1N5819HW

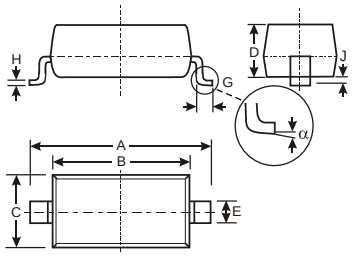
1.0A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

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
- **Lead Free/RoHS Compliant (Note 1)**

Mechanical Data

- Case: SOD-123
- Plastic Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Polarity: Cathode Band
- Leads: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe)
- Marking: Date Code and Type Code, See Page 3
- Type Code: SL
- Ordering Information: See Page 3
- Weight: 0.01 grams (approximate)



SOD-123		
Dim	**Min**	**Max**
A	3.55	3.85
B	2.55	2.85
C	1.40	1.70
D	—	1.35
E	0.45	0.65
	0.55 Typical	
G	0.25	—
H	0.11 Typical	
J	—	0.10
α	0°	8°
All Dimensions in mm		

Maximum Ratings @ T_A = 25°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 DC Blocking Voltage @ I_R = 1.0mA	V_{RRM} V_{RWM} V_R	40	V
RMS Reverse Voltage	$V_{R(RMS)}$	28	V
Average Rectified Output Current @ T_L = 90°C	I_O	1.0	A
Repetitive Peak Forward Current $t_p \leq 1ms, \delta \leq 0.5$	I_{FRM}	1.5	A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	25	A
Power Dissipation (Note 2)	P_d	450	mW
Typical Thermal Resistance Junction to Ambient (Note 2)	$R_{\theta JA}$	222	°C/W
Operating and Storage Temperature Range	T_j, T_{STG}	-65 to +125	°C

Notes: 1. No purposefully added lead.
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".

Electrical Characteristics @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 3)	$V_{(BR)R}$	40	¾	¾	V	I_R = 1.0mA
Forward Voltage	V_F	¾ ¾ ¾	¾ ¾ ¾	0.320 0.450 0.750	V	I_F = 0.1A I_F = 1.0A I_F = 3.0A
Reverse Leakage Current (Note 3)	I_R	¾ ¾ ¾ ¾ ¾ ¾	¾ ¾ 10 1 15 1.5	1.0 10 50 2 75 3	mA mA µA mA µA mA	V_R = 40V, T_A = 25°C V_R = 40V, T_A = 100°C V_R = 4V, T_A = 25°C V_R = 4V, T_A = 100°C V_R = 6V, T_A = 25°C V_R = 6V, T_A = 100°C
Total Capacitance	C_T	¾	50	¾	pF	V_R = 4V, f = 1.0MHz

Notes: 3. Short duration pulse test used to minimize self-heating effect.

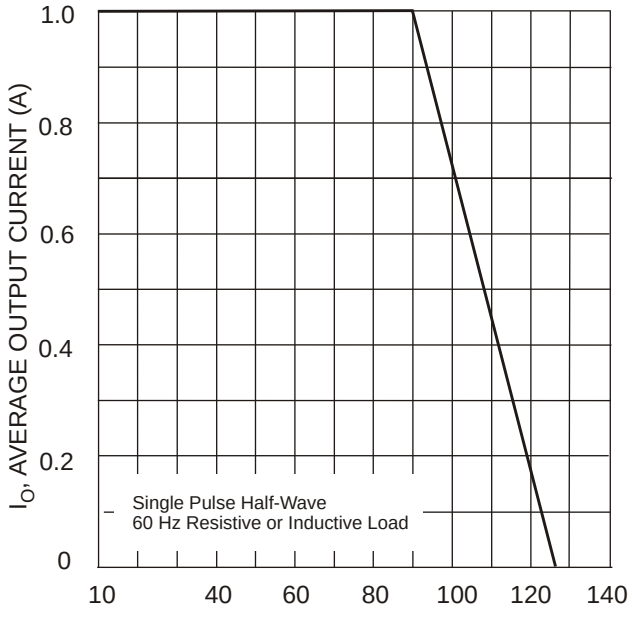


Fig. 1 Forward Current Derating Curve

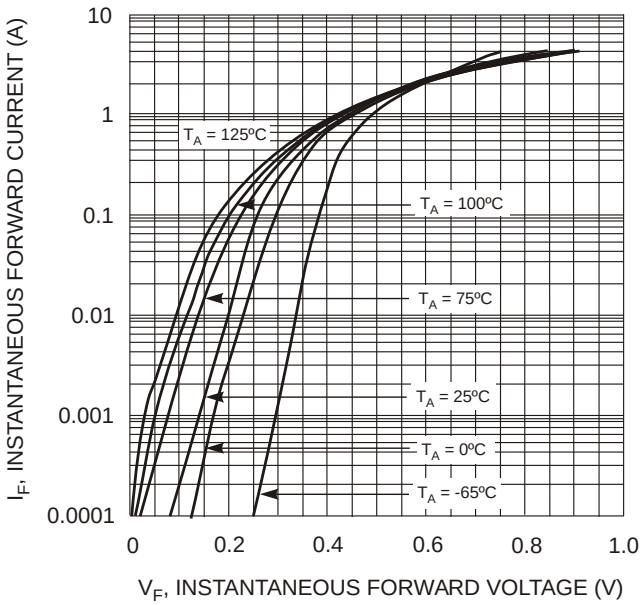


Fig. 2 Typical Forward Characteristics

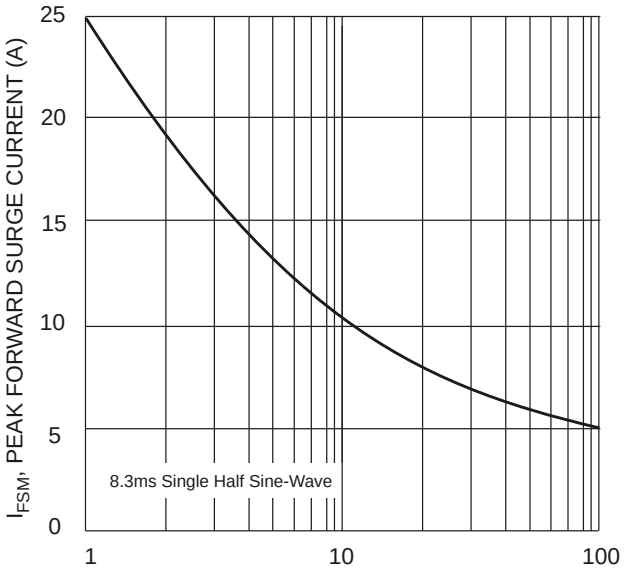


Fig. 3 Maximum Non-Repetitive Peak Fwd Surge Current

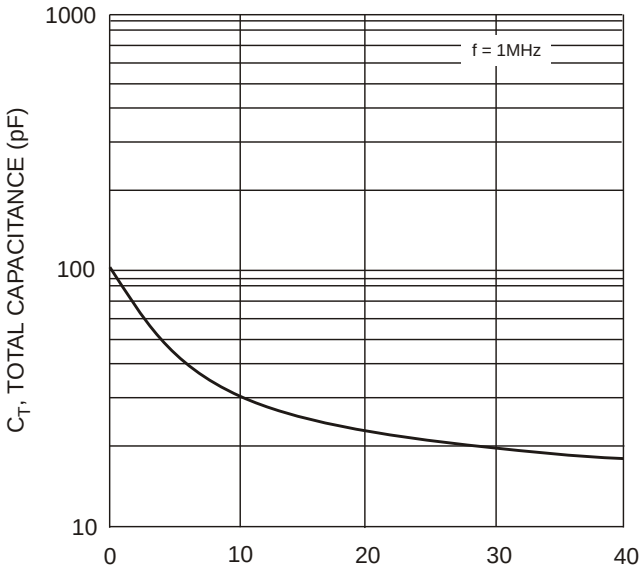


Fig. 4 Typical Total Capacitance

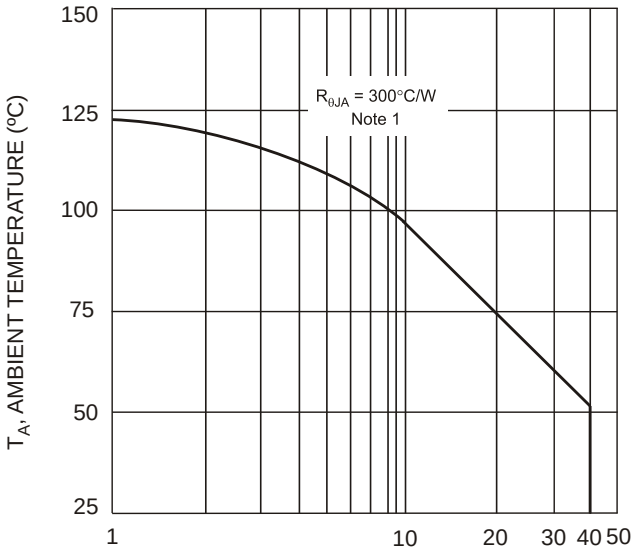


Fig. 5 Typical Safe Operating Area

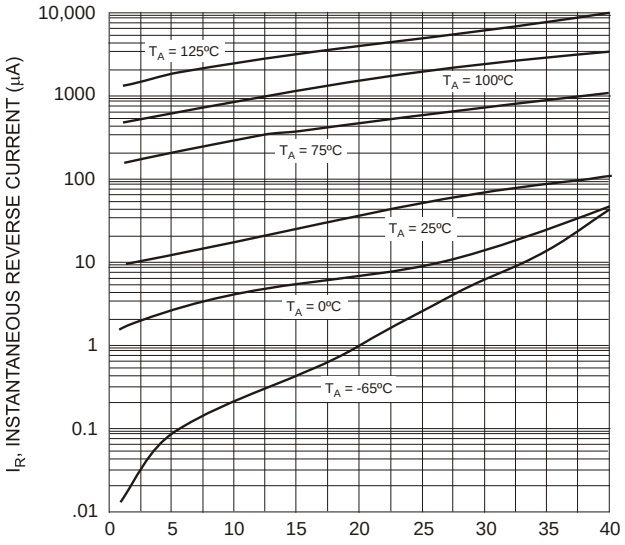


Fig. 6 Typical Reverse Characteristics

Ordering Information (Note 4)

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

Notes: 4. For Packaging Details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

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