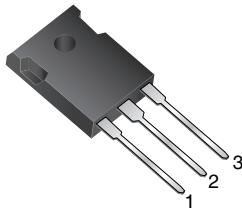
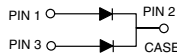


## Dual Common Cathode Schottky Rectifier


**TO-3P (TO-247AD)**


### FEATURES

- Power pack
- Guardring for overvoltage protection
- Lower power losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### TYPICAL APPLICATIONS

For use in low voltage, high frequency rectifier of switching mode power supplies, freewheeling diodes, DC/DC converters, or polarity protection application.

### MECHANICAL DATA

**Case:** TO-3P (TO-247AD)

Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS-compliant, commercial grade

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

**Polarity:** as marked

**Mounting Torque:** 10 in-lbs maximum

| PRIMARY CHARACTERISTICS |                  |
|-------------------------|------------------|
| $I_{F(AV)}$             | 30 A             |
| $V_{RRM}$               | 45 V             |
| $I_{FSM}$               | 400 A            |
| $V_F$                   | 0.47 V           |
| $T_J$ max.              | 150 °C           |
| Package                 | TO-3P (TO-247AD) |
| Circuit configuration   | Common cathode   |

| MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)                               |                 |             |            |
|--|-----------------|-------------|------------|
| PARAMETER  | SYMBOL          | SD241P      | UNIT       |
| Maximum repetitive peak reverse voltage $T_C = 25\text{ °C}$                                 | $V_{RRM}$       | 45          | V          |
| Maximum blocking voltage $T_C = 25\text{ °C}$  | $V_{DC}$        | 45          | V          |
| Maximum working peak reverse voltage   | $V_{RWM}$       | 35          | V          |
| Maximum average forward rectified current at $T_C = 105\text{ °C}$                           | $I_{F(AV)}$     | 30          | A          |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode | $I_{FSM}$       | 400         | A          |
| Peak repetitive reverse surge current per diode  | $I_{RSM}^{(1)}$ | 2.0         | A          |
| Voltage rate of change $V_R = 35\text{ V}$   | $dV/dt$         | 10 000      | V/ $\mu$ s |
| Operating junction temperature range   | $T_J$           | -65 to +150 | °C         |
| Storage temperature range  | $T_{STG}$       | -65 to +175 | °C         |

**Note**

<sup>(1)</sup> 2.0  $\mu$ s pulse width,  $f = 1.0\text{ kHz}$

| ELECTRICAL CHARACTERISTICS ( $T_A = 25\text{ °C}$ unless otherwise noted) |             |                                       |                       |        |      |
|---|-------------|---------------------------------------|-----------------------|--------|------|
| PARAMETER   | SYMBOL      | TEST CONDITIONS                       |                       | SD241P | UNIT |
|   |             | Maximum instantaneous forward voltage | $V_F^{(1)}$           |        |      |
|   |             | $I_F = 20\text{ A}$                   | $T_C = 125\text{ °C}$ | 0.60   |      |
| Maximum reverse current at rated $V_R$                                    | $I_R^{(1)}$ | $V_R = 35\text{ V}$                   | $T_C = 25\text{ °C}$  | 1.0    | mA   |
|   |             |                                       | $T_C = 125\text{ °C}$ | 100    | mA   |

**Note**

<sup>(1)</sup> Pulse test: 300  $\mu$ s pulse width, 1 % duty cycle



**THERMAL CHARACTERISTICS** ( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

| PARAMETER  | SYMBOL          | SD241P | UNIT               |
|--|-----------------|--------|--------------------|
| Maximum thermal resistance, junction of case per diode | $R_{\theta JC}$ | 1.4    | $^\circ\text{C/W}$ |

**ORDERING INFORMATION** (Example)

| PACKAGE  | PREFERRED P/N | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
|----------|---------------|-----------------|--------------|---------------|---------------|
| TO-247AD | SD241P-E3/45  | 6.13            | 45           | 30/tube       | Tube          |

**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

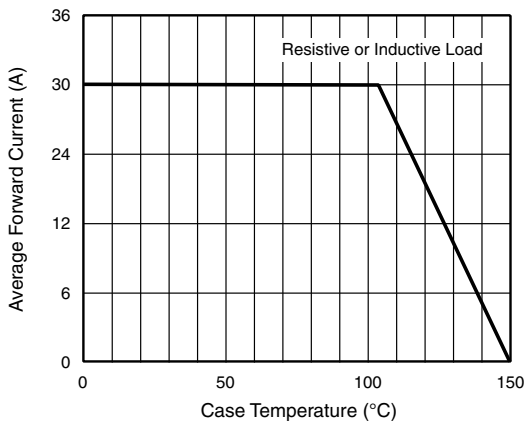


Fig. 1 - Forward Current Derating Curve

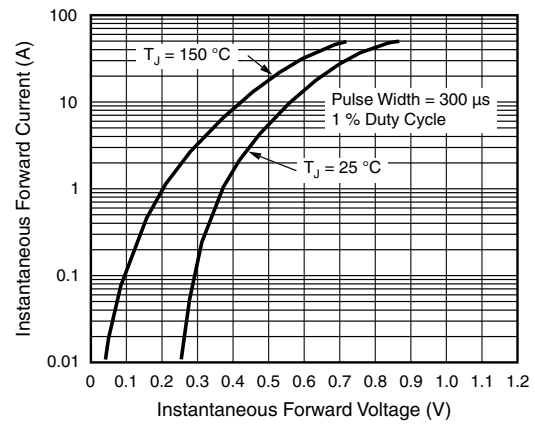


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

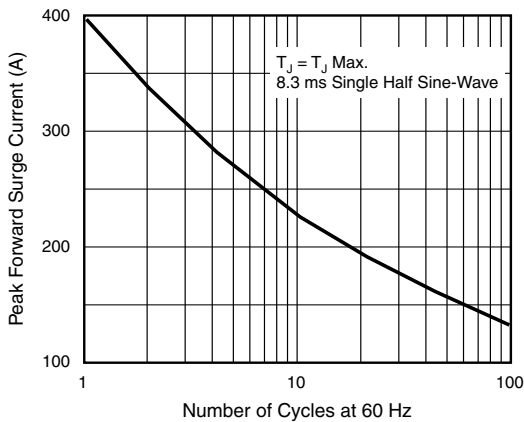


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

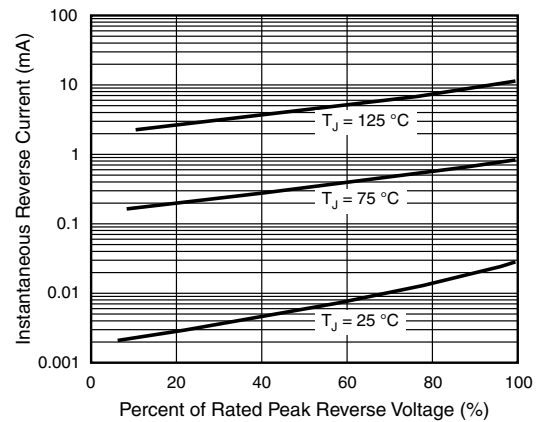


Fig. 4 - Typical Reverse Characteristics Per Diode

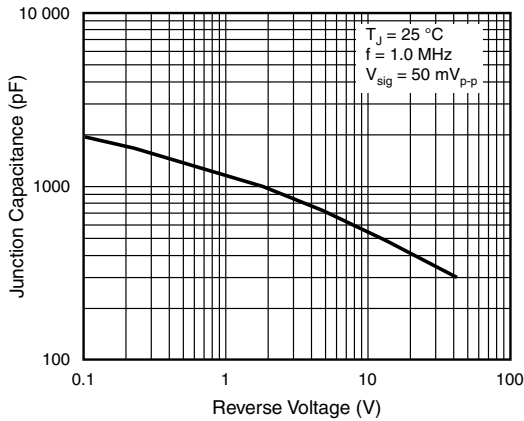


Fig. 5 - Typical Junction Capacitance Per Diode

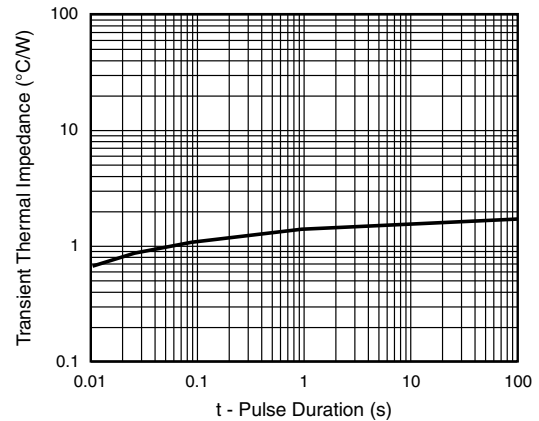
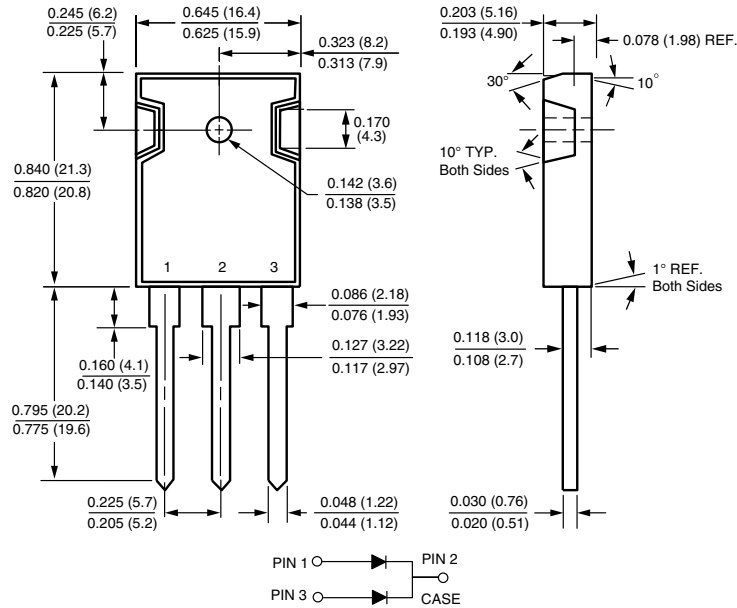


Fig. 6 - Typical Transient Thermal Impedance Per Diode

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**TO-3P (TO-247AD)**





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