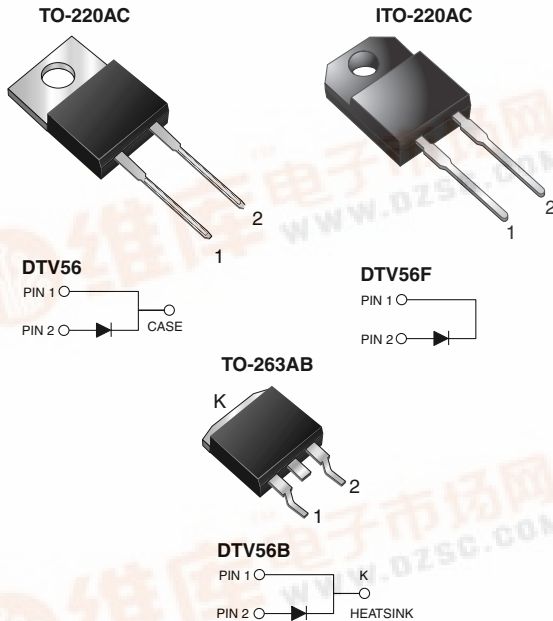




DTV56, DTV56F & DTV56B

Vishay General Semiconductor

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)
- Component in accordance to RoHS 2002/95/EC and 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 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-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



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ELECTRICAL CHARACTERISTICS ($T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)					
PARAMETER	TEST CONDITIONS		SYMBOL	VALUE	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	$I_F = 6\text{ A}$ $I_F = 6\text{ A}$	$T_J = 25\text{ }^{\circ}\text{C}$ $T_J = 125\text{ }^{\circ}\text{C}$	V_F	1.8 1.5	V
Maximum DC reverse current at V_{RRM}		$T_J = 25\text{ }^{\circ}\text{C}$ $T_J = 125\text{ }^{\circ}\text{C}$	I_R	100 1.0	μA mA
Maximum reverse recovery time	$I_F = 1.0\text{ A}$, $dI/dt = 50\text{ A}/\mu\text{s}$, $V_R = 30\text{ V}$, $I_{rr} = 0.1\text{ I}_{RM}$		t_{rr}	135	ns
Typical forward recovery time	$I_F = 6\text{ A}$, $dI/dt = 48\text{ A}/\mu\text{s}$, $V_{FR} = 3\text{ V}$		t_{fr}	350	ns
Peak forward recovery overshoot voltage	$I_F = 6\text{ A}$, $dI/dt = 48\text{ A}/\mu\text{s}$	Typical Maximum	V_{FP}	10 14	V

Note:

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

THERMAL CHARACTERISTICS ($T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	DTV56	DTV56B	DTV56F	UNIT
Typical thermal resistance from junction to case	$R_{\theta JC}$	2.0		4.0	$^{\circ}\text{C}/\text{W}$

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 reel

RATINGS AND CHARACTERISTICS CURVES

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

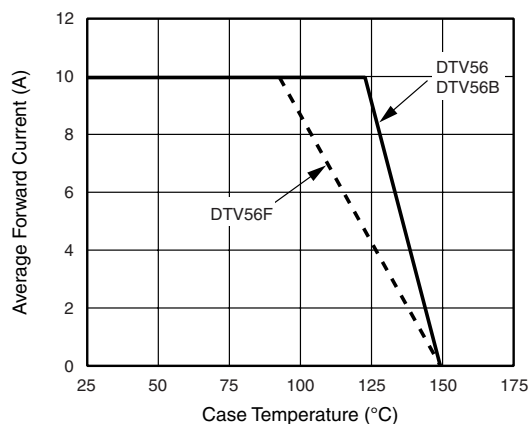


Figure 1. Forward Current Derating Curve

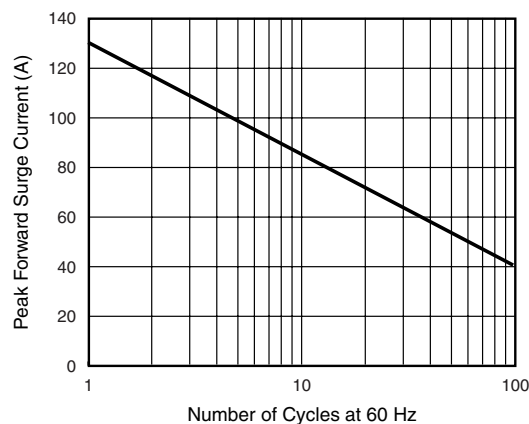


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current



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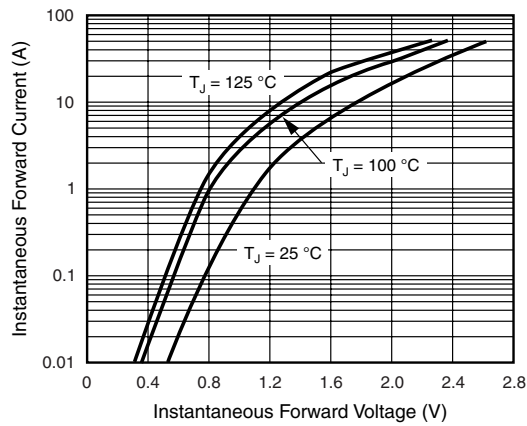


Figure 3. Typical Forward Voltage

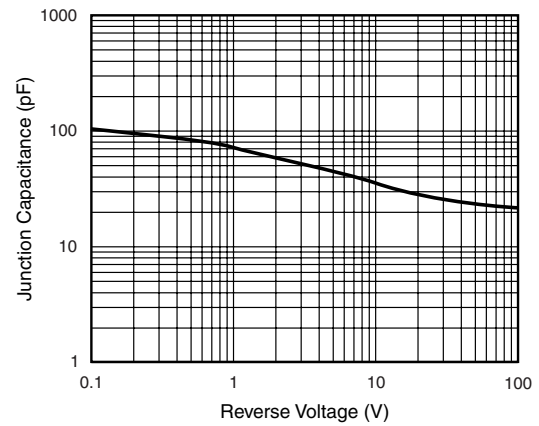


Figure 5. Typical Capacitance

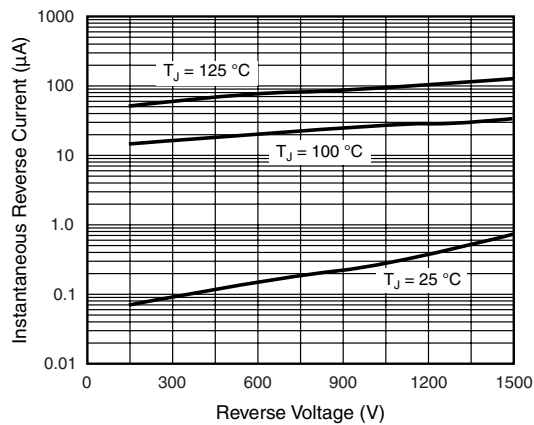


Figure 4. Typical Reverse Current

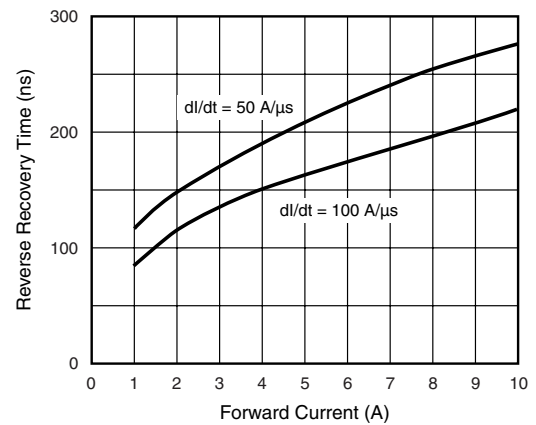


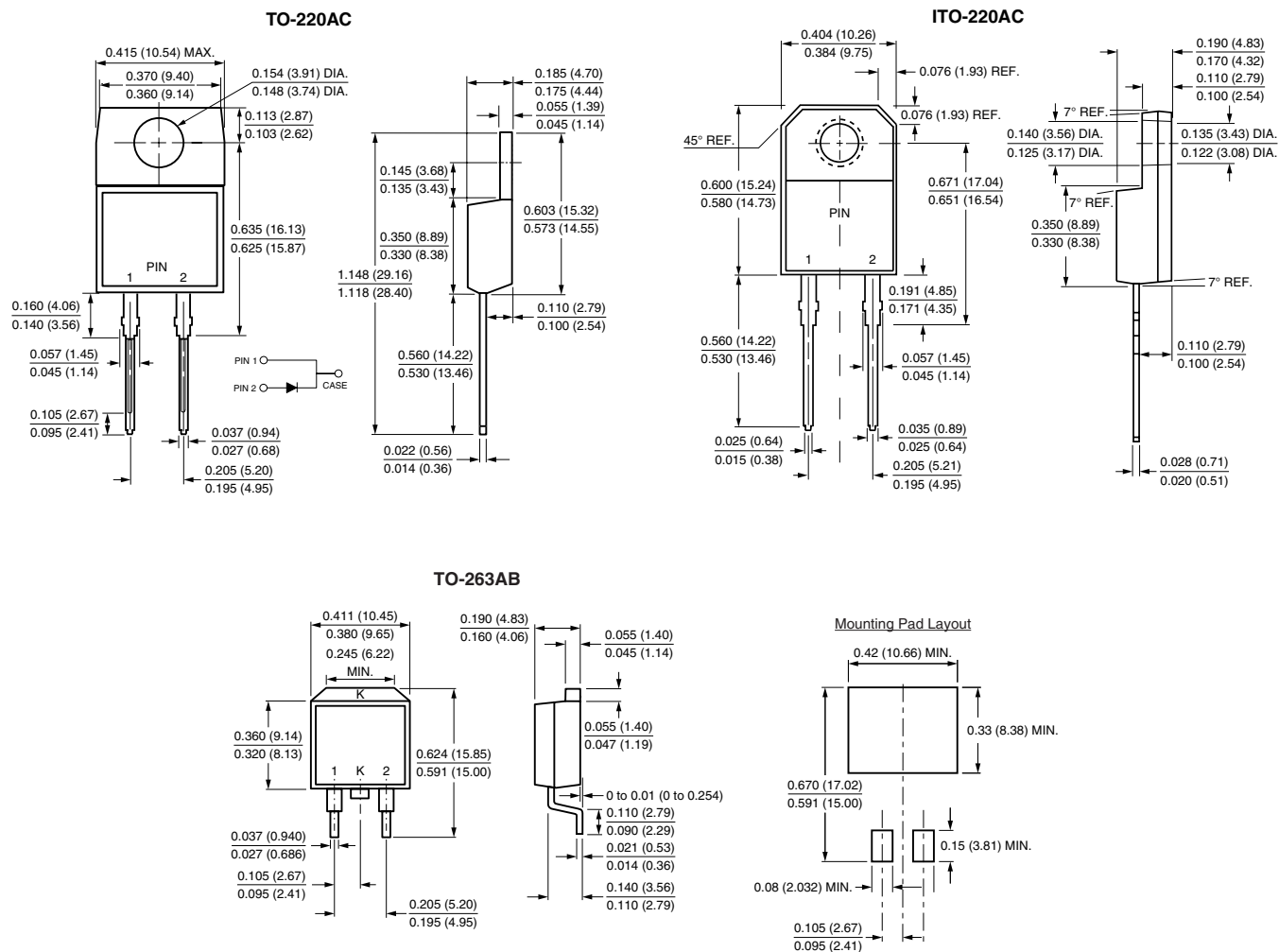
Figure 6. Typical Reverse Recovery Time

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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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