

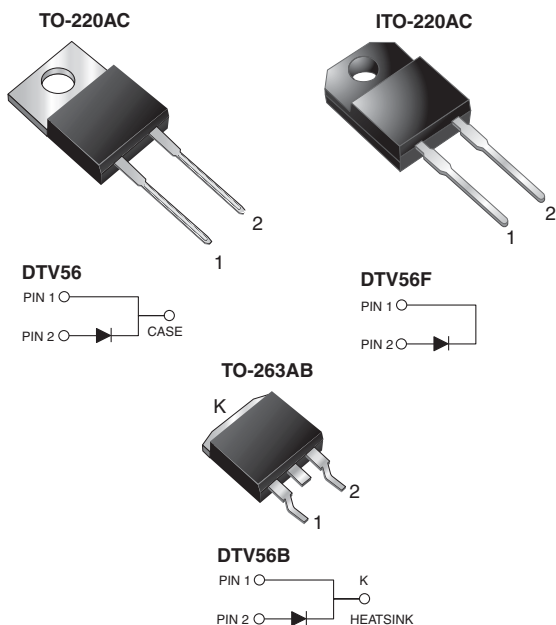


**THE DATASHEET OF  
DTV56F-E3/45**





## 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



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ELECTRICAL CHARACTERISTICS (T <sub>C</sub> = 25 °C unless otherwise noted)					
PARAMETER	TEST CONDITIONS		SYMBOL	VALUE	UNIT
Maximum instantaneous forward voltage <sup>(1)</sup>	I <sub>F</sub> = 6 A	T <sub>J</sub> = 25 °C	V <sub>F</sub>	1.8	V
	I <sub>F</sub> = 6 A	T <sub>J</sub> = 125 °C		1.5	
Maximum DC reverse current at V <sub>RRM</sub>			I <sub>R</sub>	100	μA mA
				T <sub>J</sub> = 125 °C	
Maximum reverse recovery time	I <sub>F</sub> = 1.0 A, dI/dt = 50 A/μs, V <sub>R</sub> = 30 V, I <sub>RR</sub> = 0.1 I <sub>RM</sub>		t <sub>rr</sub>	135	ns
Typical forward recovery time	I <sub>F</sub> = 6 A, dI/dt = 48 A/μs, V <sub>FR</sub> = 3 V		t <sub>fr</sub>	350	ns
Peak forward recovery overshoot voltage	I <sub>F</sub> = 6 A, dI/dt = 48 A/μs	typical	V <sub>FP</sub>	10	V
				maximum	

**Note:**

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

THERMAL CHARACTERISTICS (T <sub>C</sub> = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	DTV56	DTV56B	DTV56F	UNIT
Typical thermal resistance from junction to case	R <sub>θJC</sub>	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<sub>A</sub> = 25 °C unless otherwise noted)

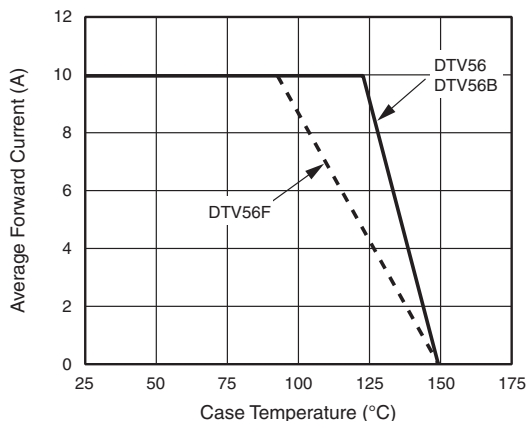


Figure 1. Forward Current Derating Curve

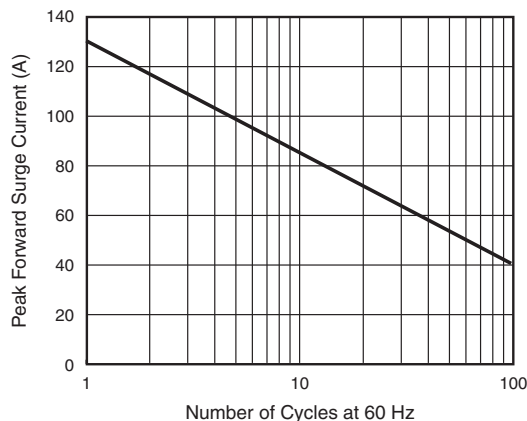


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

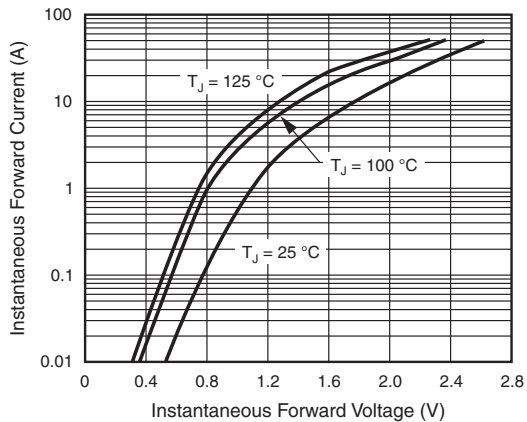


Figure 3. Typical Forward Voltage

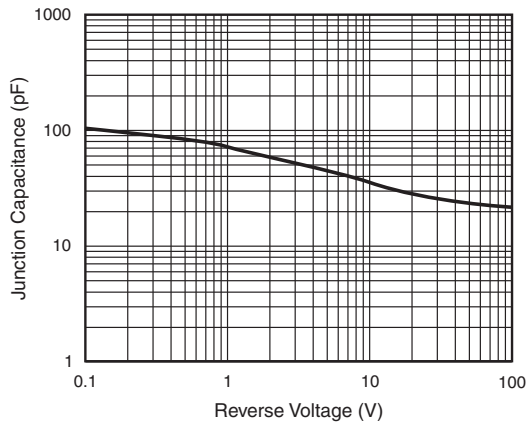


Figure 5. Typical Capacitance

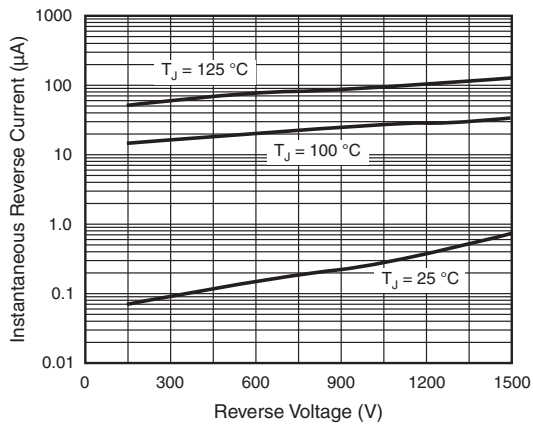


Figure 4. Typical Reverse Current

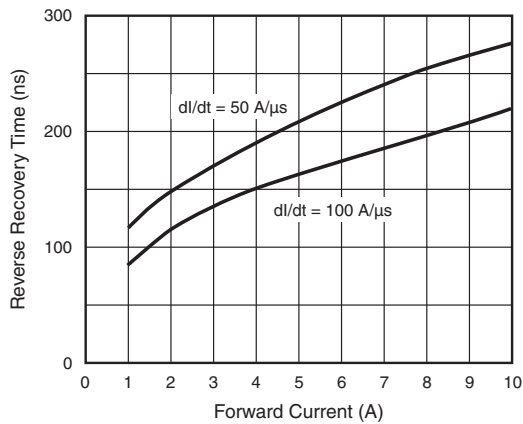


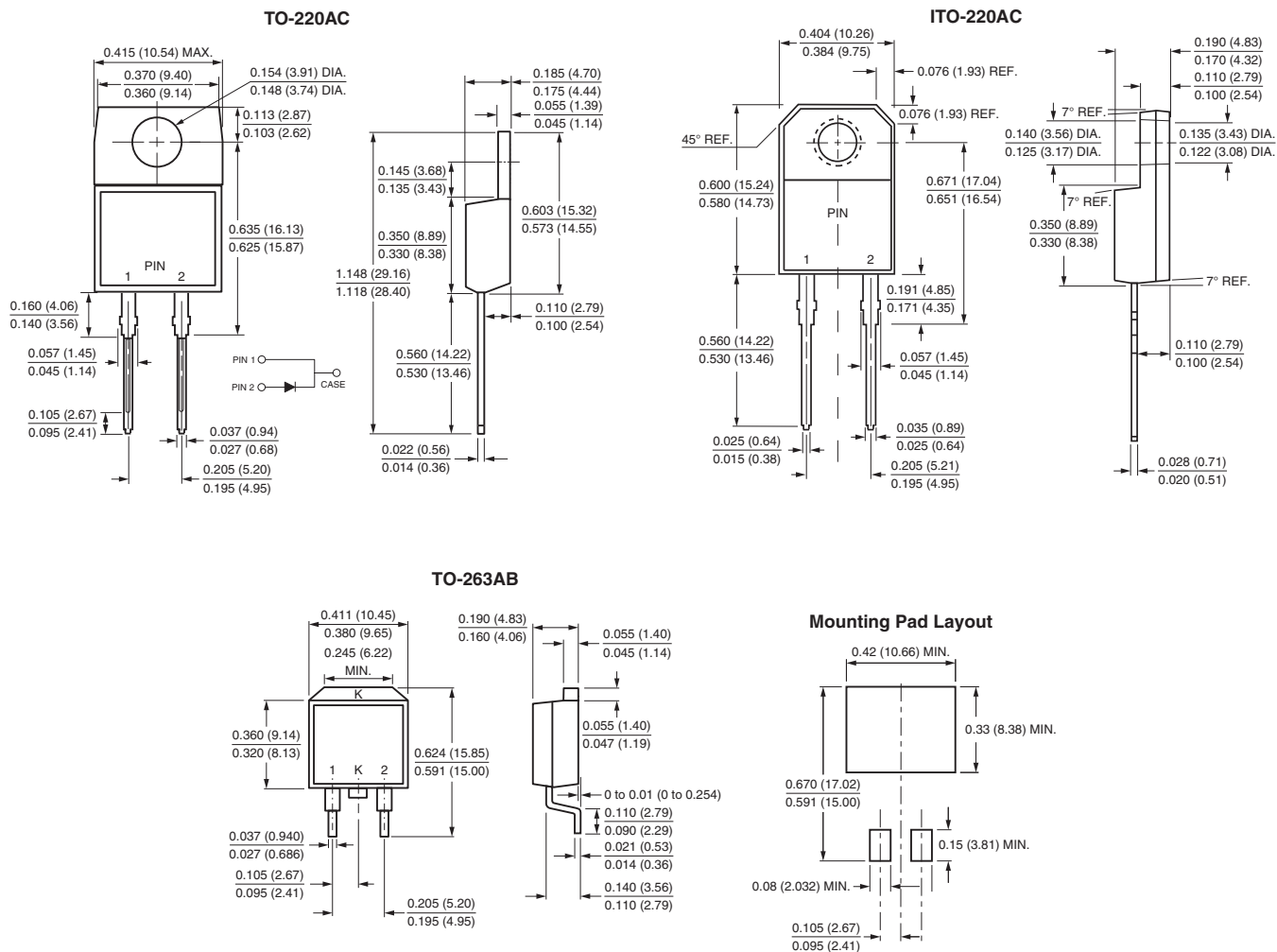
Figure 6. Typical Reverse Recovery Time

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## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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