



PFC Device Corporation

P3V40F-A

3A 40V MOS Schottky Rectifier

Major ratings and characteristics

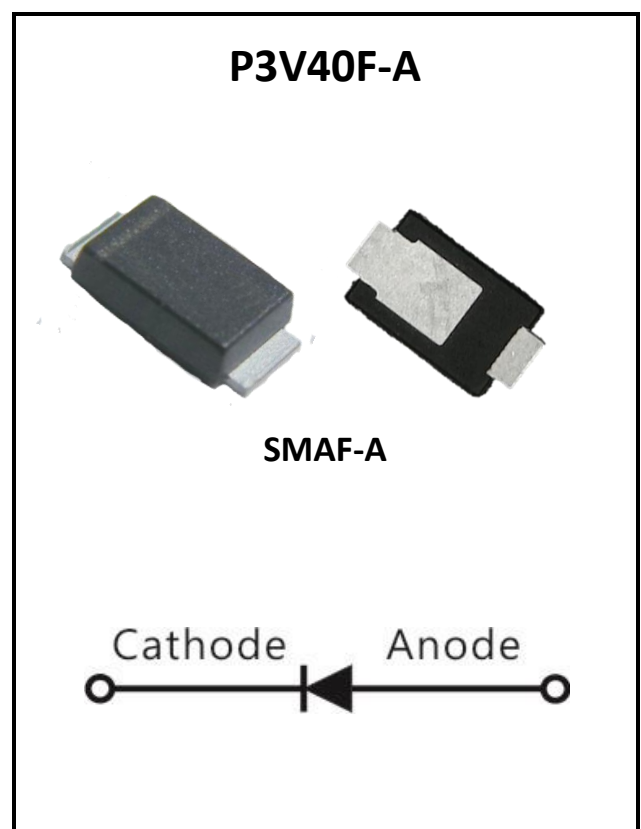
| Characteristics | Values | Units |
|--------------------------------------|-------------|------------|
| $I_{F(AV)}$ Rectangular Waveform | 3 | A |
| V_{RRM} | 40 | V |
| $V_F@ 3A, T_j=125^\circ C$ | 0.36 | V, typ. |
| T_j Operating Junction Temperature | -65 to +150 | $^\circ C$ |

Features

- Low Forward Voltage Drop
- Reliable High Temperature Operation
- Softest, fast switching capability
- 150 $^\circ C$ Operating Junction Temperature
- Lead Free Finish, RoHS Compliant
- Green Molding Compound (No Br, Sb)

Typical Applications

Device optimized for ultra-low forward voltage drop to maximize efficiency in Power Supply applications



1. Characteristics

Maximum Ratings Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Values | Units |
|--|----------------|--------------|-----------------------------|
| DC Blocking Voltage | V_{RM} | 40 | Volts |
| Working Peak Reverse Voltage | V_{RWM} | | |
| Peak Repetitive Reverse Voltage | V_{RRM} | | |
| Average Rectified Forward Current Per device (Rated VR-20Khz Square Wave) - 50% duty cycle | I_o | 3 | Amps |
| Peak Forward Surge Current - 1/2 60hz | I_{FSM} | 100 | Amps |
| Peak Repetitive Reverse Surge Current (2uS-1Khz) | I_{RRM} | 2 | Amps |
| Typical Thermal Resistance | $R\theta_{JL}$ | 30 | $^\circ\text{C} / \text{W}$ |
| Thermal Resistance junction to Ambient Note (1) | | | |
| Maximum Rate of Voltage Change (at Rated VR) | dv/dt | 10000 | V/uS |
| Operating Junction Temperature | T_J | - 65 to +150 | $^\circ\text{C}$ |
| Storage Junction Temperature | T_{STG} | - 65 to +150 | |

Electrical Characteristics - (per leg) ($T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter | Test Conditions | Symbol | Typ. | Max. | Units |
|-------------------------------|---------------------|---------|--------------------------|-------|---------------|
| Instantaneous Forward Voltage | $I_F = 3 \text{ A}$ | V_F^* | ----- | 0.44 | Volts |
| | | | $T_J = 25^\circ\text{C}$ | 0.36 | |
| Instantaneous Reverse Current | At V_{RM} | I_R^* | ----- | 500 | μA |
| | | | $T_J = 25^\circ\text{C}$ | ----- | 100 |

* Pulse width < 300 uS, Duty cycle < 2%

Note 1. FR-4 PCB, 2 oz Copper. Minimum recommended pad layout



2. Characteristics Curves

Ratings and Characteristics Curves

(TA = 25°C unless otherwise specified)

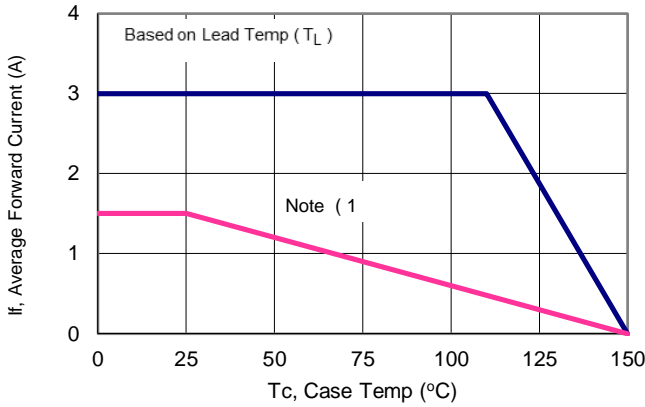


Figure 1: Current Derating, Case

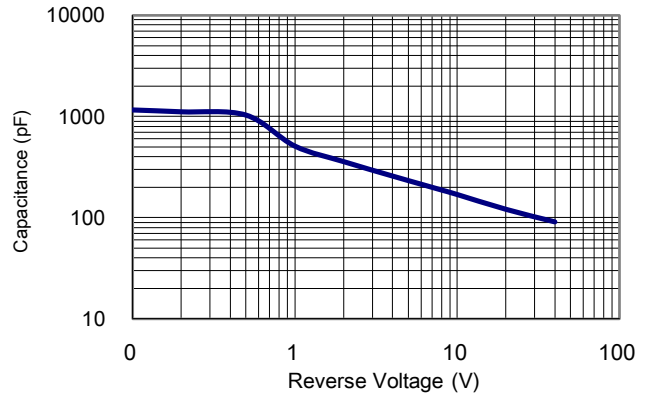


Figure 2: Typical Junction Capacitance

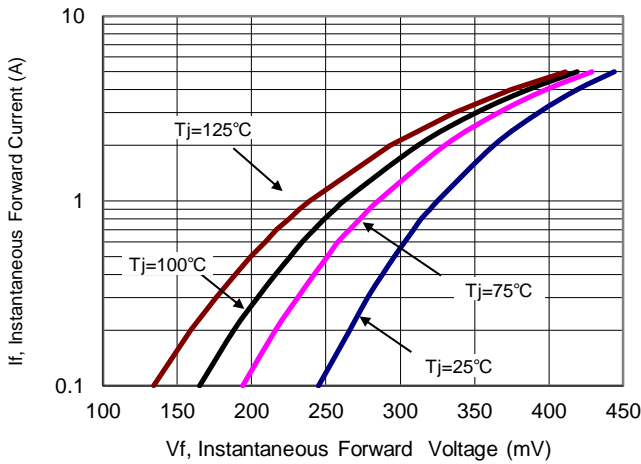


Figure 3: Typical Forward Voltage

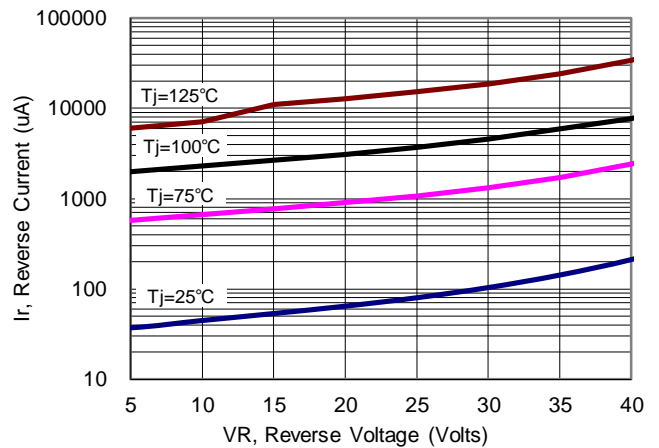
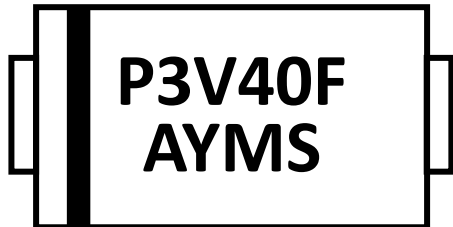


Figure 4: Typical Reverse Current



3. Marking information

Top Marking Rule



P3V40F = Product Type Marking Code

A = Assembly Code

YM = Date Code

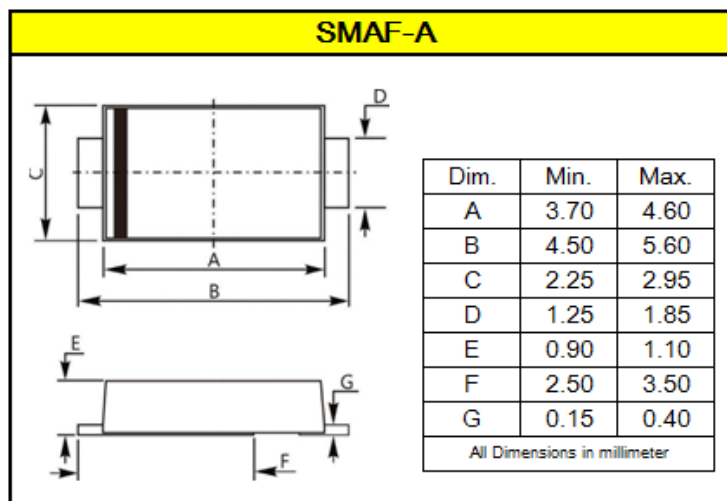
Y = Last one digits of year

M = Month code

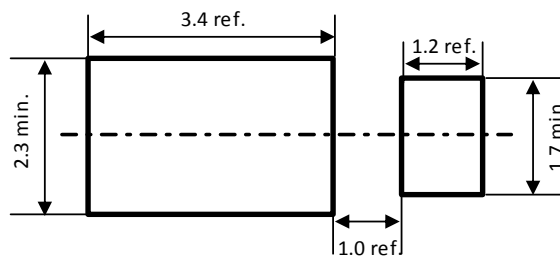
S = Series Number

4. Package information

Suggested Package Outline Dimensions millimeters



Mounting pad Outline Dimensions millimeters



5. Packing and Ordering information

Packing information millimeters



| Item | Symbol | Dimension |
|-----------------------|--------|-----------|
| Carrier width | A | 2.79±0.15 |
| Carrier length | B | 5.10±0.15 |
| Carrier depth | C | 1.40±0.15 |
| Sprocket hole | d | 1.55±0.10 |
| Reel outside diameter | D | 330.0±1.0 |
| Reel inner diameter | D1 | 75±1.0 |
| Feed hole diameter | D2 | 13.5±1.0 |
| Stocket hole position | E | 1.75±0.10 |
| Punch hole position | F | 5.5±0.05 |
| Punch hole pitch | P | 4.0±0.10 |
| Sprocket hole pitch | P0 | 4.0±0.10 |
| Embossment center | P1 | 2.0±0.10 |
| Total tape thickness | T | 0.3±0.10 |
| Tape width | W | 12.0±0.15 |
| Reel width | W1 | 18.1±1.5 |

Ordering information

| Part Number | Package | Base Quantity | Delivery mode |
|-------------|-------------------------|---------------|------------------------------------|
| P3V40F-A | Flat SMA with heat sink | 10000 | 13" diameter plastic tape and reel |

Mechanical

- Case: SMAF-A (Flat SMA with heat sink)
- Molder Plastic: UL Flammability Classification Rating 94V-0
- Device Weight : 0.0012 ounces (0.033grams) – SMAF-A

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