



### **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, Halogen and Antimony Free, RoHS Compliant (Note 1)
- "Green" Device (Note 4)

#### **Mechanical Data**

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



Top View

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

Single phase, half wave, 60Hz, resistive or inductive load.

Characteristic	Symbol	Value	Unit	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage @ I <sub>R</sub> = DC Blocking Voltage	1.0mA V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	40	V	
RMS Reverse Voltage	V <sub>R(RMS)</sub>	28	V	
Average Rectified Output Current @ TL :	= 90°C I <sub>O</sub>	1.0	A	
Repetitive Peak Forward Current $t_{p \leq} 1 \text{ms}, \delta \leq 0.5$	I <sub>FRM</sub>	1.5	A	
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	25	A	

## **Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 2)	PD	450	mW
Typical Thermal Resistance Junction to Ambient (Note 2)	R <sub>θJA</sub>	222	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +125	°C

### Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 3)	V <sub>(BR)R</sub>	40	_	_	V	I <sub>R</sub> = 1.0mA
		_	_	0.320		$I_{F} = 0.1A$
Forward Voltage	VF		_	0.450	V	$I_F = 1.0A$
		—	—	0.750		I <sub>F</sub> = 3.0A
		_	_	1.0	mA	$V_R = 40V, T_A = 25^{\circ}C$
			_	10	mA	$V_R = 40V, T_A = 100^{\circ}C$
Reverse Leakage Current (Note 3)			10	50	μΑ	$V_{R} = 4V, T_{A} = 25^{\circ}C$
Reverse Leakage Current (Note 3)	I <sub>R</sub>		1	2	mA	$V_{R} = 4V, T_{A} = 100^{\circ}C$
			15	75	μA	V <sub>R</sub> = 6V, T <sub>A</sub> = 25°C
		_	1.5	3	mA	V <sub>R</sub> = 6V, T <sub>A</sub> = 100°C
Total Capacitance	CT	_	50	60	pF	$V_{R} = 4V, f = 1.0MHz$

Notes: 1. No purposefully added lead. Halogen and Antimony Free.

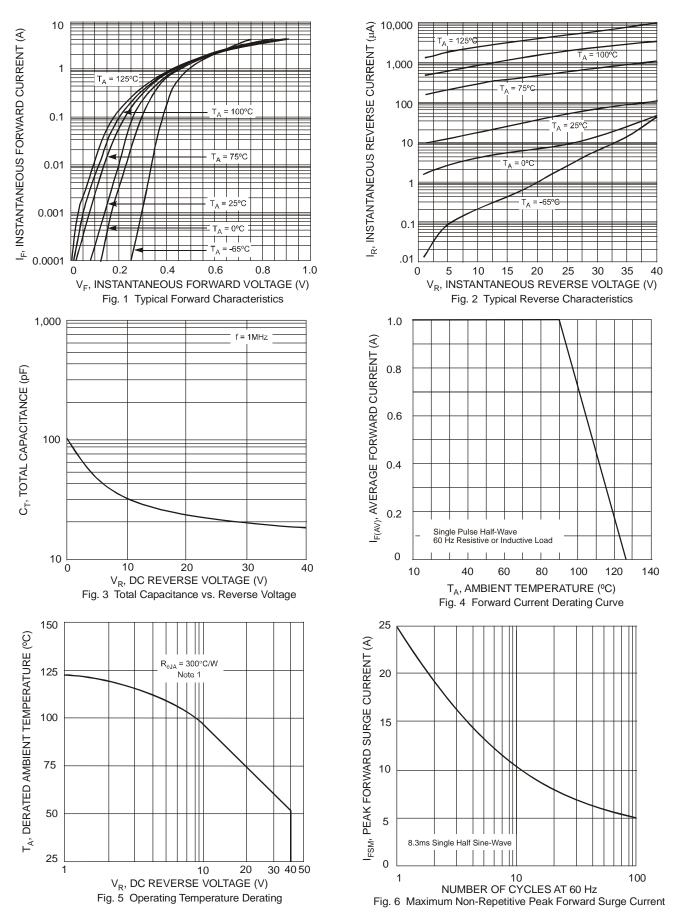
2. Device mounted on FR-4 PC Board, 2"x2", 2 oz. Copper, single sided, Cathode pad dimensions 0.75"x1.0", Anode pad dimensions 0.25"x1.0".

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

 Product manufactured with Data Code V9 (week 33, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date Code V9 are built with Non-Green Molding Compound and may contain Halogens or Sb<sub>2</sub>O<sub>3</sub> Fire Retardants.



## 1N5819HW



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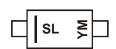


## Ordering Information (Note 5)

Part Number	Case	Packaging
1N5819HW-7-F	SOD-123	3000/Tape & Reel

Notes: 5. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

# **Marking Information**

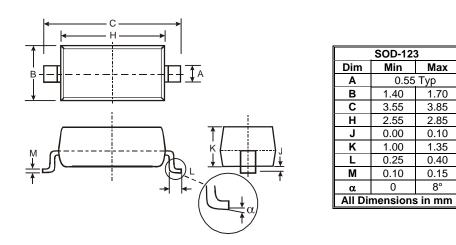


SL = Product Type Marking Code YM = Date Code Marking Y = Year (ex: N = 2002) M = Month (ex: 9 = September)

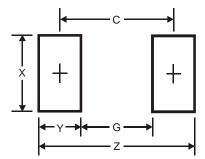
Date Code Key

Year	2002	2003	2004	2005	200	6 2	007	20	08	2009	2010	2011	2012
Code	Ν	Р	R	S	Т		U	١	V	W	Х	Y	Z
Month	Jan	Feb	Mar	Apr	Мау	Jun	Ju	μ	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	7	8	9	0	Ν	D

## **Package Outline Dimensions**



# Suggested Pad Layout



Dimensions	Value (in mm)
Z	4.9
G	2.5
Х	0.7
Y	1.2
С	3.7

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