SDM40E20L/S/C

DUAL SURFACE MOUNT SCHOTTKY BARRIER DIODE

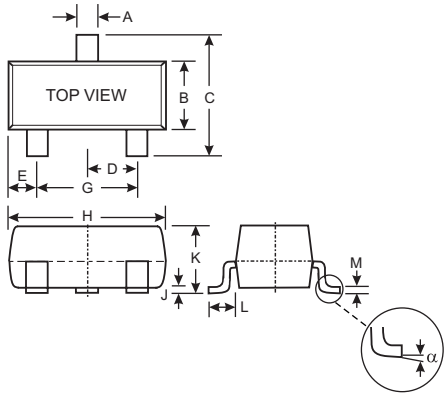
NEW PRODUCT

Features

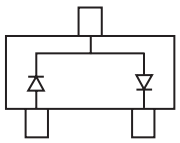
- Very Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- High Conductance
- **Lead Free By Design/RoHS Compliant (Note 4)**
- **"Green Device" (Note 5)**

Mechanical Data

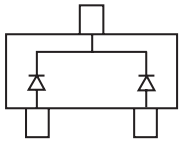
- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Polarity: See Diagram
- Leads: Solderable per MIL-STD-202, Method 208
- Terminals: SDM40E20LS Finish — Matte Tin Finish annealed over Alloy 42 leadframe.
  SDM40E20LC Finish — Matte Tin Finish annealed over CDA194 leadframe. Solderable per MIL-STD-202, Method 208
- Marking: Date Code and Type Code
- Type Code: KSW, KWS
- Ordering Information: See Page 3
- Weight: 0.008 grams (approximate)



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	0.085	0.180
α	0°	8°
All Dimensions in mm		



SDM40E20LS
(KSW Marking Code)



SDM40E20LC
(KWS Marking Code)

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		V_{RRM} V_{RWM} V_R	20	V
RMS Reverse Voltage		$V_{R(RMS)}$	14	V
Forward Continuous Current (Note 1)		I_{FM}	0.4	A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load		I_{FSM}	2	A
Power Dissipation	(Note 1) (Note 2)	P_d	225 300	mW
Typical Thermal Resistance Junction to Ambient	(Note 1) (Note 2)	$R_{\theta JA}$	444 333	°C/W
Operating and Storage Temperature Range		T_j, T_{STG}	-65 to +125	°C

Electrical Characteristics @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Breakdown Voltage (Note 3)	$V_{(BR)R}$	20	—	—	V	I_R = 0.5mA
Forward Voltage Drop	V_F	— —	— —	0.310 0.430	V	I_F = 0.1A I_F = 0.5A
Leakage Current (Note 3)	I_R	— —	— —	100 250	μA	V_R = 10V V_R = 20V
Total Capacitance	C_T	—	120	—	pF	f = 1MHz, V_R = 0VDC

Notes:
1. Device mounted on FR-5 1.0 x 0.75 x 0.062 inch PCB pad layout.
2. Device mounted on Alumina PCB, 0.4 inch x 0.3 inch x 0.024 inch pad layout.
3. Short duration test pulse used to minimize self-heating effect.
4. No purposefully added lead.
5. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.

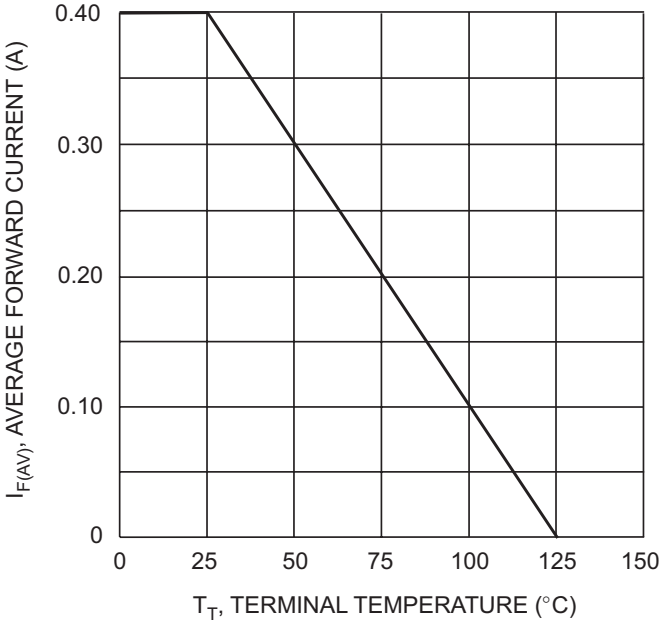


Fig. 1 Forward Current Derating Curve, Per Element

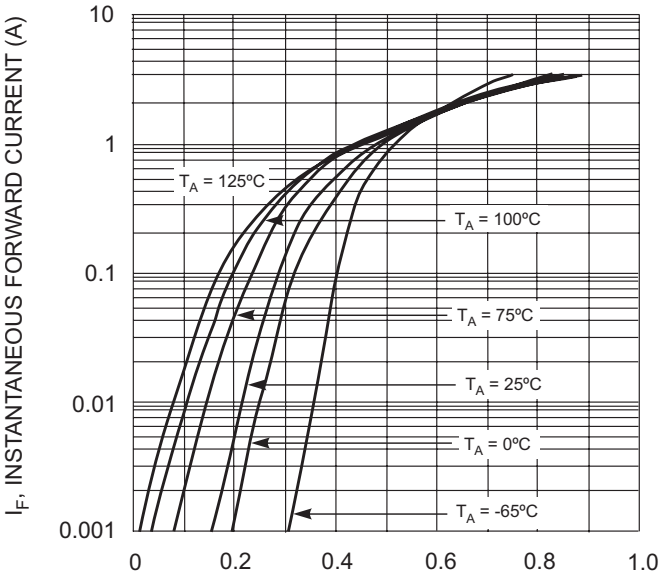


Fig. 2 Typical Forward Characteristics, Per Element

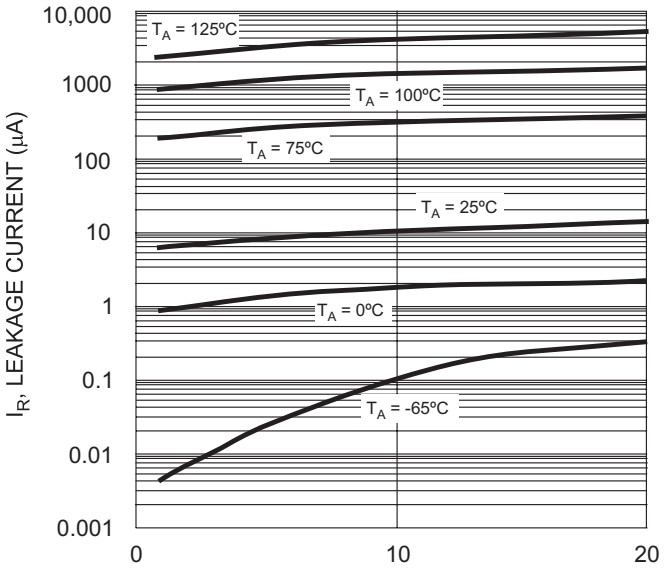


Fig. 3 Typical Reverse Characteristics, Per Element

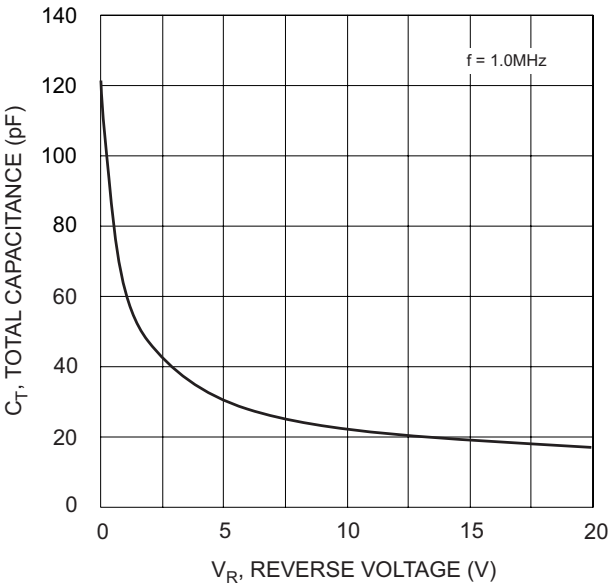


Fig. 4 Typ. Total Capacitance vs Reverse Voltage, Per Element

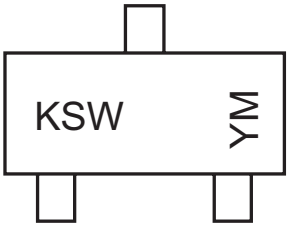
NEW PRODUCT

Ordering Information (Note 6)

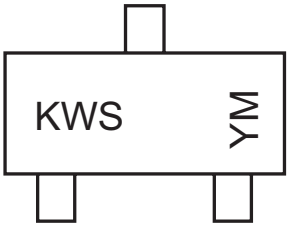
Device	Packaging	Shipping
SDM40E20LS-7	SOT-23	3000/Tape & Reel
SDM40E20LC-7	SOT-23	3000/Tape & Reel

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

Marking Information



KSW = SDM40E20LS Product Type Marking Code
YM = Date Code Marking
Y = Year ex: T = 2006
M = Month ex: 9 = September



KWS = SDM40E20LC Product Type Marking Code
YM = Date Code Marking
Y = Year ex: T = 2006
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Date Code Key

Year	2005	2006	2007	2008	2009	2010	2011	2012
Code	S	T	U	V	W	X	Y	Z

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