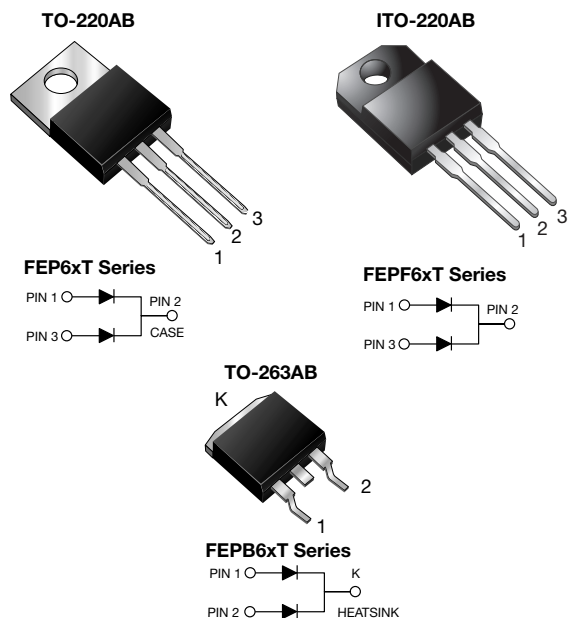


Dual Common Cathode Ultrafast Rectifier



FEATURES

- Power pack
- Glass passivated chip junction
- Ultrafast recovery time
- Low switching losses, high efficiency
- Low leakage current
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for TO-263AB package)
- Solder dip 275 °C max. 10 s, per JESD 22-B106 (for TO-220AB and ITO-220AB package)
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, inverters, freewheeling diodes, DC/DC converters, and other power switching application.

MECHANICAL DATA

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

Molding compound meets UL 94 V-0 flammability rating

Base P/N-E3 - RoHS-compliant, commercial grade

Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs max.

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	6.0 A
V_{RRM}	50 V to 200 V
I_{FSM}	75 A
t_{rr}	35 ns
V_F	0.975 V
T_J max.	150 °C
Package	TO-220AB, ITO-220AB, TO-263AB
Diode variations	Common cathode

MAXIMUM RATINGS ($T_C = 25\text{ °C}$ unless otherwise noted)						
PARAMETER	SYMBOL	FEP6AT	FEP6BT	FEP6CT	FEP6DT	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 $T_C = 105\text{ °C}$	$I_{F(AV)}$	6.0				A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	75				A
Operating storage and temperature range	T_J, T_{STG}	- 55 to + 150				°C
Isolation voltage (ITO-220AB only) from terminal to heatsink $t = 1\text{ min}$	V_{AC}	1500				V

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

PARAMETER	TEST CONDITIONS		SYMBOL	FEP6AT	FEP6BT	FEP6CT	FEP6DT	UNIT
Maximum instantaneous forward voltage per diode	3.0 A		V _F ⁽¹⁾	0.975				V
Maximum DC reverse current at rated DC blocking voltage per diode		T _C = 25 °C	I _R	5.0				μA
		T _C = 100 °C		50				
Maximum reverse recovery time per diode	I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A		t _{rr}	35				ns
Typical junction capacitance per diode	4.0 V, 1 MHz		C _J	28				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	FEP6	FEPF6	FEPB6	UNIT
Typical thermal resistance from junction to case per diode	$R_{\theta JC}$	3.6	5.1	3.6	$^{\circ}\text{C/W}$

ORDERING INFORMATION (Example)

PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	FEP6DT-E3/45	1.81	45	50/tube	Tube
ITO-220AB	FEPF6DT-E3/45	1.97	45	50/tube	Tube
TO-263AB	FEPB6DT-E3/45	1.33	45	50/tube	Tube
TO-263AB	FEPB6DT-E3/81	1.33	81	800/reel	Tape and reel
TO-220AB	FEP6DTHE3/45 ⁽¹⁾	1.81	45	50/tube	Tube
ITO-220AB	FEPF6DTHE3/45 ⁽¹⁾	1.97	45	50/tube	Tube
TO-263AB	FEPB6DTHE3/45 ⁽¹⁾	1.33	45	50/tube	Tube
TO-263AB	FEPB6DTHE3/81 ⁽¹⁾	1.33	81	800/reel	Tape and reel

Note

(1) AEC-Q101 qualified



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

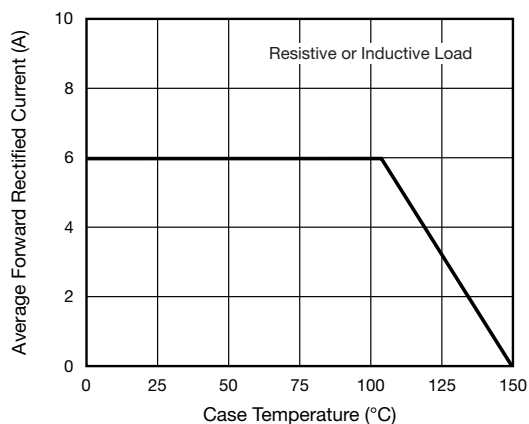


Fig. 1 - Maximum Forward Current Derating Curve

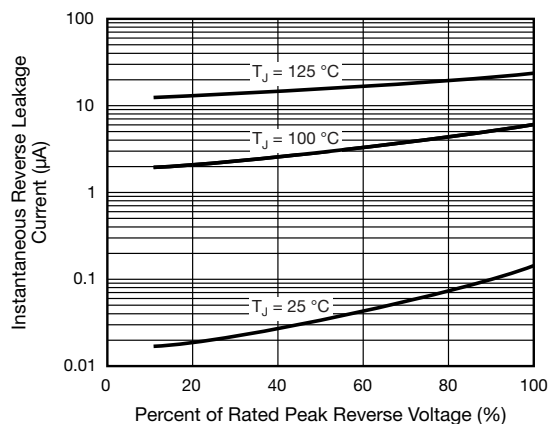


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

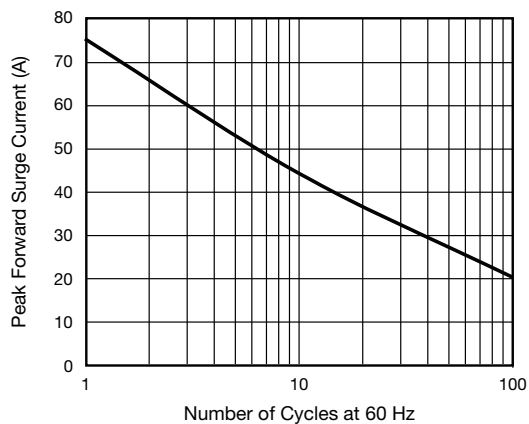


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

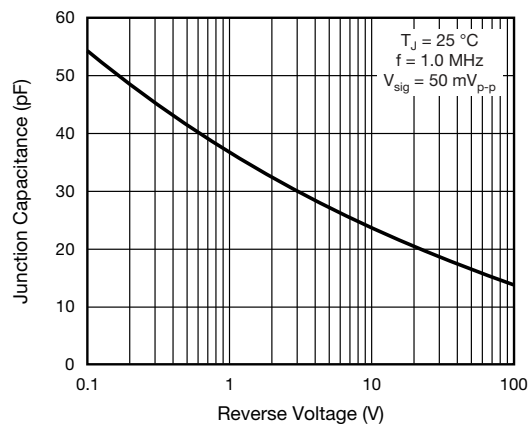


Fig. 5 - Typical Junction Capacitance Per Diode

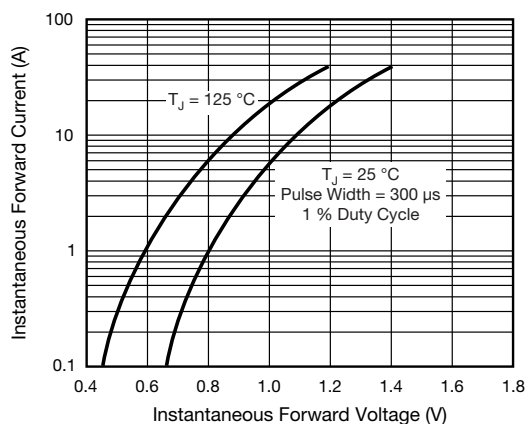
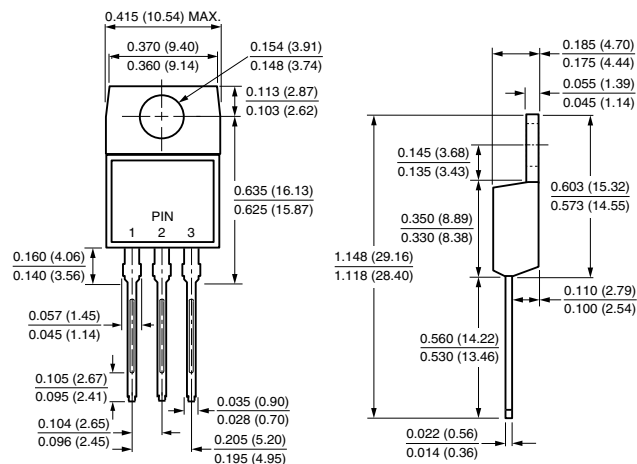


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

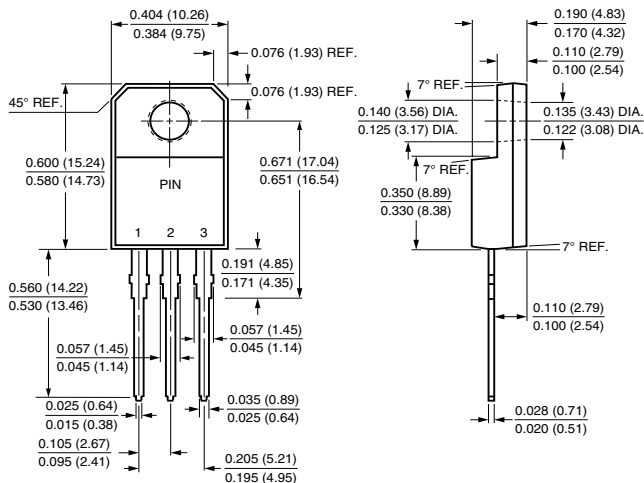


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

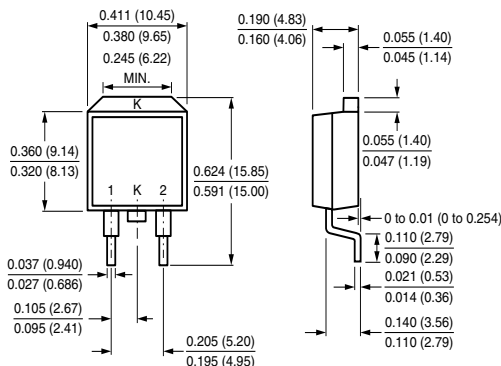
TO-220AB



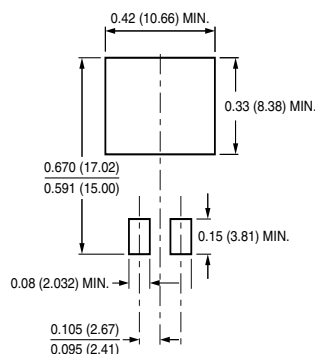
ITO-220AB



TO-263AB



Mounting Pad Layout





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