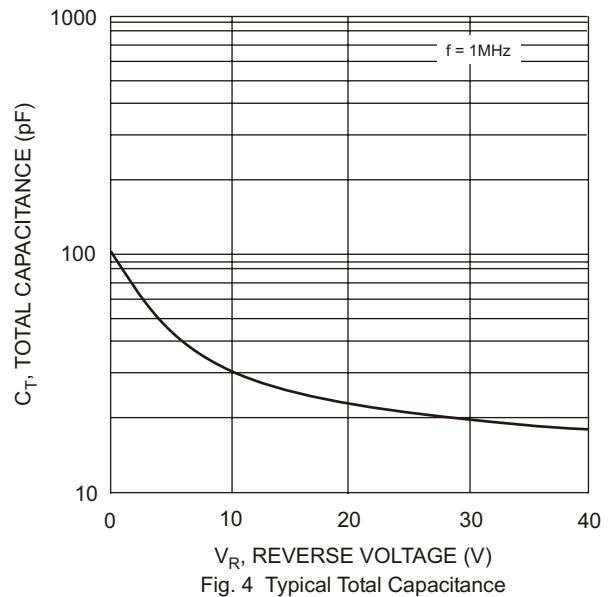
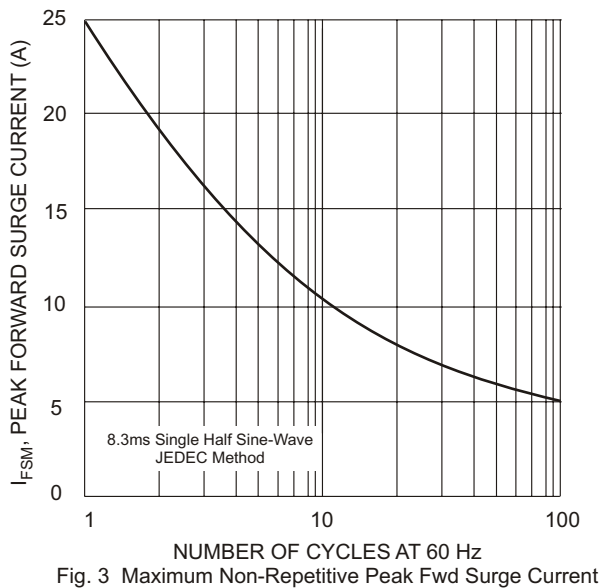
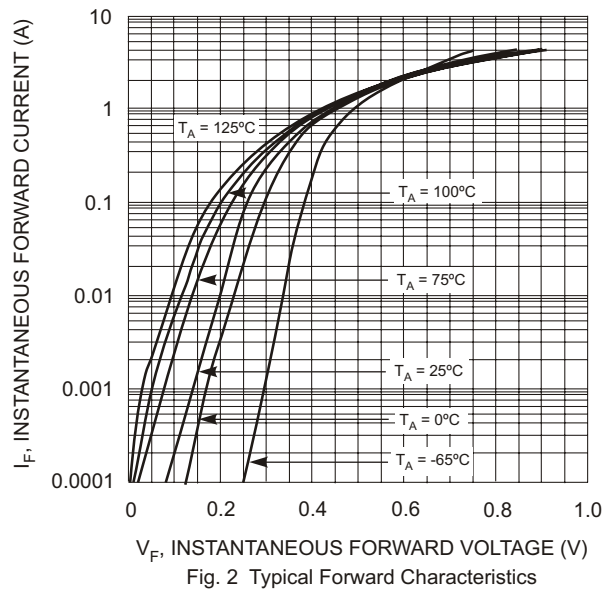
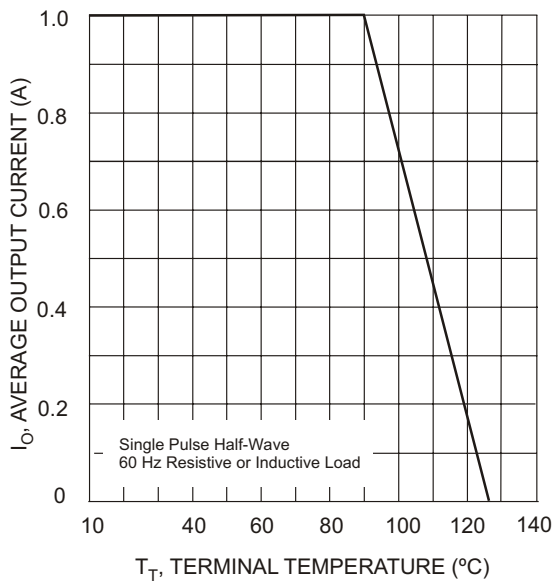
Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage @ $I_R = 1.0\text{mA}$ DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	40	V
RMS Reverse Voltage	$V_{R(RMS)}$	28	V
Average Rectified Output Current @ $T_L = 90^\circ\text{C}$	$I_O$	1.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	25	A
Power Dissipation (Note 2)	$P_d$	450	mW
Typical Thermal Resistance Junction to Ambient (Note 2)	$R_{\theta JA}$	222	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_j, T_{STG}$	-65 to +125	$^\circ\text{C}$

**Electrical Characteristics** @  $T_A = 25^\circ\text{C}$  unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 1)	$V_{(BR)R}$	40	—	—	V	$I_R = 1.0\text{mA}$
Forward Voltage (Note 1)	$V_F$	—	—	0.320 0.450 0.750	V	$I_F = 0.1\text{A}$ $I_F = 1.0\text{A}$ $I_F = 3.0\text{A}$
Reverse Leakage Current (Note 1)	$I_R$	—	—	1.0 10 50 1 2 15 75 3	mA mA $\mu\text{A}$ mA mA $\mu\text{A}$ $\mu\text{A}$ mA	$V_R = 40\text{V}, T_A = 25^\circ\text{C}$ $V_R = 40\text{V}, T_A = 100^\circ\text{C}$ $V_R = 4\text{V}, T_A = 25^\circ\text{C}$ $V_R = 4\text{V}, T_A = 100^\circ\text{C}$ $V_R = 6\text{V}, T_A = 25^\circ\text{C}$ $V_R = 6\text{V}, T_A = 100^\circ\text{C}$
Total Capacitance	$C_T$	—	50	—	pF	$V_R = 4\text{V}, f = 1.0\text{MHz}$

- Notes: 1. Short duration pulse test used to minimize self-heating effect.  
2. Device mounted on FR-4 PC Board, 2"x2", 2 oz. Copper, single sided, Cathode pad dimensions 0.75"x1.0", Anode pad dimensions 0.25"x1.0".



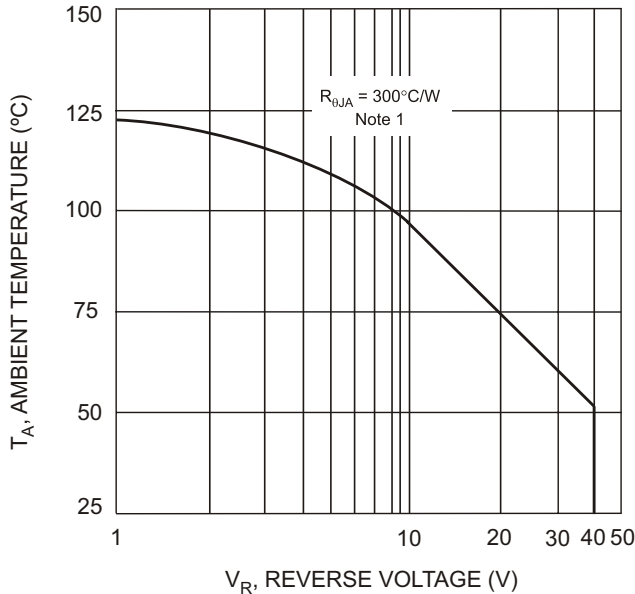


Fig. 5 Typical Safe Operating Area

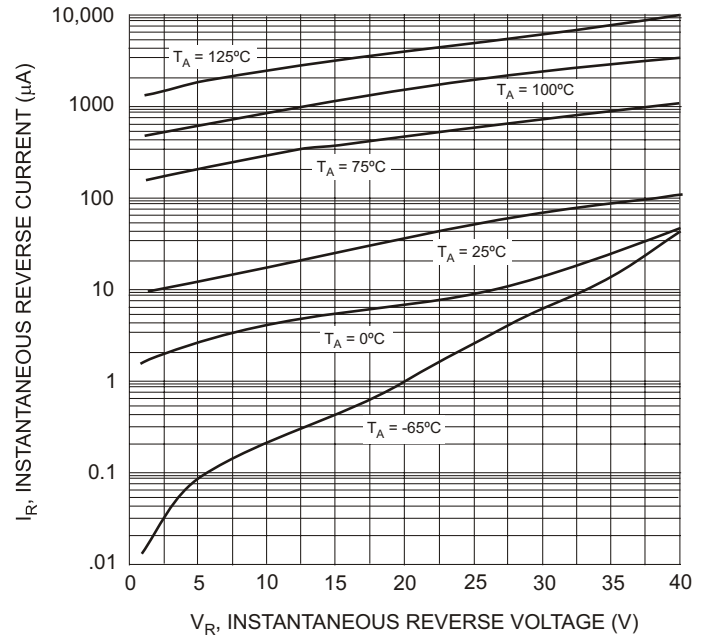


Fig. 6 Typical Reverse Characteristics

**Ordering Information** (Note 3)

Device	Packaging	Shipping
1N5819HW-7	SOD-123	3000/Tape & Reel

- Notes: 3. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.  
 4. For Lead Free version (with Lead Free terminal finish) part number, please add "-F" suffix to part number above.  
 Example: 1N5819HW-7-F.

**Marking Information**



SL = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: N = 2002)  
 M = Month (ex: 9 = September)

Date Code Key

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009
Code	M	N	P	R	S	T	U	V	W

Month	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D



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