

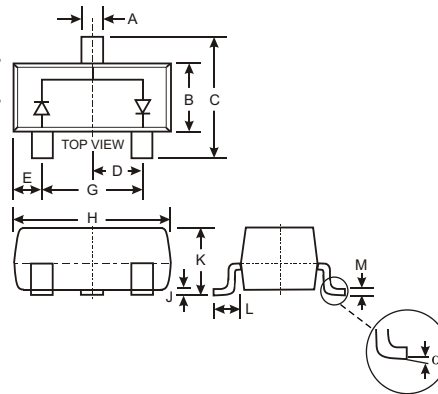
NEW PRODUCT

### Features

- Very Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- High Conductance

### Mechanical Data

- Case: SOT-23, Plastic
- Case material - UL Flammability Rating Classification 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Polarity: See Diagram
- Leads: Solderable per MIL-STD-202, Method 208
- Marking: Date Code and Type Code
- Type Code: KSW
- Weight: 0.004 grams (approx.)
- Ordering Information: See Page 3



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
E	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.85	0.80
α	0°	8°
All Dimensions in mm		

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

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

Characteristic	Symbol	SDM40E20LS	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	20	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>R</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	14	V
Forward Continuous Current (Note 1)	I <sub>FM</sub>	0.4	A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	2	A
Power Dissipation (Note 1)	P <sub>d</sub>	225	mW
Typical Thermal Resistance Junction to Ambient (Note 1)	R <sub>θJA</sub>	444	°C/W
Power Dissipation (Note 2)	P <sub>d</sub>	300	mW
Typical Thermal Resistance Junction to Ambient (Note 2)	R <sub>θJA</sub>	333	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +125	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Breakdown Voltage (Note 3)	V <sub>(BR)R</sub>	20	—	—	V	I <sub>R</sub> = 0.5mA
Forward Voltage Drop (Note 3)	V <sub>F</sub>	—	—	0.310 0.430	V	I <sub>F</sub> = 0.1A I <sub>F</sub> = 0.5A
Leakage Current (Note 3)	I <sub>R</sub>	—	—	100 250	μA	V <sub>R</sub> = 10V V <sub>R</sub> = 20V
Total Capacitance	C <sub>T</sub>	—	170	—	pF	f = 1MHz, V <sub>r</sub> = 0VDC

- Notes:
1. Device mounted on FR-5 1.0 x 0.75 x 0.062 inch PCB 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. Device mounted on Alumina PCB, 0.4 inch x 0.3 inch x 0.024 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  3. Short duration test pulse used to minimize self-heating effect.

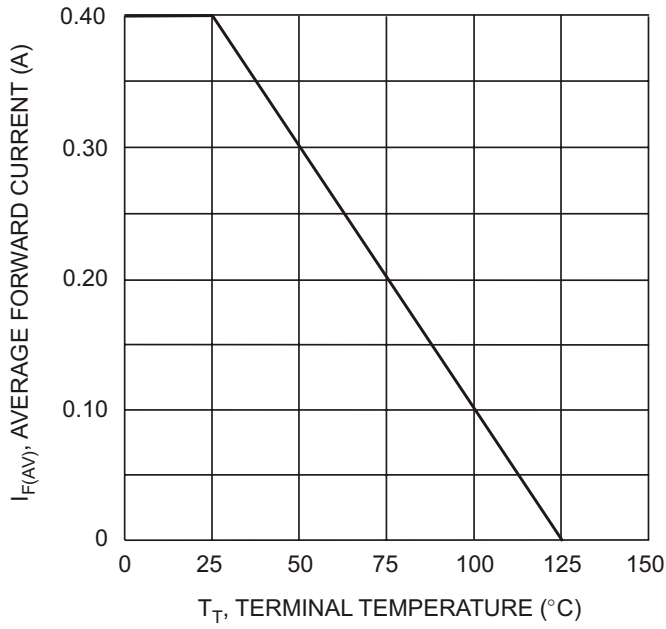


Fig. 1 Forward Current Derating Curve

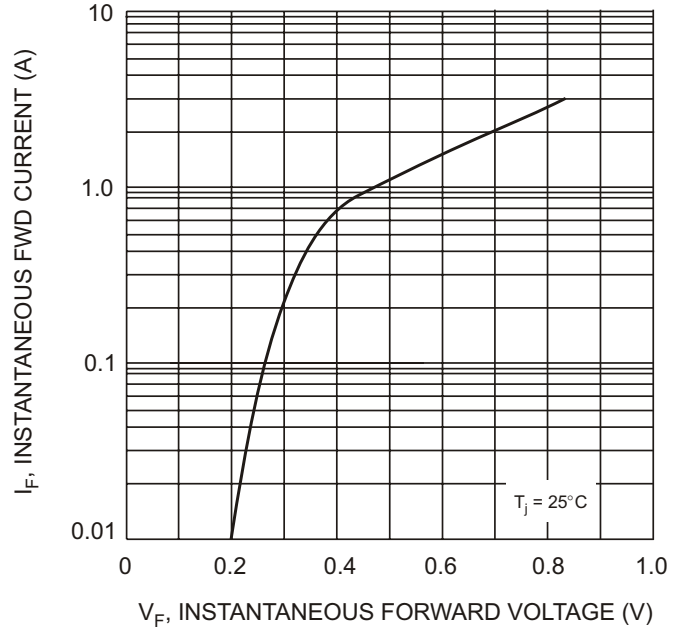


Fig. 2 Typical Forward Characteristics

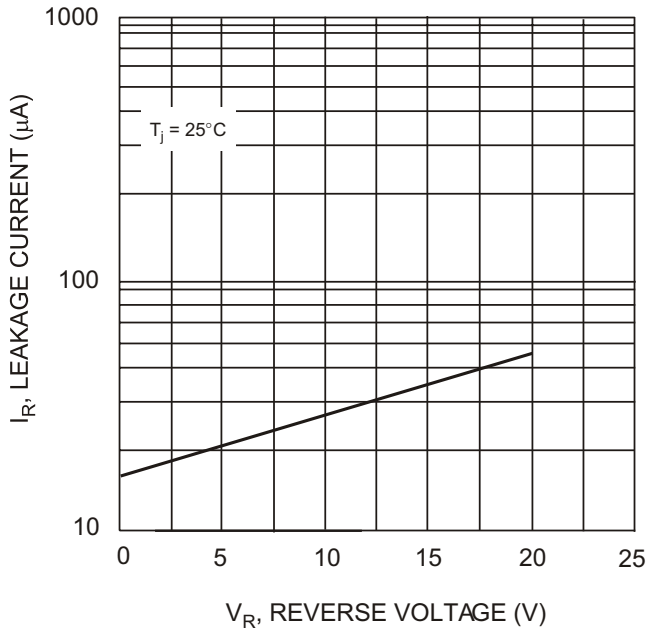


Fig. 3 Typical Reverse Characteristics

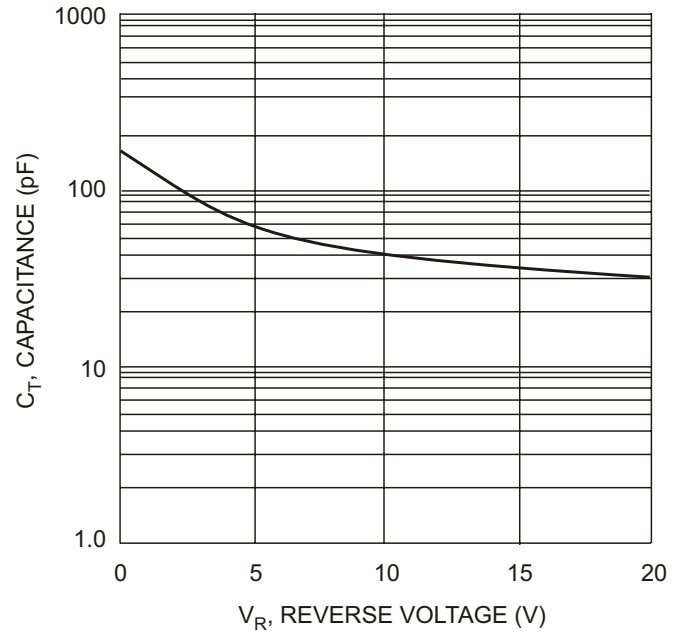
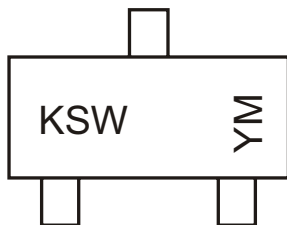


Fig. 4 Typ. Total Capacitance vs Reverse Voltage

**Ordering Information** (Note 4)

Device	Packaging	Shipping
SDM40E20LS-7	SOT-23	3000/Tape & Reel

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

**Marking Information**

KSW = 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
Code	M	N	P	R	S

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