

Dual Common-Cathode Ultrafast Plastic Rectifier



FEPE16XT Series



FEATURES

- Glass passivated chip junction
- Ultrafast recovery time
- Low switching losses, high efficiency
- Low leakage current
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- 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

Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade

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

E3 suffix meets JESD 201 class 1A whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	2 x 8.0 A
V_{RRM}	50 V to 400 V
I_{FSM}	200 A, 125 A
t_{rr}	35 ns, 50 ns
V_F	0.95 V, 1.30 V
$T_J \text{ max.}$	150 °C

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)

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PARAMETER	SYMBOL	FEPE16AT	FEPE16BT	FEPE16CT	FEPE16DT	FEPE16FT	FEPE16GT	UNIT
Maximum repetitive peak reverse voltage	V _{RRM}	50	100	150	200	300	400	V
Maximum RMS voltage	V _{RMS}	35	70	105	140	210	280	V
Maximum DC blocking voltage	V _{DC}	50	100	150	200	300	400	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 and storage temperature range	T _J , T _{STG}	- 55 to + 150						°C



ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)										
PARAMETER	TEST CONDITIONS		SYMBOL	FEPE16AT	FEPE16BT	FEPE16CT	FEPE16DT	FEPE16FT	FEPE16GT	UNIT
Maximum instantaneous forward voltage per diode	8.0 A		V _F ⁽¹⁾	0.95				1.30		V
Maximum DC reverse current per diode	at rated V _R	T _C = 25 °C	I _R ⁽²⁾	10						μA
		T _C = 100 °C		500						
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						pF

Notes(1) Pulse test: 300 μs pulse width, 1 % duty cycle(2) Pulse test: Pulse width $\leq 40\text{ ms}$

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
PARAMETER		SYMBOL	FEPE16AT	FEPE16BT	FEPE16CT	FEPE16DT	FEPE16FT	FEPE16GT	UNIT
Typical thermal resistance	per diode	R _{θJC}	2.2						°C/W
	per device	R _{θJA} ⁽¹⁾	50						

Note(1) The heat generated must be less than the thermal conductivity from junction-to-ambient: $dP_D/dT_J < 1/R_{\theta JA}$

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	FEPE16GT-E3/45	1.92	45	50/tube	Tube

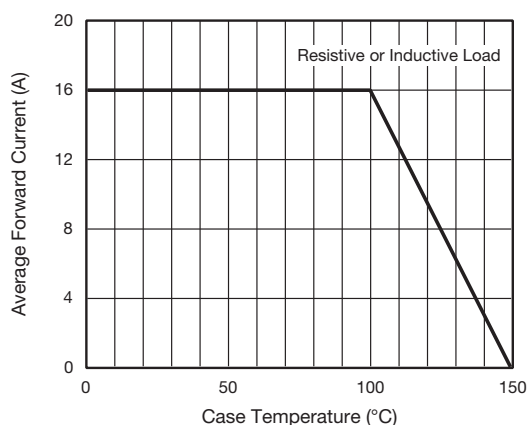
RATINGS AND CHARACTERISTICS CURVES($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

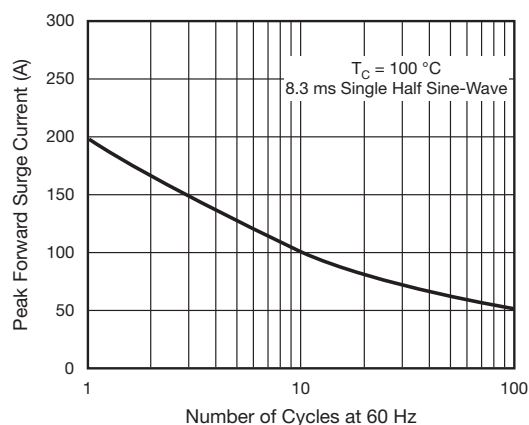


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

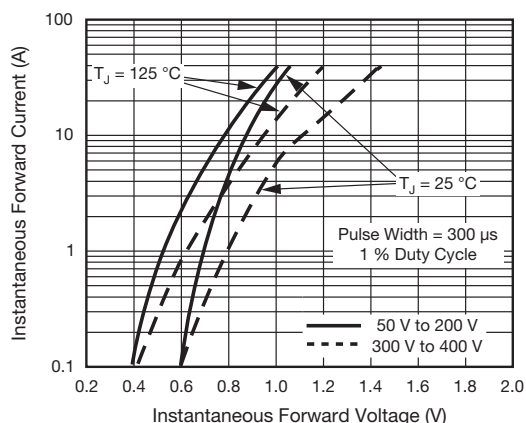


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

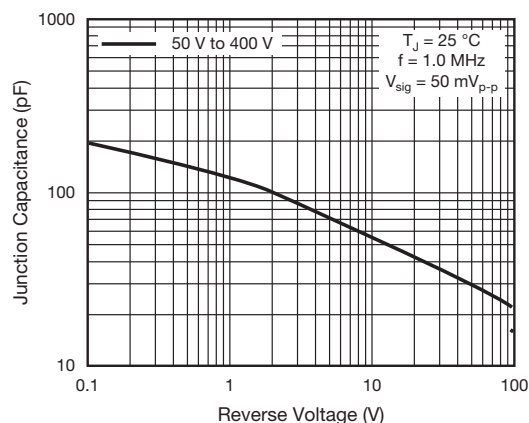


Fig. 5 - Typical Junction Capacitance Per Diode

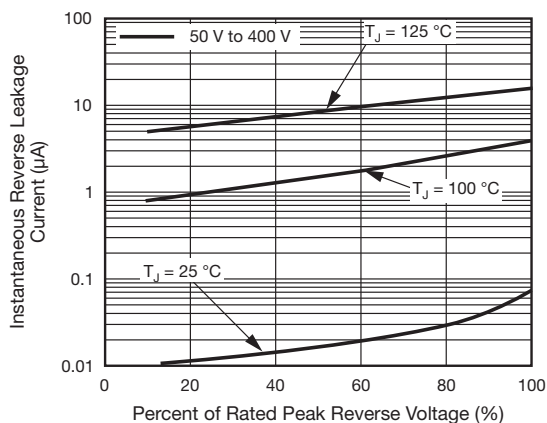
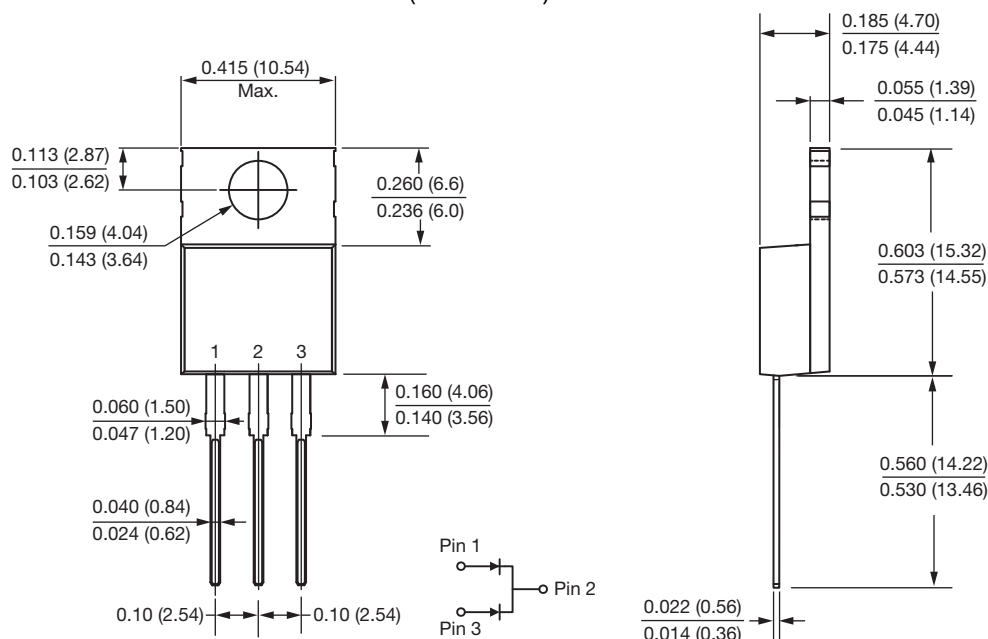


Fig. 4 - Typical Reverse Characteristics Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)




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