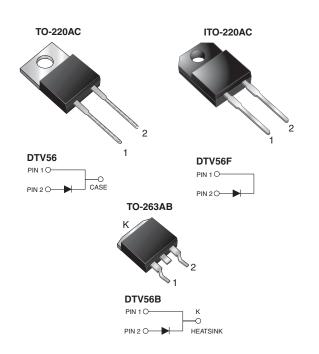


Vishay General Semiconductor

## **High Voltage Damper Diodes**



PRIMARY CHARACTERISTICS				
I <sub>F(AV)</sub>	10 A			
$V_{RRM}$	1500 V			
t <sub>rr</sub>	135 ns			
t <sub>fr</sub>	350 ns			
V <sub>F</sub>	1.5 V			

#### **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

#### 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

MAXIMUM RATINGS (T <sub>C</sub> = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	VALUE	UNIT		
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	1500	V		
Maximum RMS voltage	V <sub>RMS</sub>	1050	V		
Maximum DC blocking voltage	V <sub>DC</sub>	1500	V		
Maximum average forward rectified current (fig. 1)	I <sub>F(AV)</sub>	10	Α		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load at $T_C = 100  ^{\circ} C$	I <sub>FSM</sub>	130	А		
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	- 55 to + 150	°C		
Isolation voltage (ITO-220AC only) from terminal to heatsink t = 1 min	V <sub>AC</sub>	1500	V		

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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>C</sub> = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		TER TEST CONDITIONS		SYMBOL	VALUE	UNIT
Maximum instantaneous forward voltage (1)	I <sub>F</sub> = 6 A I <sub>F</sub> = 6 A	T <sub>J</sub> = 25 °C T <sub>J</sub> = 125 °C	V <sub>F</sub>	1.8 1.5	V		
Maximum DC reverse current at V <sub>RRM</sub>		T <sub>J</sub> = 25 °C T <sub>J</sub> = 125 °C	I <sub>R</sub>	100 1.0	μA mA		
Maximum reverse recovery time	$I_F = 1.0 \text{ A}, \text{ dI/dt} = 50 \text{ A/}\mu\text{s},$ $V_R = 30 \text{ V}, I_{rr} = 0.1 I_{RM}$		t <sub>rr</sub>	135	ns		
Typical forward recovery time	$I_F = 6 \text{ A}, \text{ dI/dt} = 48 \text{ A/}\mu\text{s}, V_{FR} = 3 \text{ V}$		t <sub>fr</sub>	350	ns		
Peak forward recovery overshoot voltage	I <sub>F</sub> = 6 A, dI/dt = 48 A/μs	typical maximum	V <sub>FP</sub>	10 14	V		

#### 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	$R_{ hetaJC}$	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)

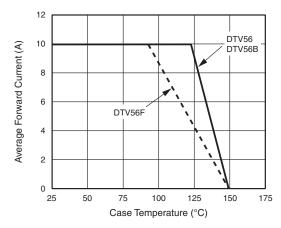


Figure 1. Forward Current Derating Curve

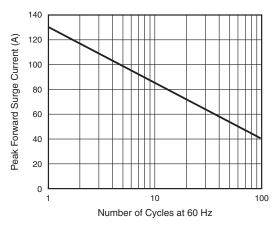


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current



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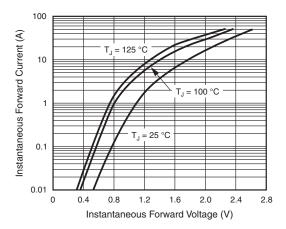


Figure 3. Typical Forward Voltage

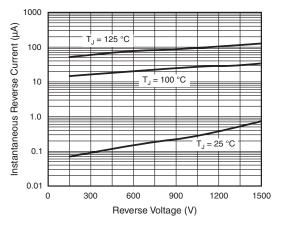


Figure 4. Typical Reverse Current

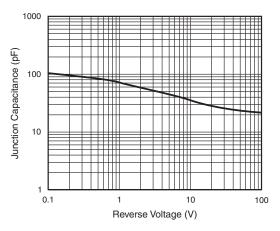


Figure 5. Typical Capacitance

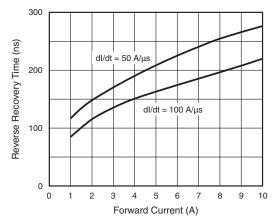
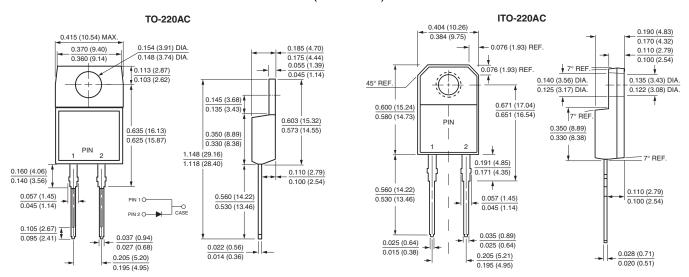


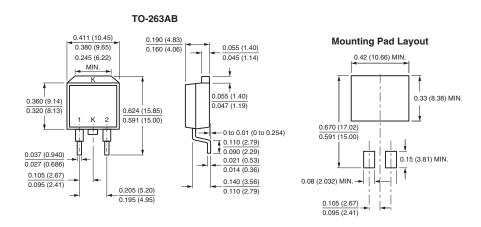
Figure 6. Typical Reverse Recovery Time

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









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