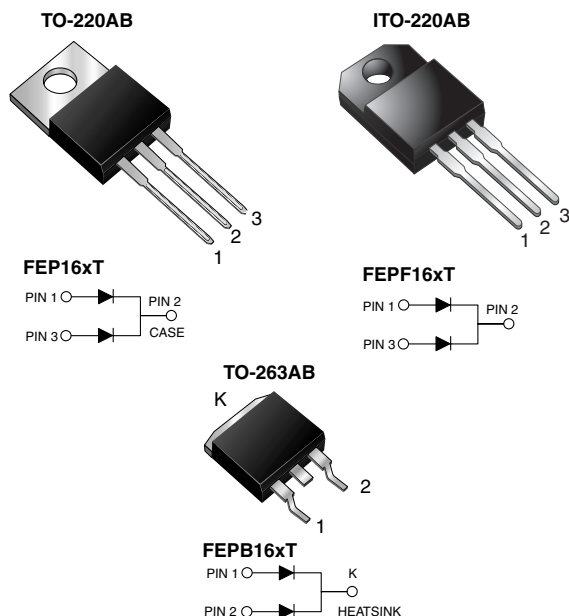


Dual Common-Cathode Ultrafast Plastic Rectifier



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-020, LF maximum peak of 245 °C (for TO-263AB package)
- Solder dip 260 °C, 40 s (for TO-220AB and ITO-220AB package)
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, inverters, freewheeling 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-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

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 max.	150 °C

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 min	V _{AC}	1500								V

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⁾	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	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	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 and 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 and 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

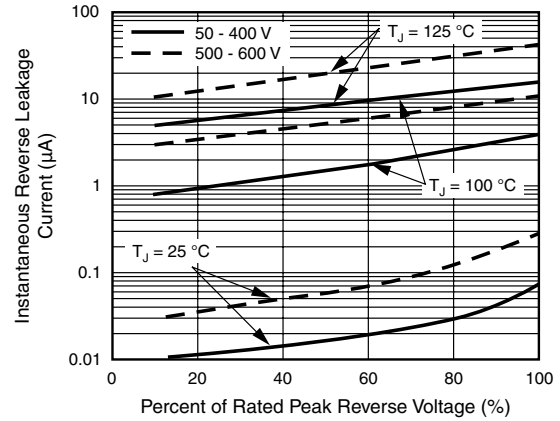


Figure 4. Typical Reverse Characteristics Per Diode



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

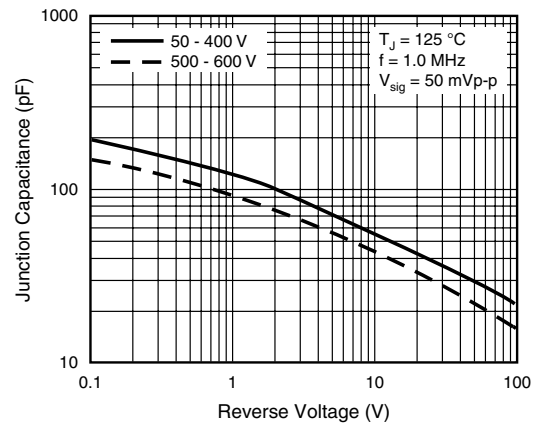


Figure 5. Typical Junction Capacitance Per Diode



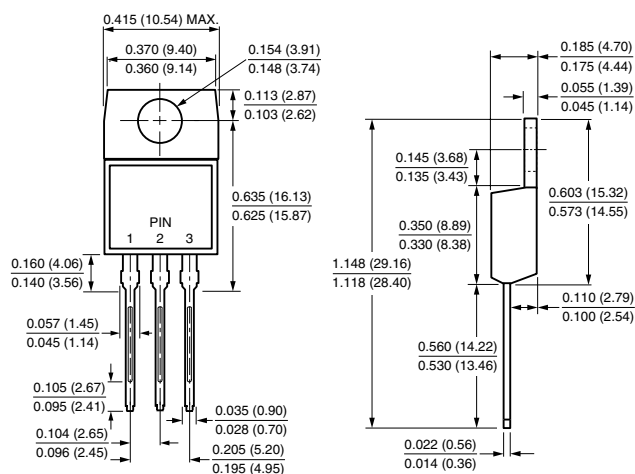
Figure 3. Typical Instantaneous Forward Characteristics Per Diode

Vishay General Semiconductor



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

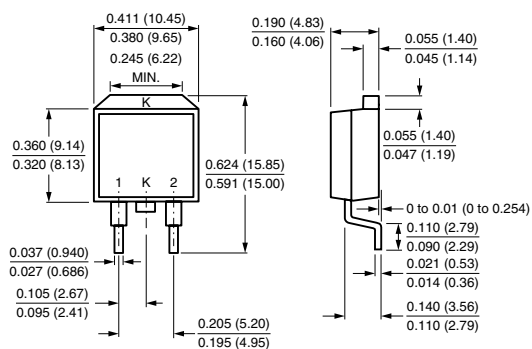
TO-220AB



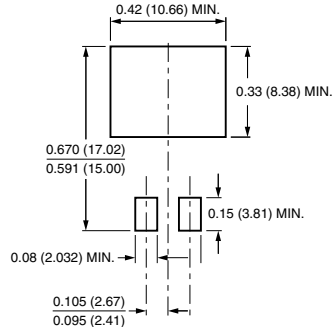
ITO-220AB



TO-263AB



Mounting Pad Layout





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