

High Voltage Damper Diodes

Major Ratings and Characteristics

$I_{F(AV)}$	10 A
V_{RRM}	1500 V
t_{rr}	175 ns
t_{fr}	280 ns
V_F	1.35 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-020C

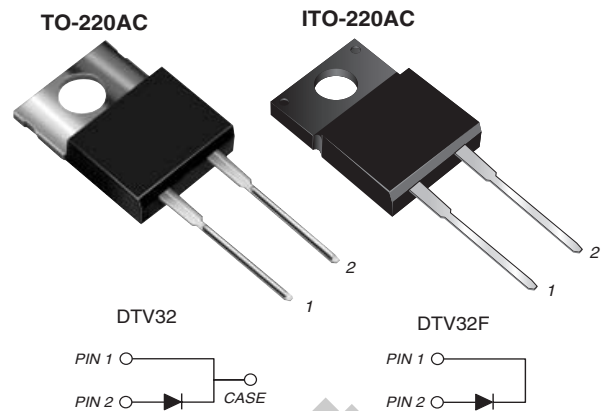
Typical Applications

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

Maximum Ratings

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

Parameter	Test condition	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 (JEDEC Method) 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	$^\circ\text{C}$
RMS Isolation voltage (DTV32F types only) from terminals to heatsink	with $t = 1.0$ second, $RH \leq 30\%$	V_{ISOL}	4500 ⁽¹⁾ 3500 ⁽²⁾ 1500 ⁽³⁾	V



Mechanical Data

Case: JEDEC TO-220AC, ITO-220AC

Terminals: Matte tin plated (E3 Suffix) leads, solderable per J-STD-002B and MIL-STD-750, Method 2026

Mounting Torque: 10 in-lbs Maximum

Epoxy meets UL-94V-0 Flammability rating

Electrical Characteristics

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

Parameter	Test condition	Symbol	Value	Unit
Maximum instantaneous forward voltage ⁽⁴⁾	$I_F = 6\text{ A}$, $T_J = 25\text{ }^\circ\text{C}$	V_F	1.5	V
	$I_F = 6\text{ A}$, $T_J = 125\text{ }^\circ\text{C}$		1.35	
Maximum DC reverse current at V_{RRM}	$T_J = 25\text{ }^\circ\text{C}$	I_R	100	μA
	$T_J = 125\text{ }^\circ\text{C}$		1.0	mA
Maximum reverse recovery time	at $I_F = 1.0\text{ A}$, $di/dt = 50\text{ A}/\mu\text{s}$, $V_R = 30\text{ V}$, $I_{rr} = 0.1 I_{RM}$	t_{rr}	175	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}	280	ns
Peak forward recovery overshoot voltage	at $I_F = 6\text{ A}$, $di/dt = 48\text{ A}/\mu\text{s}$, $T_J = 100\text{ }^\circ\text{C}$	V_{FP}	Typical 8	V
			Maximum 12	

Notes:

- (1) Clip mounting (on case), where lead does not overlap heatsink with 0.110" offset
- (2) Clip mounting (on case), where leads do overlap heatsink
- (3) Screw mounting with 4-40 screw, where washer diameter is $\leq 4.9\text{ mm}$ (0.19")
- (4) Pulse test: 300 μs pulse width, 2 % duty cycle

Thermal Characteristics

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

Parameter	Test condition	Symbol	DTV32	DTV32F	Unit
Typical thermal resistance from junction to case		$R_{\theta JC}$	2.0	4.0	$^\circ\text{C}/\text{W}$

Ratings and Characteristics Curves

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

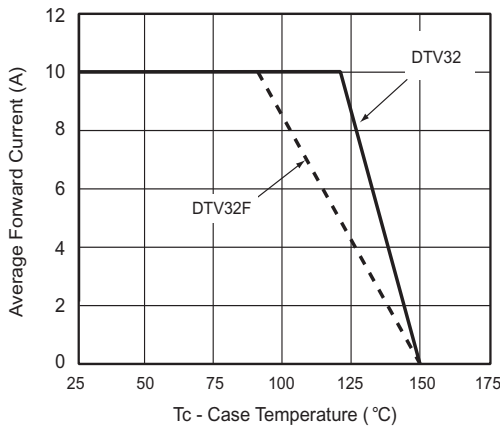


Figure 1. Forward Current Derating Curve

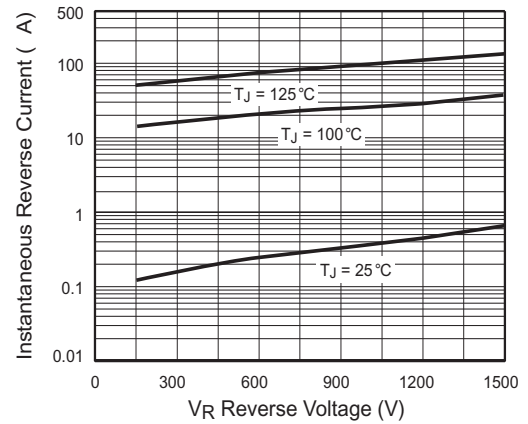


Figure 4. Typical Reverse Current

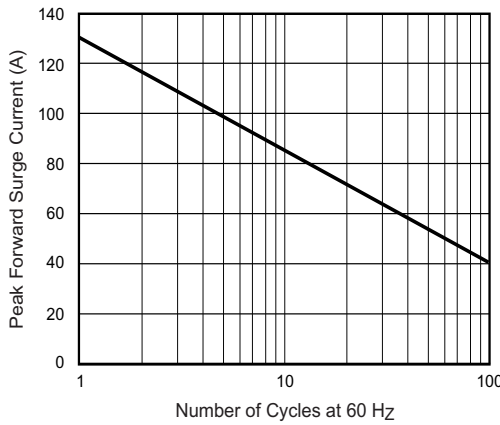


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

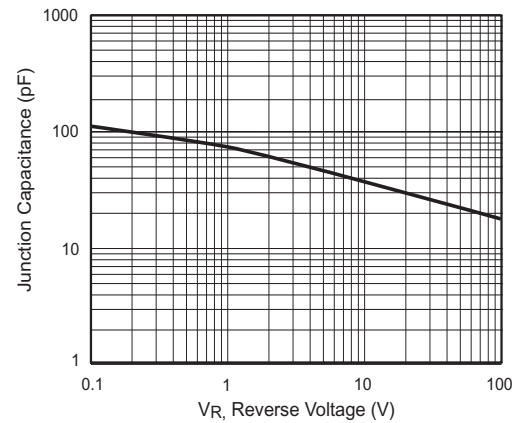


Figure 5. Typical Capacitance

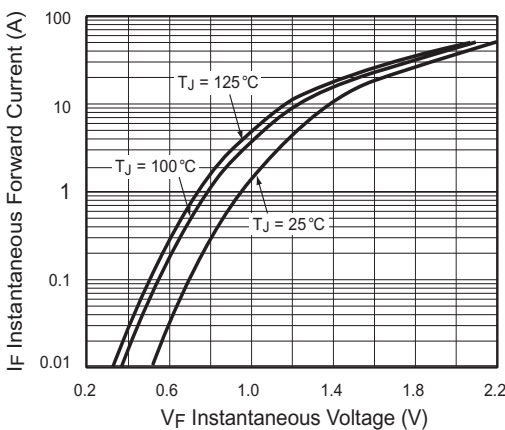


Figure 3. Typical Forward Voltage

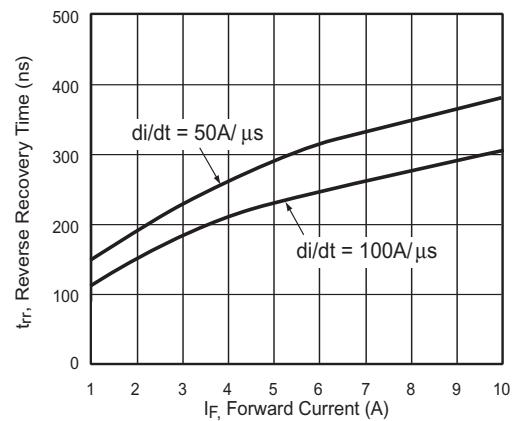
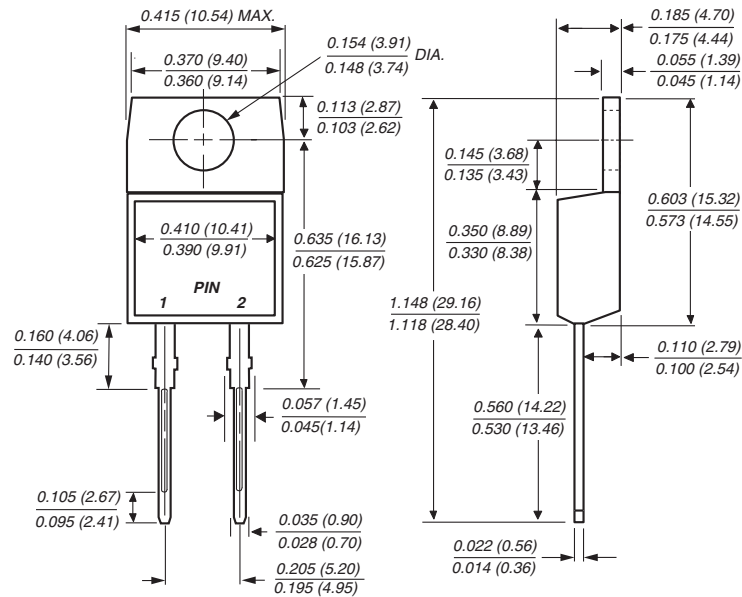


Figure 6. Typical Reverse Recovery Time

Dimensions in Inches and (millimeters)

TO-220AC



ITO-220AC

