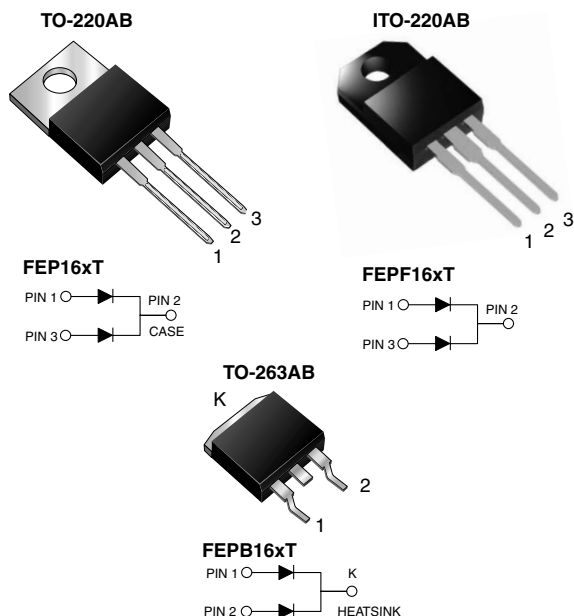


Dual Common-Cathode Ultrafast Plastic Rectifier



FEATURES

- Glass passivated chip junction
- Ultrafast recovery time
- Low switching losses, high efficiency
- High forward surge capability
- AEC-Q101 qualified
- 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.

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	8.0 A x 2
V_{RRM}	50 V to 600 V
I_{FSM}	200 A, 125 A
t_{rr}	35 ns, 50 ns
V_F	0.95 V, 1.30 V, 1.50 V
$T_j \text{ max.}$	150 °C

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

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

MAXIMUM RATINGS (T _C = 25 °C unless otherwise noted)										
PARAMETER	SYMBOL	FEP 16AT	FEP 16BT	FEP 16CT	FEP 16DT	FEP 16FT	FEP 16GT	FEP 16HT	FEP 16JT	UNIT
Maximum repetitive peak reverse voltage	V _{RRM}	50	100	150	200	300	400	500	600	V
Maximum RMS voltage	V _{RMS}	35	70	105	140	210	280	350	420	V
Maximum DC blocking voltage	V _{DC}	50	100	150	200	300	400	500	600	V
Maximum average forward rectified current at T _C = 100 °C	I _{F(AV)}	16								A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I _{FSM}	200				125				A
Operating storage and temperature range	T _J , T _{STG}	- 55 to +150								°C
Isolation voltage (ITO-220AB only) From terminal to heatsink t = 1 minute	V _{AC}	1500								V

FEP(F,B)16AT thru FEP(F,B)16JT

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ELECTRICAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted)											
PARAMETER	TEST CONDITIONS	SYMBOL	FEP 16AT	FEP 16BT	FEP 16CT	FEP 16DT	FEP 16FT	FEP 16GT	FEP 16HT	FEP 16JT	UNIT
Maximum instantaneous forward voltage per diode ⁽¹⁾	at 8.0 A	V _F	0.95				1.30		1.50		V
Maximum DC reverse current per diode at rated DC blocking voltage	T _C = 25 °C T _C = 100 °C	I _R	10 500								μA
Maximum reverse recovery time per diode	at I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A	t _{rr}	35				50				ns
Typical junction capacitance per diode	at 4.0 V, 1 MHz	C _J	85						60		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	FEP	FEPF	FEPB	UNIT
Typical thermal resistance from junction to case per diode	$R_{\theta JC}$	2.2	3.1	2.2	$^{\circ}\text{C/W}$

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	FEP16JT-E3/45	1.85	45	50/Tube	Tube
ITO-220AB	FEPF16JT-E3/45	1.97	45	50/Tube	Tube
TO-263AB	FEPB16JT-E3/45	1.35	45	50/Tube	Tube
TO-263AB	FEPB16JT-E3/81	1.35	81	800/Reel	Tape Reel
TO-220AB	FEP16JT-E3/45 ⁽¹⁾	1.85	45	50/Tube	Tube
ITO-220AB	FEPF16JT-E3/45 ⁽¹⁾	1.97	45	50/Tube	Tube
TO-263AB	FEPB16JT-E3/45 ⁽¹⁾	1.35	45	50/Tube	Tube
TO-263AB	FEPB16JT-E3/81 ⁽¹⁾	1.35	81	800/Reel	Tape Reel

Note:

(1) Automotive grade AEC Q101 qualified



RATINGS AND CHARACTERISTICS CURVES

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

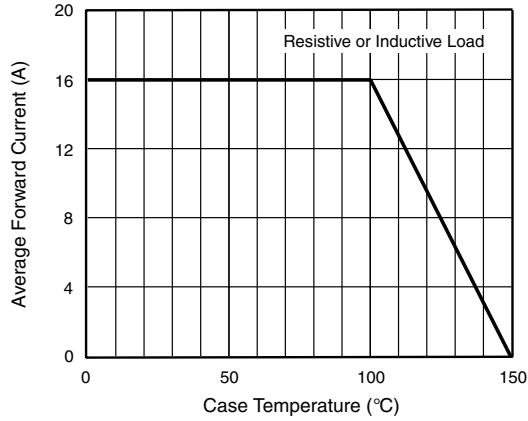


Figure 1. Forward Current Derating Curve

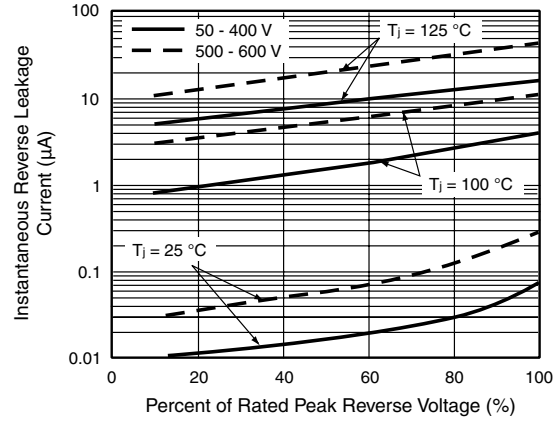


Figure 4. Typical Reverse Characteristics Per Diode

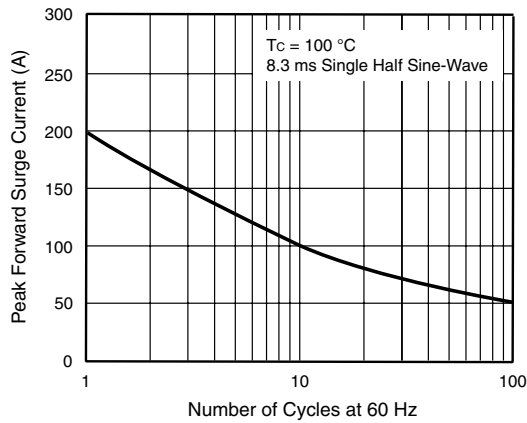


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

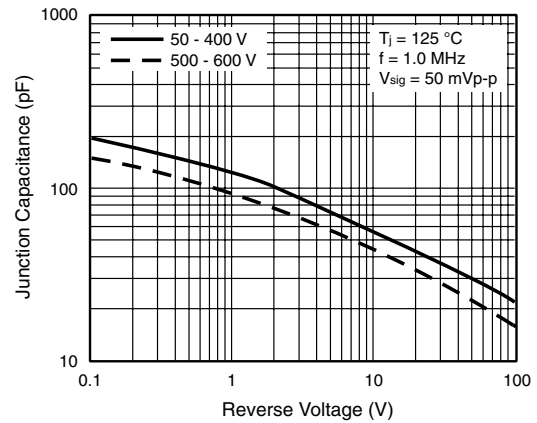


Figure 5. Typical Junction Capacitance Per Diode

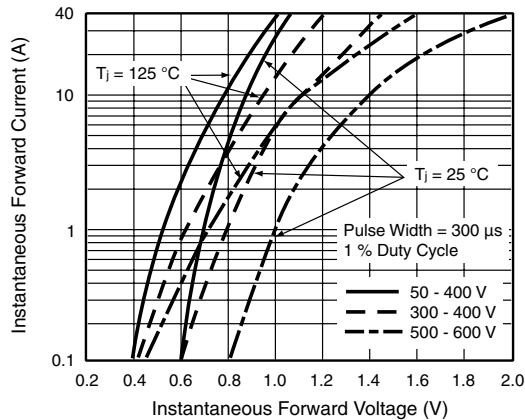
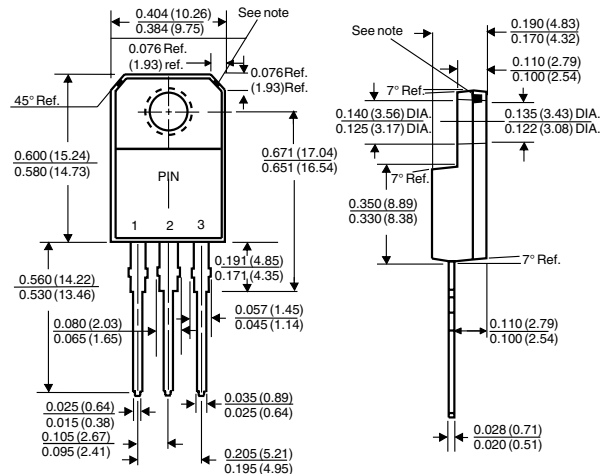


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

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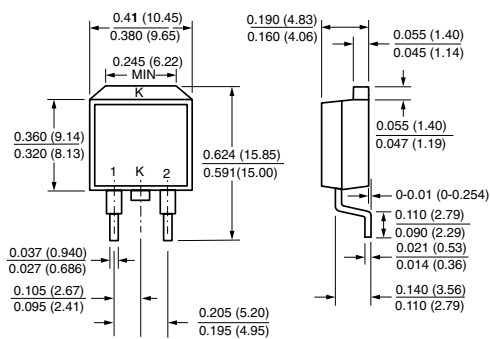


ITO-220AB

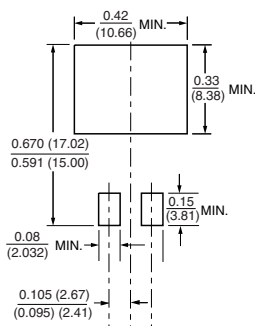


Note: Copper exposure is allowable for 0.005 (0.13) max. from the body

TO-263AB



Mounting Pad Layout





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