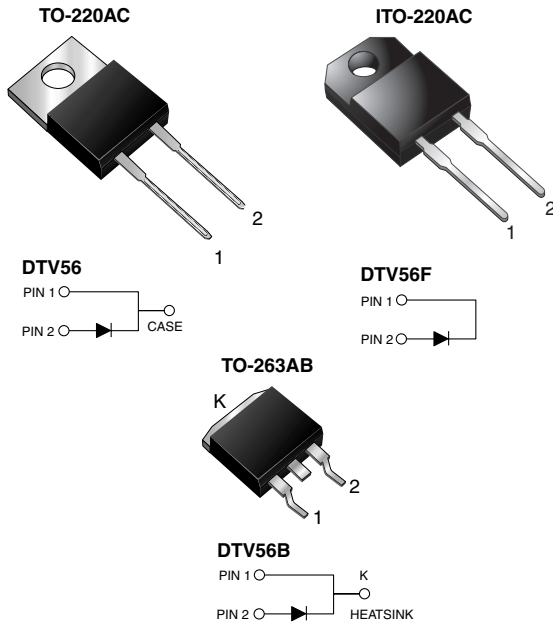


## High Voltage Damper Diodes



### 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 ( $T_C = 25\text{ }^\circ\text{C}$ 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 $T_C = 100\text{ }^\circ\text{C}$	$I_{FSM}$	130	A
Operating junction and storage temperature range	$T_J, T_{STG}$	- 55 to + 150	$^\circ\text{C}$
Isolation voltage (ITO-220AC only) from terminal to heatsink $t = 1\text{ min}$	$V_{AC}$	1500	V

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted)					
PARAMETER	TEST CONDITIONS		SYMBOL	VALUE	UNIT
Maximum instantaneous forward voltage <sup>(1)</sup>	$I_F = 6\text{ A}$	$T_J = 25\text{ }^\circ\text{C}$	$V_F$	1.8	V
	$I_F = 6\text{ A}$	$T_J = 125\text{ }^\circ\text{C}$		1.5	
Maximum DC reverse current at $V_{RRM}$			$I_R$	100	$\mu\text{A}$
				1.0	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	$V_{FP}$	10	V
		Maximum		14	

**Note:**

(1) Pulse test: 300  $\mu\text{s}$  pulse width, 2 % duty cycle

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

<b>ORDERING INFORMATION</b> (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)

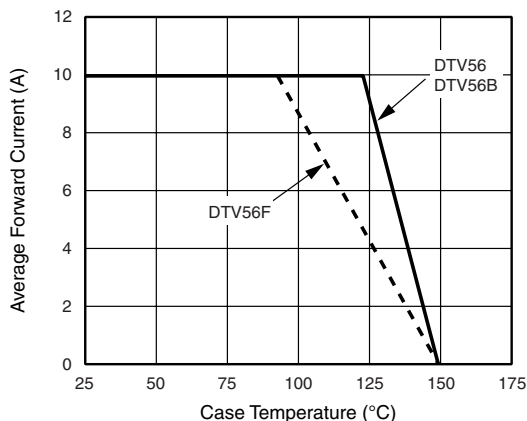


Figure 1. Forward Current Derating Curve

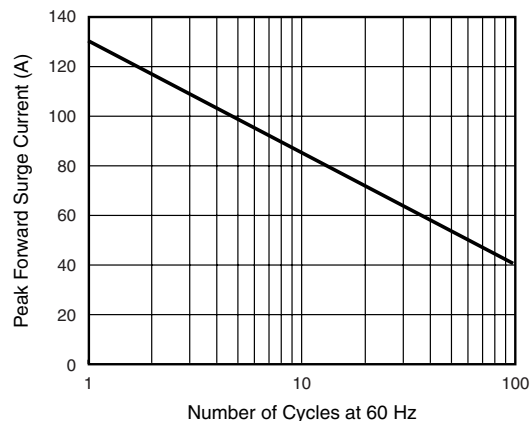


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

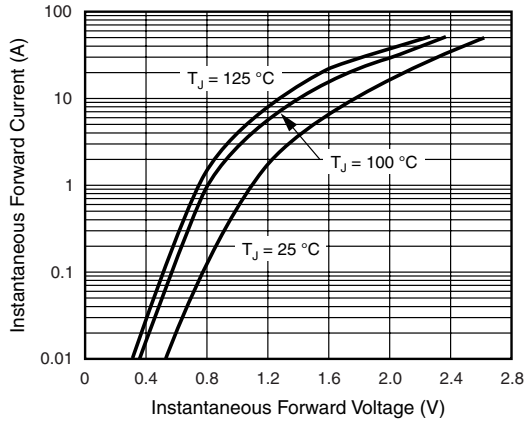


Figure 3. Typical Forward Voltage

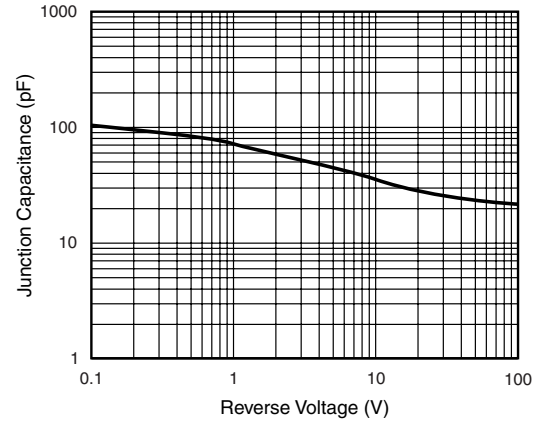


Figure 5. Typical Capacitance

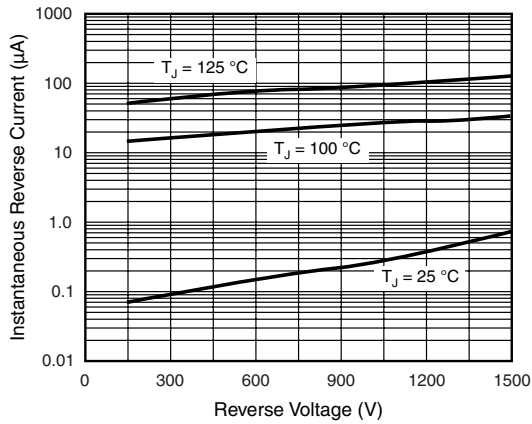


Figure 4. Typical Reverse Current

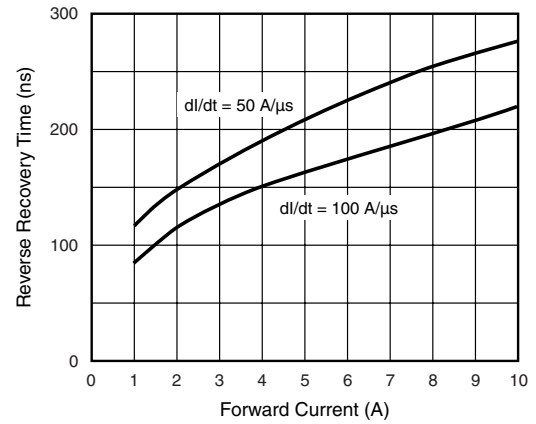
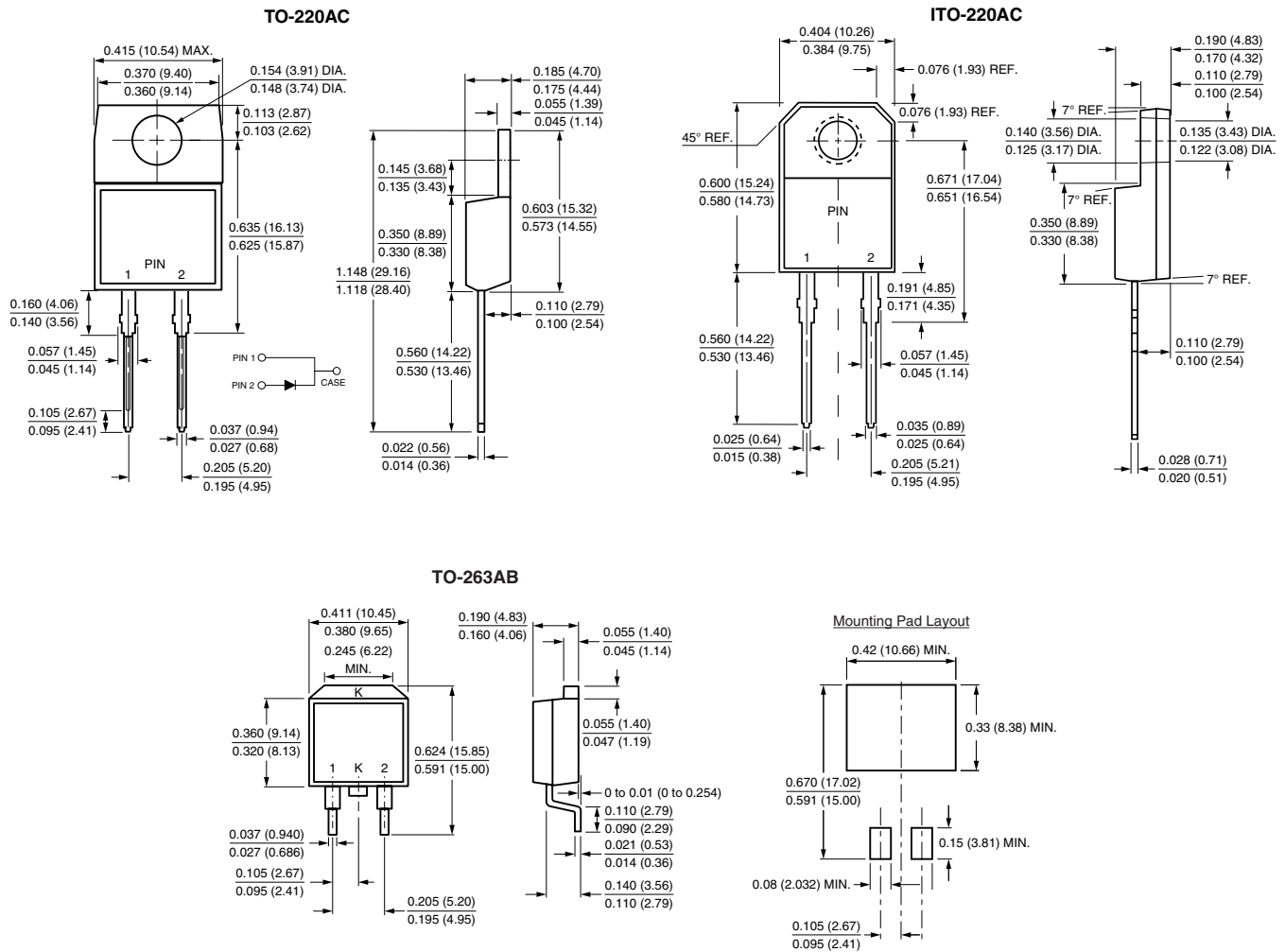


Figure 6. Typical Reverse Recovery Time

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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