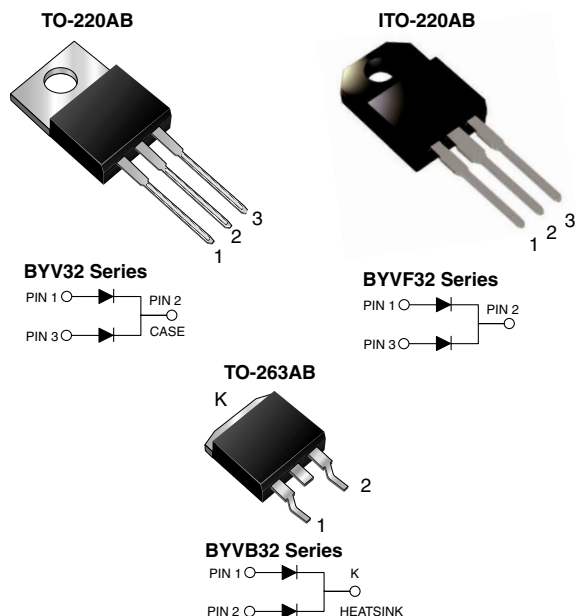


Dual Common-Cathode Ultrafast Rectifier



FEATURES

- Glass passivated chip junction
- Ultrafast recovery time
- Low switching losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- Meets MSL level 1, per J-STD-020C, LF max peak of 245 °C (for TO-263AB package)
- Solder Dip 260 °C, 40 seconds (for TO-220AB & ITO-220AB package)
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, inverters, free-wheeling diodes, dc-to-dc converters, and other power switching application.

MECHANICAL DATA

Case: TO-220AB, ITO-220AB, TO-263AB

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

MAJOR RATINGS AND CHARACTERISTICS

$I_{F(AV)}$	18 A
V_{RRM}	50 V to 200 V
I_{FSM}	150 A
t_{rr}	25 ns
V_F	0.85 V
T_j max.	150 °C

MAXIMUM RATINGS ($T_C = 25$ °C unless otherwise noted)

PARAMETER	SYMBOL	BYV32-50	BYV32-100	BYV32-150	BYV32-200	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	V
Maximum RMS voltage	V_{RMS}	35	70	105	140	V
Maximum DC blocking voltage	V_{DC}	50	100	150	200	V
Maximum average forward rectified current at $T_C = 125$ °C	$I_{F(AV)}$	18				A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	150				A
Operating storage and temperature range	T_J, T_{STG}	- 65 to + 150				°C
Isolation voltage (ITO-220AB only) From terminal to heatsink $t = 1$ minute	V_{AC}	1500				V

ELECTRICAL CHARACTERISTICS ($T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)							
PARAMETER	TEST CONDITIONS	SYMBOL	BYV32-50	BYV32-100	BYV32-150	BYV32-200	UNIT
Maximum instantaneous forward voltage per diode ⁽¹⁾	at $I_F = 20\text{ A}$ at $I_F = 5.0\text{ A}$ $T_J = 100\text{ }^{\circ}\text{C}$	V_F	1.15 0.85				V
Maximum DC reverse current per diode at rated DC blocking voltage	$T_J = 25\text{ }^{\circ}\text{C}$ $T_J = 100\text{ }^{\circ}\text{C}$	I_R	10 600				μA
Maximum reverse recovery time per diode	at $I_F = 1\text{ A}$, $V_R = 30\text{ V}$, $di/dt = 100\text{ A}/\mu\text{s}$, $I_{rr} = 10\text{ \% } I_{RM}$	t_{rr}	25				ns
Typical junction capacitance per diode	at 4.0 V, 1 MHz	C_J	45				pF

Note:

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

THERMAL CHARACTERISTICS ($T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	BYV	BYVF	BYVB	UNIT
Typical thermal resistance from junction to case per diode	$R_{\theta JC}$	1.6	5.0	1.6	$^{\circ}\text{C}/\text{W}$

ORDERING INFORMATION					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	BYV32-200-E3/45	1.85	45	50/Tube	Tube
ITO-220AB	BYVF32-200-E3/45	1.97	45	50/Tube	Tube
TO-263AB	BYVB32-200-E3/45	1.35	45	50/Tube	Tube
TO-263AB	BYVB32-200-E3/81	1.35	81	800/Reel	Tape Reel

RATINGS AND CHARACTERISTICS CURVES

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

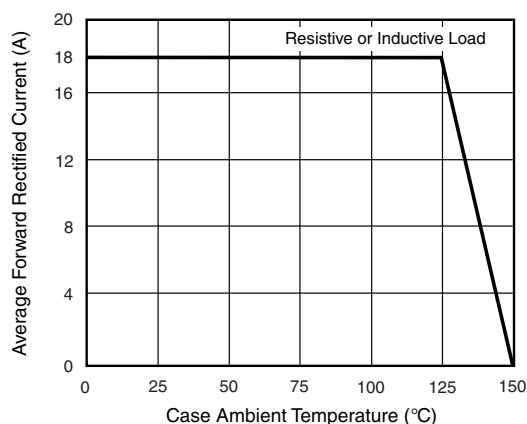


Figure 1. Forward Current Derating Curve

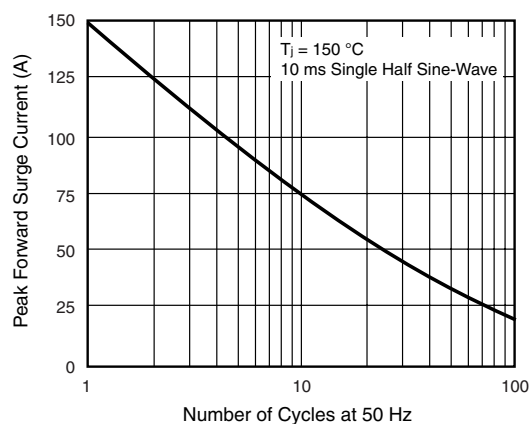


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

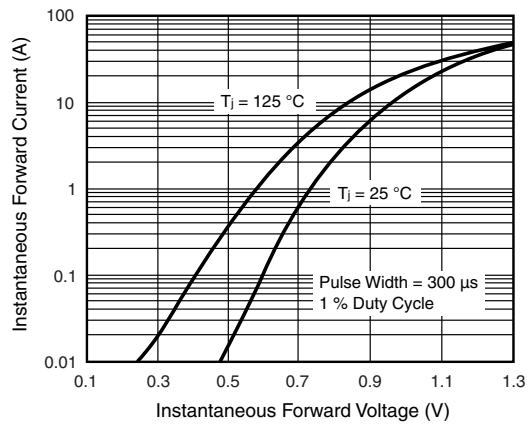


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

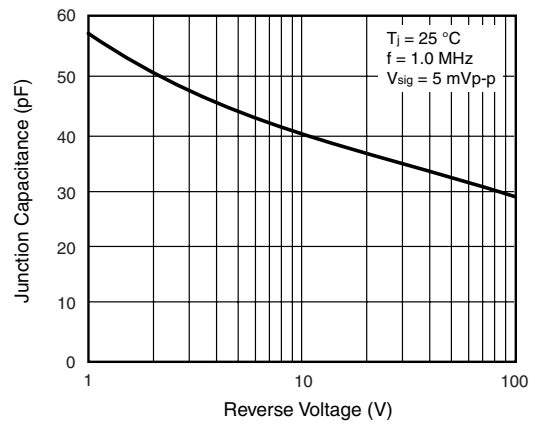


Figure 5. Typical Junction Capacitance Per Diode

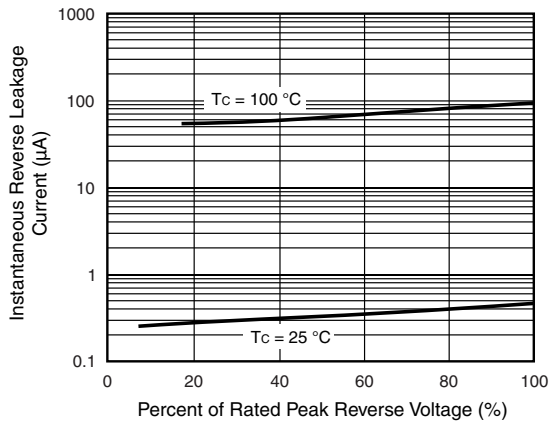
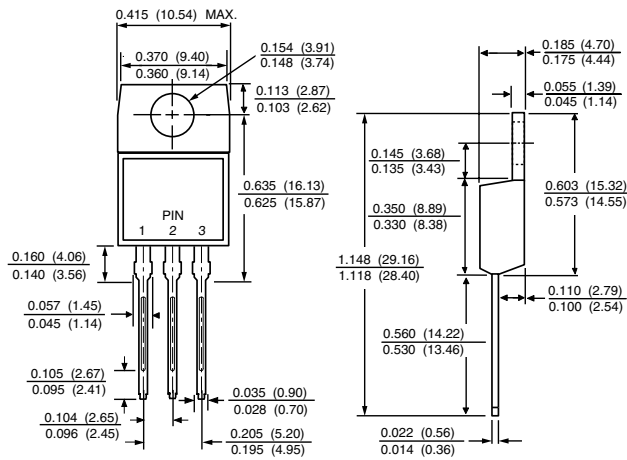


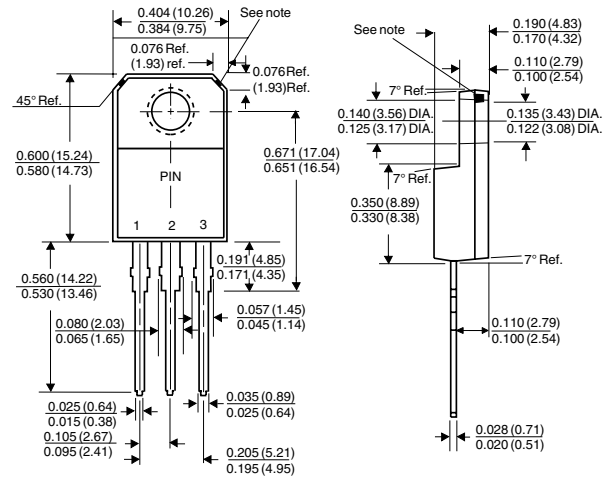
Figure 4. Typical Reverse Leakage Characteristics Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB

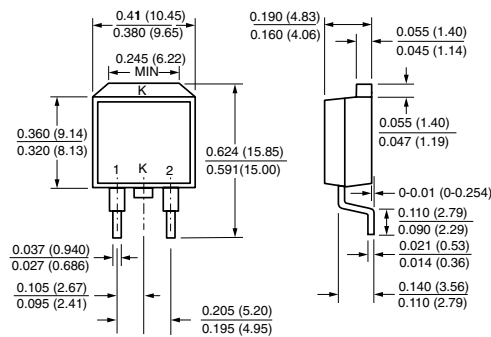


ITO-220AB

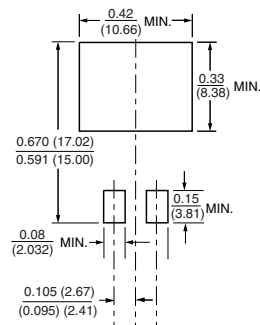


Note: Copper exposure is allowable for 0.005 (0.13) Max. from the body

TO-263AB



Mounting Pad Layout





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