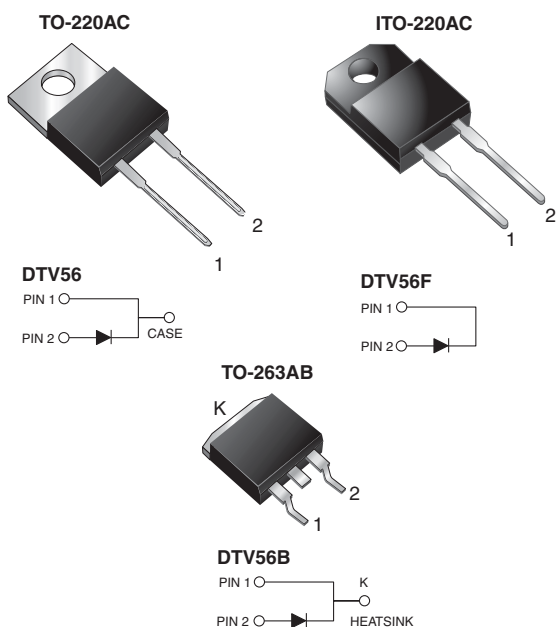




High Voltage Damper Diodes



FEATURES

- Glass passivated chip junction
- High breakdown voltage capability
- Very fast reverse recovery time
- Fast forward recovery time
- High efficiency, low switching losses
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for TO-263AB package)
- Solder dip 260 °C, 40 s (for TO-220AC and ITO-220AC package)
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC



RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in high resolution display TV and monitor horizontal deflection application.

MECHANICAL DATA

Case: TO-220AC, ITO-220AC, TO-263AB

Epoxy meets UL 94 V-0 flammability rating

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

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

PRIMARY CHARACTERISTICS

| | |
|-------------|--------|
| $I_{F(AV)}$ | 10 A |
| V_{RRM} | 1500 V |
| t_{rr} | 135 ns |
| t_{fr} | 350 ns |
| V_F | 1.5 V |

MAXIMUM RATINGS ($T_C = 25\text{ °C}$ unless otherwise noted)

| PARAMETER | SYMBOL | VALUE | UNIT |
|---|----------------|---------------|------|
| Maximum repetitive peak reverse voltage | V_{RRM} | 1500 | V |
| Maximum RMS voltage | V_{RMS} | 1050 | V |
| Maximum DC blocking voltage | V_{DC} | 1500 | V |
| Maximum average forward rectified current (fig. 1) | $I_{F(AV)}$ | 10 | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load at $T_C = 100\text{ °C}$ | I_{FSM} | 130 | A |
| Operating junction and storage temperature range | T_J, T_{STG} | - 55 to + 150 | °C |
| Isolation voltage (ITO-220AC only) from terminal to heatsink $t = 1\text{ min}$ | V_{AC} | 1500 | V |

DTV56, DTV56F, DTV56B



Vishay General Semiconductor

| ELECTRICAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted) | | | | | |
|--|--|-------------------------|-----------------|-------------------------|----------|
| PARAMETER | TEST CONDITIONS | | SYMBOL | VALUE | UNIT |
| Maximum instantaneous forward voltage ⁽¹⁾ | I _F = 6 A | T _J = 25 °C | V _F | 1.8 | V |
| | I _F = 6 A | T _J = 125 °C | | 1.5 | |
| Maximum DC reverse current at V _{RRM} | | | I _R | 100 | μA mA |
| | | | | T _J = 125 °C | |
| Maximum reverse recovery time | I _F = 1.0 A, dI/dt = 50 A/μs, V _R = 30 V, I _{rr} = 0.1 I _{RM} | | t _{rr} | 135 | ns |
| Typical forward recovery time | I _F = 6 A, dI/dt = 48 A/μs, V _{FR} = 3 V | | t _{fr} | 350 | ns |
| Peak forward recovery overshoot voltage | I _F = 6 A, dI/dt = 48 A/μs | typical maximum | V _{FP} | 10 | V |
| | | | | 14 | |

Note:

(1) Pulse test: 300 μs pulse width, 2 % duty cycle

| THERMAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted) | | | | | |
|---|------------------|-------|--------|--------|------|
| PARAMETER | SYMBOL | DTV56 | DTV56B | DTV56F | UNIT |
| Typical thermal resistance from junction to case | R _{θJC} | 2.0 | | 4.0 | °C/W |

| ORDERING INFORMATION (Example) | | | | | |
|--------------------------------|---------------|-----------------|--------------|---------------|---------------|
| PACKAGE | PREFERRED P/N | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| TO-220AC | DTV56-E3/45 | 1.80 | 45 | 50/tube | Tube |
| ITO-220AC | DTV56F-E3/45 | 1.95 | 45 | 50/tube | Tube |
| TO-263AB | DTV56B-E3/45 | 1.77 | 45 | 50/tube | Tube |
| TO-263AB | DTV56B-E3/81 | 1.77 | 81 | 800/reel | Tape and reel |

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

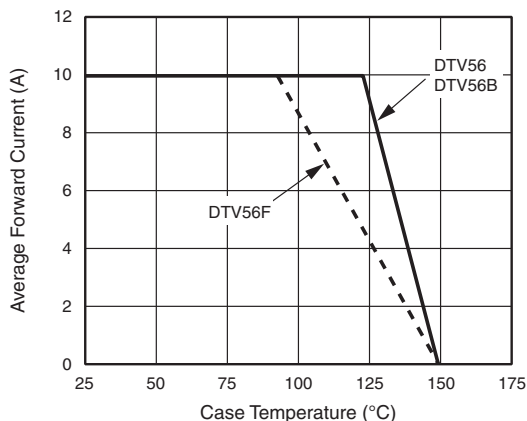


Figure 1. Forward Current Derating Curve

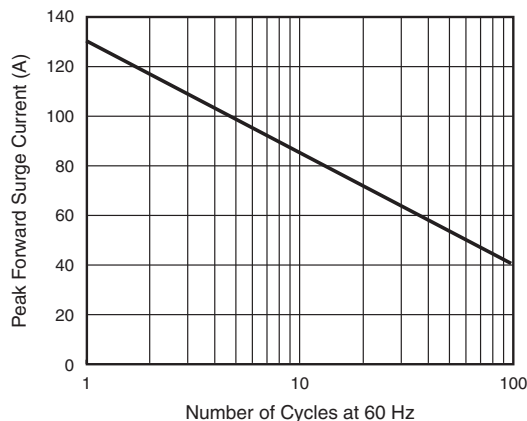


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

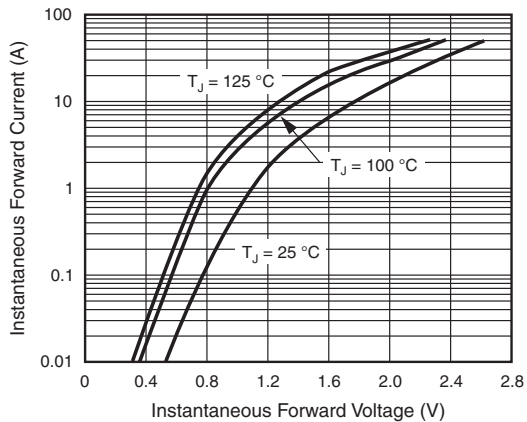


Figure 3. Typical Forward Voltage

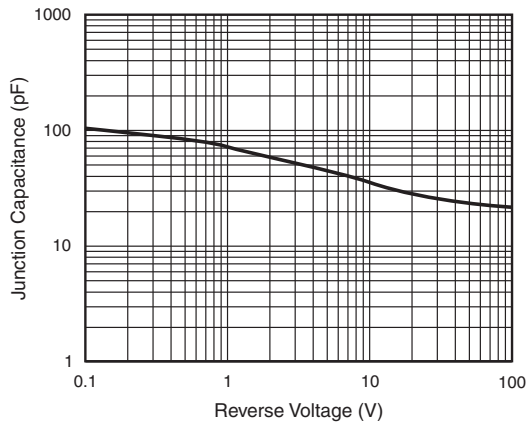


Figure 5. Typical Capacitance

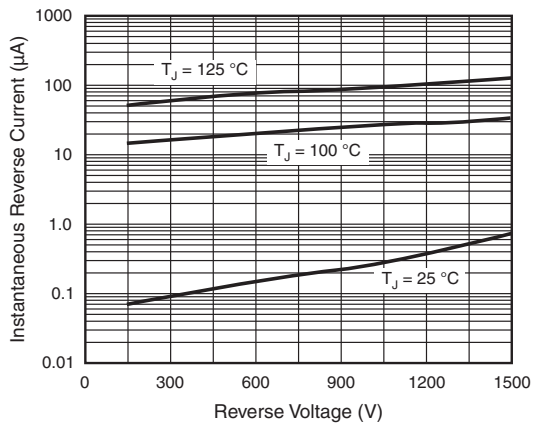


Figure 4. Typical Reverse Current

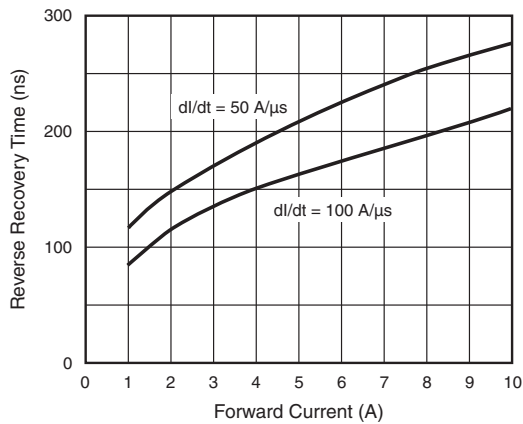


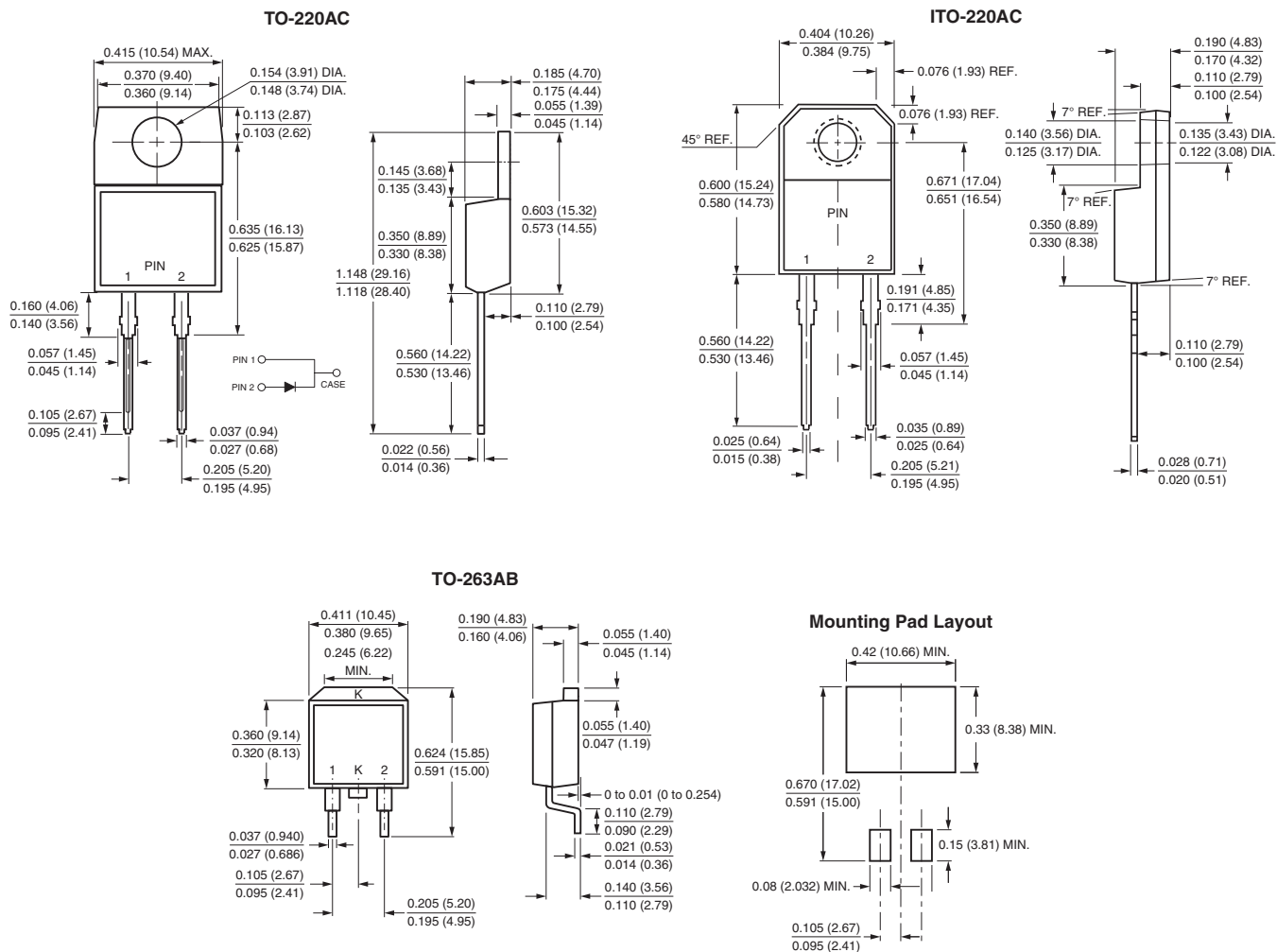
Figure 6. Typical Reverse Recovery Time

DTV56, DTV56F, DTV56B

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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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