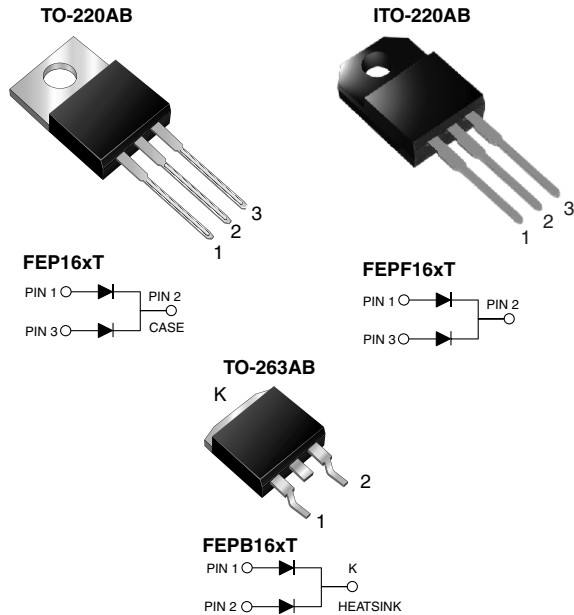


## Dual Common-Cathode Ultrafast Plastic Rectifier



### 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 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



### 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-002B and JESD22-B102D

E3 suffix for commercial 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)										
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

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

Vishay General Semiconductor



<b>ELECTRICAL CHARACTERISTICS</b> ( $T_C = 25\text{ }^\circ\text{C}$ 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		$T_C = 25\text{ }^\circ\text{C}$ $T_C = 100\text{ }^\circ\text{C}$	$I_R$	10 500							$\mu\text{A}$	
Maximum reverse recovery time per diode	$I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $t_{rr} = 0.25\text{ A}$		$t_{rr}$	35			50				ns	
Typical junction capacitance per diode	4.0 V, 1 MHz		$C_J$	85					60			pF

**Note:**

(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

<b>THERMAL CHARACTERISTICS</b> ( $T_C = 25\text{ }^\circ\text{C}$ 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	$^\circ\text{C/W}$

<b>ORDERING INFORMATION</b> (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 <sup>THE</sup> 3/45 (1)	1.85	45	50/tube	Tube
ITO-220AB	FEPF16JT <sup>THE</sup> 3/45 (1)	1.97	45	50/tube	Tube
TO-263AB	FEPB16JT <sup>THE</sup> 3/45 (1)	1.35	45	50/tube	Tube
TO-263AB	FEPB16JT <sup>THE</sup> 3/81 (1)	1.35	81	800/reel	Tape reel

**Note:**

(1) Automotive grade AEC Q101 qualified

## RATINGS AND CHARACTERISTICS CURVES

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

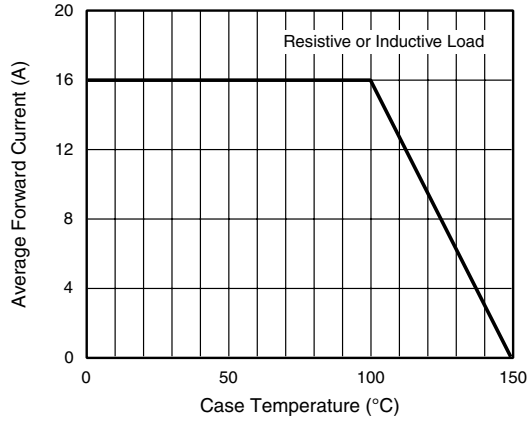


Figure 1. Forward Current Derating Curve

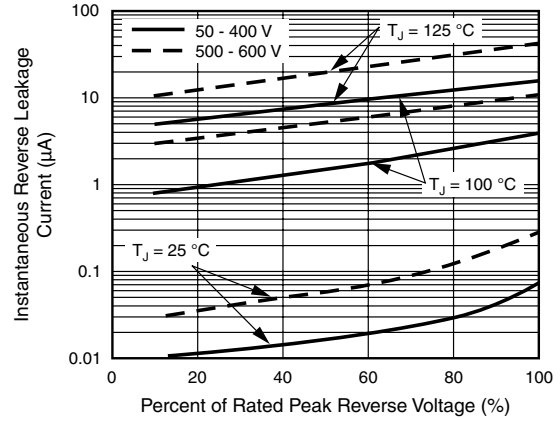


Figure 4. Typical Reverse Characteristics Per Diode

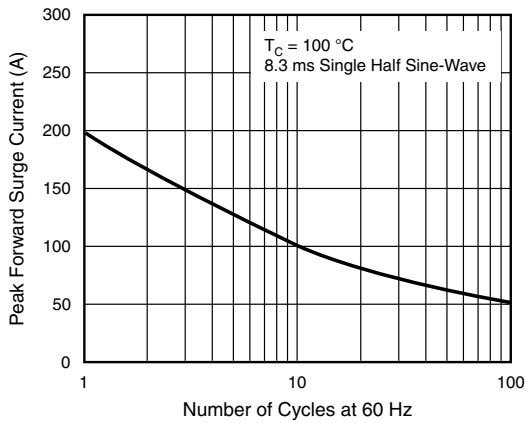


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

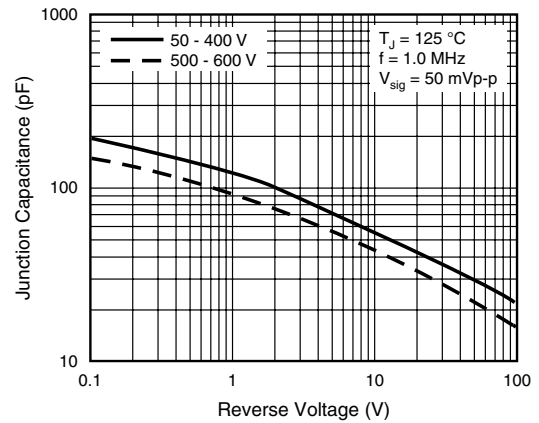


Figure 5. Typical Junction Capacitance Per Diode

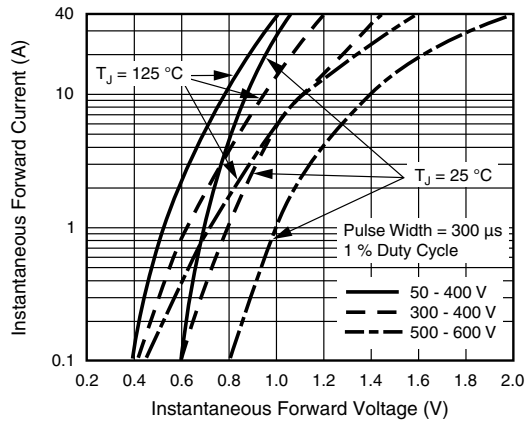
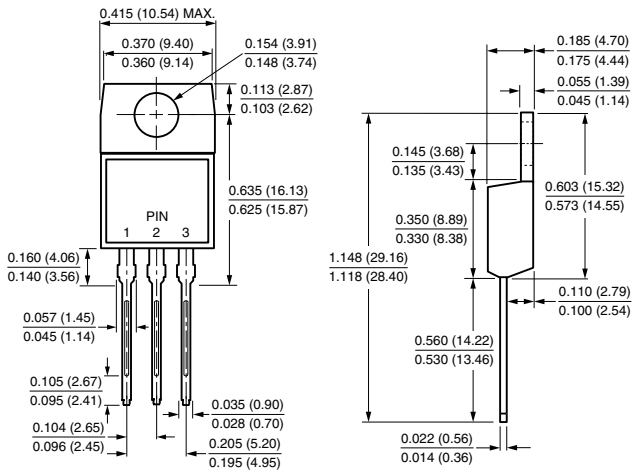


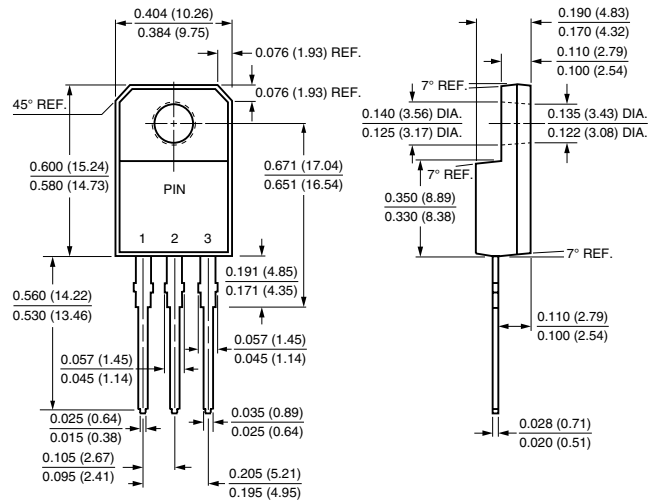
Figure 3. Typical Instantaneous Forward Characteristics Per Diode

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

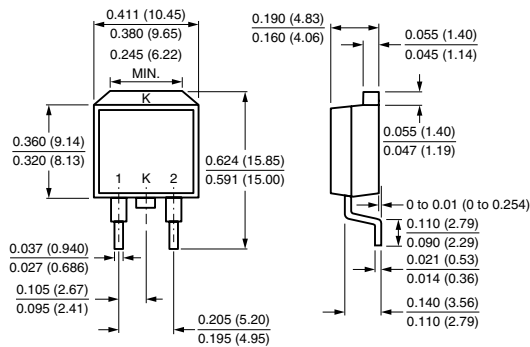
**TO-220AB**



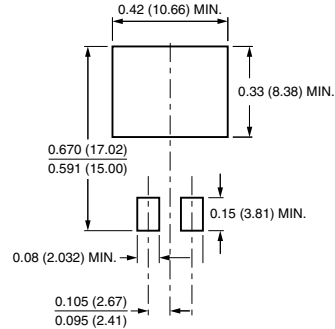
**ITO-220AB**



**TO-263AB**



**Mounting Pad Layout**





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