

SS16

Surface Mount Schottky Power Rectifier

SMA Power Surface Mount Package

...employing the Schottky Barrier principle in a large area metal-to-silicon power diode. State of the art geometry features epitaxial construction with oxide passivation and metal overlay contact. Ideally suited for low voltage, high frequency rectification, or as free wheeling and polarity diodes in surface mount applications where compact size and weight are critical to the system.

- Small Compact Surface Mountable Package with J-Bent Leads
- Rectangular Package for Automated Handling
- Highly Stable Oxide Passivated Junction
- Very Low Forward Voltage Drop
- Guardring for Stress Protection

Mechanical Characteristics:

- Case: Epoxy, Molded, Epoxy Meets UL94, VO
- Weight: 70 mg (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped in 12 mm tape, 5000 units per 13 inch reel
- Polarity: Cathode Lead Indicated by Polarity Band
- ESD Ratings: Machine Model = C
Human Body Model = 3B
- Device Meets MSL 1 Requirements
- Marking: SS16

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|---|---------------------------------|-------------|------------------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | 60 | V |
| Average Rectified Forward Current (At Rated V_R , $T_C = 105^\circ\text{C}$) | I_O | 1.0 | A |
| Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz) | I_{FSM} | 40 | A |
| Storage/Operating Case Temperature | T_{stg} , T_C | -55 to +150 | °C |
| Operating Junction Temperature | T_J | -55 to +150 | °C |
| Voltage Rate of Change (Rated V_R , $T_J = 25^\circ\text{C}$) | dv/dt | 10,000 | V/ μs |



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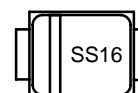
<http://onsemi.com>

**SCHOTTKY BARRIER
RECTIFIER
1.0 AMPERES
60 VOLTS**



SMA
CASE 403D
PLASTIC

MARKING DIAGRAM



SS16 = Device Code

ORDERING INFORMATION

| Device | Package | Shipping† |
|--------|---------|------------------|
| SS16T3 | SMA | 5000/Tape & Reel |

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

SS16

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Value | Unit |
|---|-----------------|-------|-----------------------------|
| Thermal Resistance – Junction–to–Lead (Note 1) | $R_{\theta JL}$ | 35 | $^{\circ}\text{C}/\text{W}$ |
| Thermal Resistance – Junction–to–Ambient (Note 1) | $R_{\theta JA}$ | 86 | |

ELECTRICAL CHARACTERISTICS

| | | | | |
|--|-------|----------------------------|-----------------------------|-------|
| Maximum Instantaneous Forward Voltage (Note 2) ($I_F = 0.1 \text{ A}$) ($I_F = 1.0 \text{ A}$) | V_F | $T_J = 25^{\circ}\text{C}$ | | Volts |
| | | 0.51 | 0.72 | |
| Maximum Instantaneous Reverse Current ($V_R = 60 \text{ V}$) | I_R | $T_J = 25^{\circ}\text{C}$ | $T_J = 100^{\circ}\text{C}$ | mA |
| | | 0.2 | 5.0 | |

1. Mounted on 2" Square PC Board with 1" Square Total Pad Size, PC Board FR4.
2. Pulse Test: Pulse Width $\leq 250 \mu\text{s}$, Duty Cycle $\leq 2.0\%$.

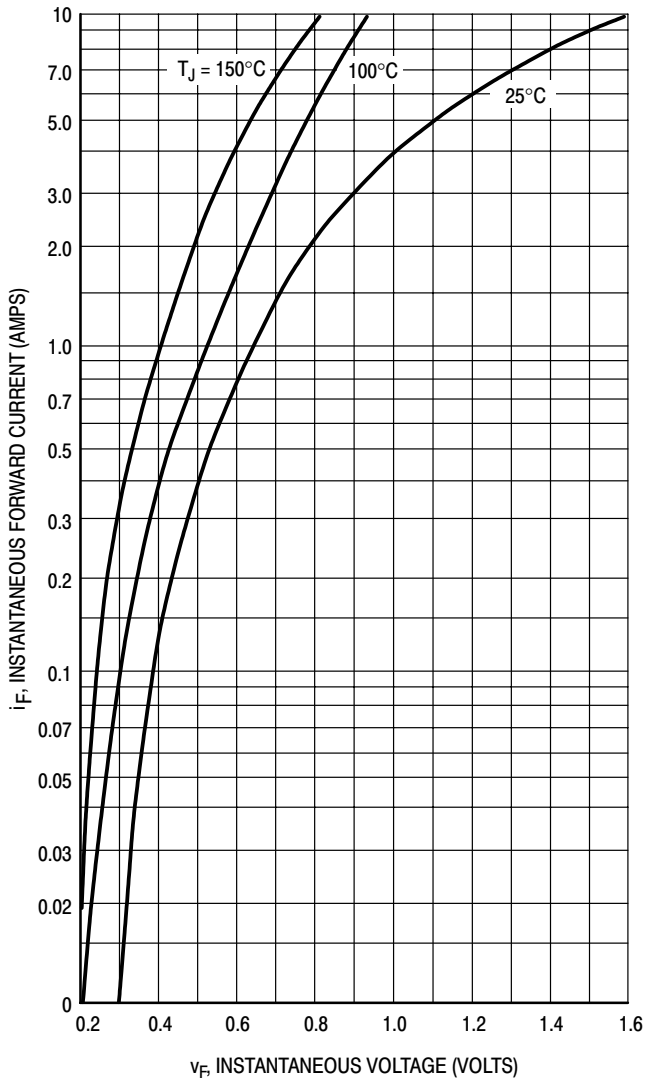


Figure 1. Typical Forward Voltage

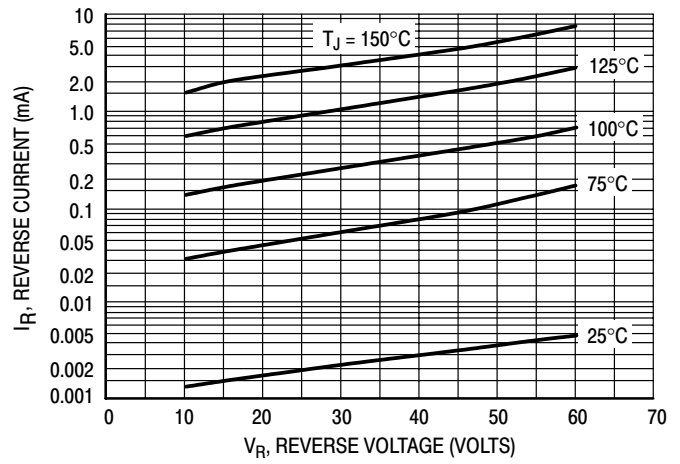


Figure 2. Typical Reverse Current*

*The curves shown are typical for the highest voltage device in the voltage grouping. Typical reverse current for lower voltage selections can be estimated from these same curves if V_R is sufficiently below rated V_R .

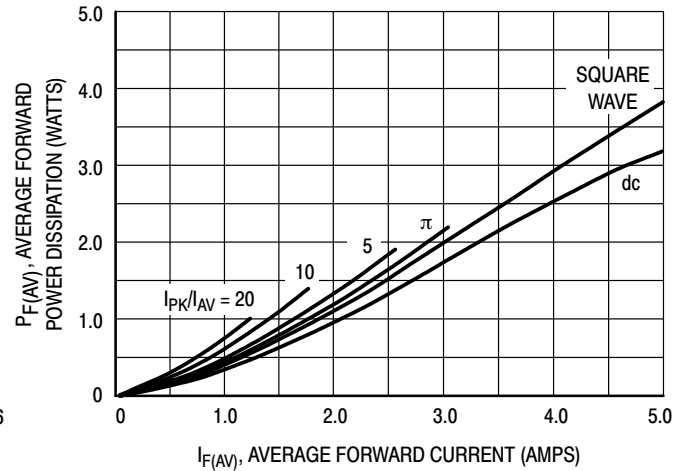


Figure 3. Forward Power Dissipation

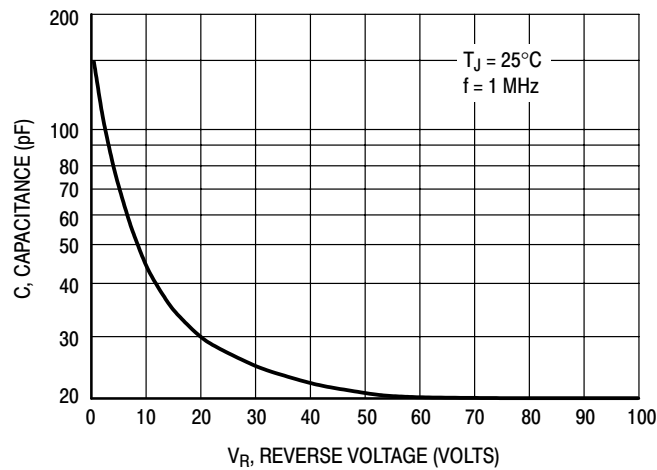
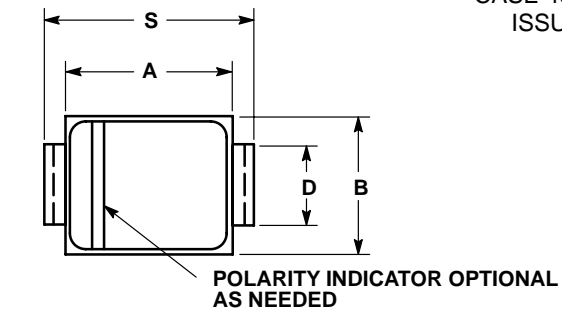


Figure 4. Typical Capacitance

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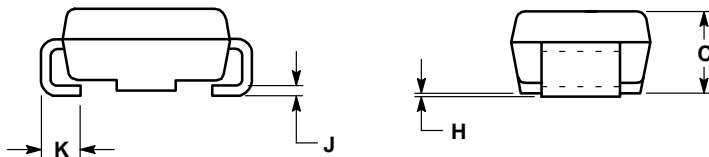
PACKAGE DIMENSIONS

SMA PLASTIC PACKAGE CASE 403D-02 ISSUE A

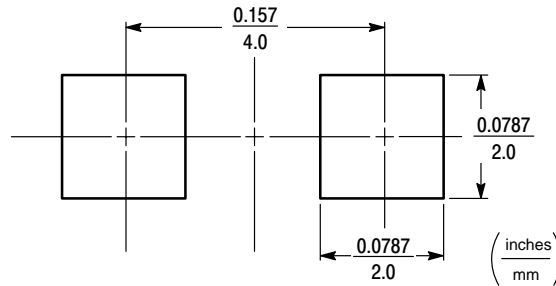


- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.
 3. 403D-01 OBSOLETE, NEW STANDARD IS 403D-02.


| DIM | INCHES | | MILLIMETERS | |
|-----|--------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A | 0.160 | 0.180 | 4.06 | 4.57 |
| B | 0.090 | 0.115 | 2.29 | 2.92 |
| C | 0.075 | 0.095 | 1.91 | 2.41 |
| D | 0.050 | 0.064 | 1.27 | 1.63 |
| H | 0.002 | 0.006 | 0.05 | 0.15 |
| J | 0.006 | 0.016 | 0.15 | 0.41 |
| K | 0.030 | 0.060 | 0.76 | 1.52 |
| S | 0.190 | 0.220 | 4.83 | 5.59 |



SOLDERING FOOTPRINT*



*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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