



#### SURFACE MOUNT SCHOTTKY BARRIER DIODE

### **Features**

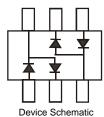
- · Fast Switching Speed
- Ultra-Small Surface Mount Package
- For General Purpose Switching Applications
- High Conductance
- Lead Free/RoHS Compliant (Note 3)
- "Green" Device (Note 4 and 5)



Top View

## **Mechanical Data**

- Case: SOT-26
- Case Material: Molded Plastic, "Green" Molding Compound, Note 6. UL Flammability Classification 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Copper leadframe).
- Polarity: See Diagram
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.016 grams (approximate)



# **Maximum Ratings** @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic		Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>R</sub> WM V <sub>R</sub>	45	V	
RMS Reverse Voltage		V <sub>R(RMS)</sub>	40	V
Forward Continuous Current (Note 1)		I <sub>FM</sub>	100	mA
Forward Surge Current	@ t < 8.3ms	I <sub>FSM</sub>	1.0	A

#### **Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1)	$P_{D}$	225	mW
Thermal Resistance Junction to Ambient Air (Note 1)	$R_{ hetaJA}$	444	°C/W
Operating and Storage Temperature Range	$T_J$ , $T_{STG}$	-40 to +125	°C

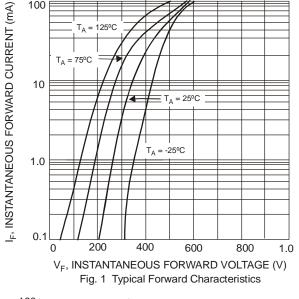
### **Electrical Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 2)	$V_{(BR)R}$	45	_	_	_	$I_R = 100 \mu A$
Forward Voltage	$V_{F}$	_	370	450	mV	$I_F = 10mA$
Reverse Leakage Current (Note 2)	I <sub>R</sub>	_	0.07	1.0	μΑ	V <sub>R</sub> = 10V
Total Capacitance	C <sub>T</sub>	_	6.0	_	pF	$V_R = 10V, f = 1.0MHz$

#### Notes:

- 1. Device mounted on FR-5 PCB 1.0 x 0.75 x 0.062 inch pad layout as shown on Diodes, Inc. suggested pad layout AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
- 2. Short duration pulse test used to minimize self-heating effect.
- 3. No purposefully added lead.
- 4. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead\_free/index.php.
- Product manufactured with Date Code 0627 (week 27, 2006) and newer are built with Green Molding Compound. Product manufactured prior to Date Code 0627 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.





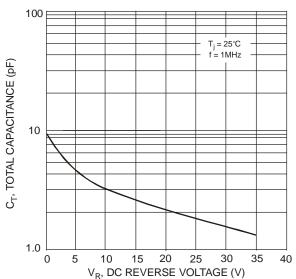
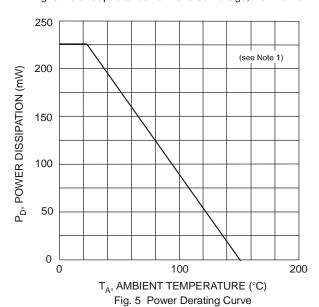


Fig. 3 Total Capacitance vs. Reverse Voltage, Per Element



1,000

T<sub>A</sub> = 125°C

T<sub>A</sub> = 75°C

T<sub>A</sub> = 75°C

T<sub>A</sub> = 25°C

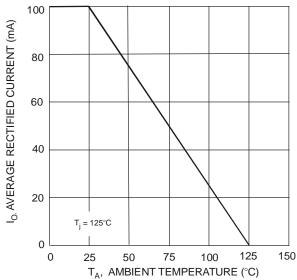


Fig. 4 Forward Current Derating Curve (Per Element)

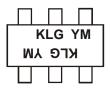


### Ordering Information (Notes 5 & 6)

Part Number	Case	Packaging
SDM10M45SD-7-F	SOT-26	3000/Tape & Reel

Notes: 6. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

## **Marking Information**



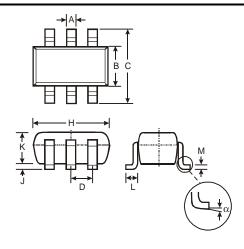
KLG = Product Type Marking Code YM = Date Code Marking

Y = Year ex: P = 2003 M = Month ex: 9 = September

Date Code Key

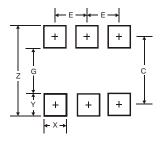
Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Code	Р	R	S	Т	U	V	W	Х	Υ	Z	Α	В	С
Month	Jan	Feb	Mar	Apr	Ma	y Jı	ın	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	(	6	7	8	9	0	N	D

### **Package Outline Dimensions**



SOT-26						
Dim	Min	Max	Тур			
Α	0.35	0.50	0.38			
В	1.50	1.70	1.60			
С	2.70	3.00	2.80			
D	_		0.95			
Н	2.90	3.10	3.00			
J	0.013	0.10	0.05			
K	1.00	1.30	1.10			
L	0.35	0.55	0.40			
M	0.10	0.20	0.15			
α	0°	8°	_			
All Dimensions in mm						

# **Suggested Pad Layout**



Dimensions	Value (in mm)
Z	3.20
G	1.60
Х	0.55
Y	0.80
С	2.40
Е	0.95

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