# SDM40E20LS

## DUAL SURFACE MOUNT SCHOTTKY BARRIER DIODE

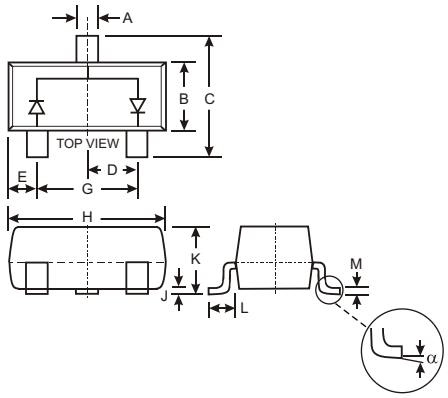
NEW PRODUCT

## 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 @ $T_A$ = 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<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 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<br>8.3ms single half sine-wave superimposed on rated load<br>(JEDEC Method) | $I_{FSM}$ | 2 | A |
| Power Dissipation (Note 1) | $P_d$ | 225 | mW |
| Typical Thermal Resistance Junction to Ambient (Note 1) | $R_{\theta JA}$ | 444 | °C/W |
| Power Dissipation (Note 2) | $P_d$ | 300 | mW |
| Typical Thermal Resistance Junction to Ambient (Note 2) | $R_{\theta JA}$ | 333 | °C/W |
| Operating and Storage Temperature Range | $T_j$, $T_{STG}$ | -55 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 (Note 3) | $V_F$ | —<br>— | —<br>— | 0.310<br>0.430 | V | $I_F$ = 0.1A<br>$I_F$ = 0.5A |
| Leakage Current (Note 3) | $I_R$ | —<br>— | —<br>— | 100<br>250 | μA | $V_R$ = 10V<br>$V_R$ = 20V |
| Total Capacitance | $C_T$ | — | 170 | — | 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 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.

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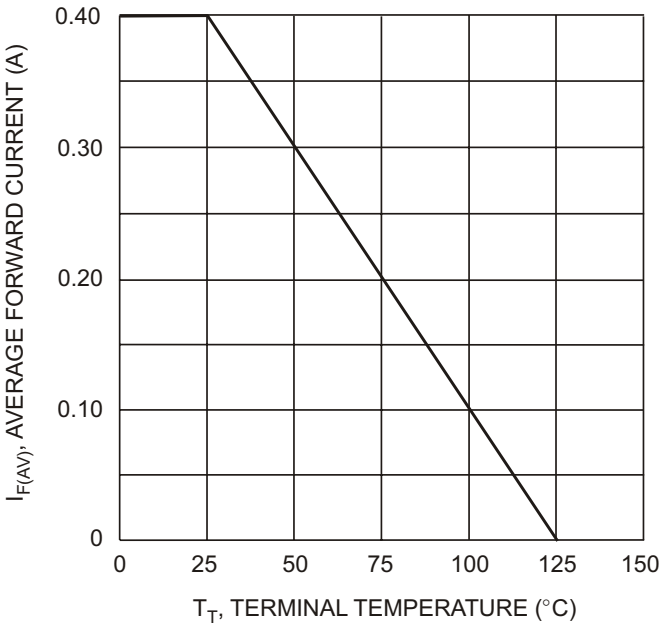


Fig. 1 Forward Current Derating Curve

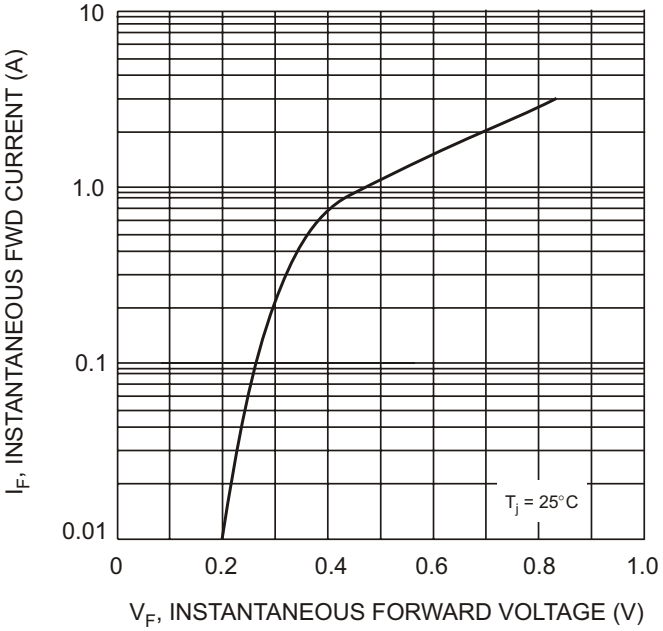


Fig. 2 Typical Forward Characteristics

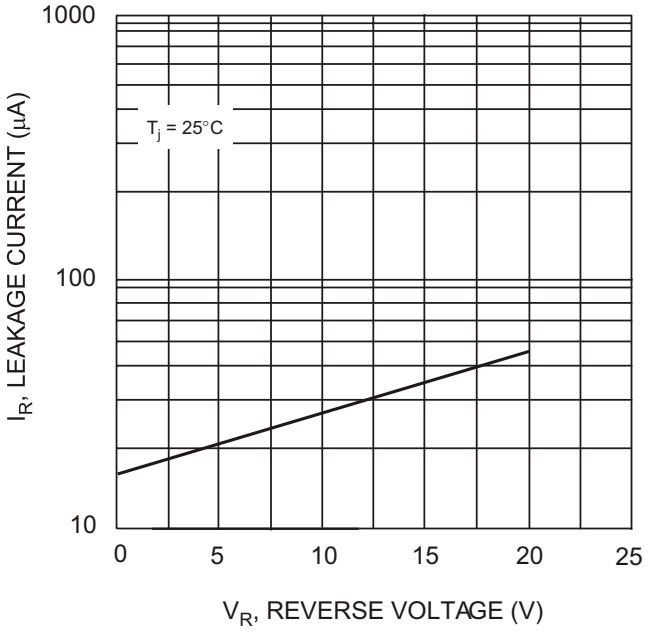


Fig. 3 Typical Reverse Characteristics

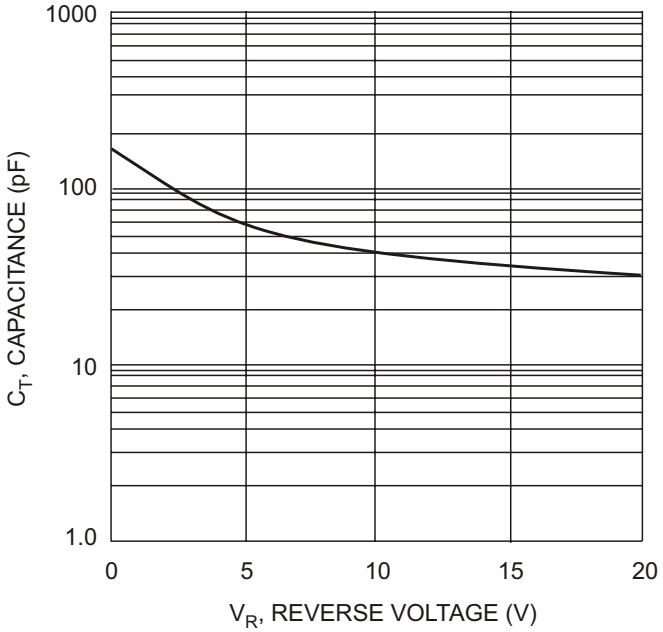


Fig. 4 Typ. Total Capacitance vs Reverse Voltage

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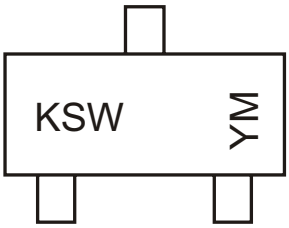
## Ordering Information (Note 4)

| 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 |