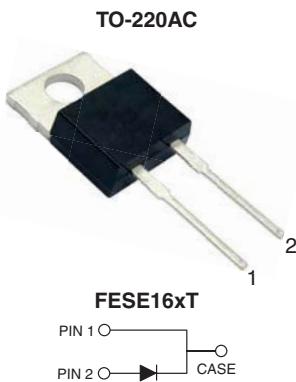


Ultrafast Plastic Rectifier



FEATURES

- Power pack
- Glass passivated chip junction
- Ultrafast recovery time
- Low switching losses, high efficiency
- 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-220AC

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 max.

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	16 A
V_{RRM}	50 V to 600 V
I_{FSM}	250 A
t_{rr}	35 ns, 50 ns
V_F	0.975 V, 1.30 V, 1.50 V
T_J max.	150 °C
Package	TO-220AC
Diode variations	Single die

MAXIMUM RATINGS ($T_C = 25$ °C unless otherwise noted)										
PARAMETER	SYMBOL	FESE 16AT	FESE 16BT	FESE 16CT	FESE 16DT	FESE 16FT	FESE 16GT	FESE 16HT	FESE 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	I_{FSM}	250							A	
Operating storage and temperature range	T_J, T_{STG}	-65 to +150							°C	

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)															
PARAMETER	TEST CONDITIONS	SYMBOL	FESE 16AT	FESE 16BT	FESE 16CT	FESE 16DT	FESE 16FT	FESE 16GT	FESE 16HT	FESE 16JT	UNIT				
Maximum instantaneous forward voltage	16 A	V_F ⁽¹⁾	0.975				1.30		1.50		V				
Maximum DC reverse current at rated DC blocking voltage	$T_C = 25^\circ\text{C}$	I_R	10								μA				
	$T_C = 100^\circ\text{C}$		500												
Maximum reverse recovery time	$I_F = 0.5 \text{ A}$, $I_R = 1.0 \text{ A}$, $I_{rr} = 0.25 \text{ A}$	t_{rr}	35				50				ns				
Typical junction capacitance	4.0 V, 1 MHz	C_J	175						145		pF				

Note

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)											
PARAMETER	SYMBOL	FESE 16AT	FESE 16BT	FESE 16CT	FESE 16DT	FESE 16FT	FESE 16GT	FESE 16HT	FESE 16JT	UNIT	
Typical thermal resistance, junction to case	$R_{\theta JC}$	1.2								$^\circ\text{C/W}$	

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AC	FESE16JT-E3/45	1.78	45	50/tube	Tube

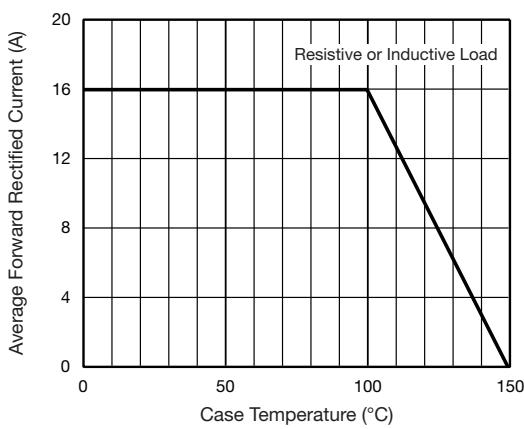
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Maximum Forward Current Derating Curve

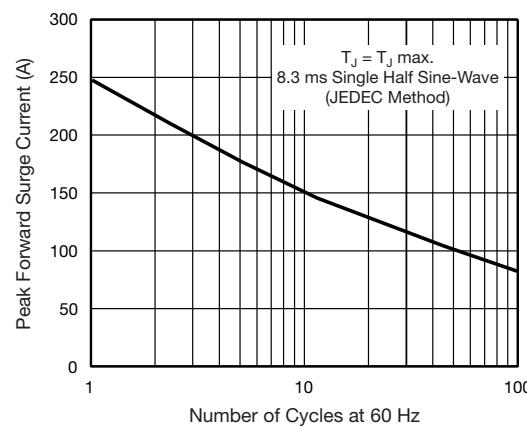


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

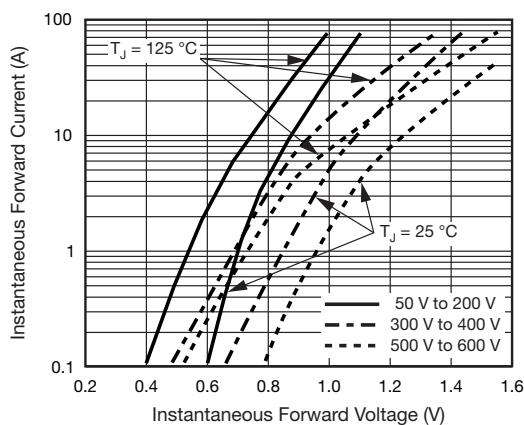


Fig. 3 - Typical Instantaneous Forward Characteristics

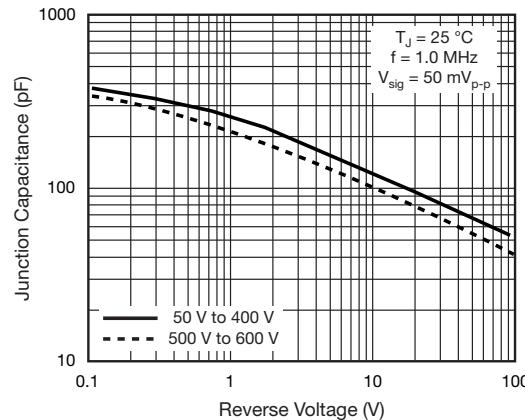


Fig. 5 - Typical Junction Capacitance

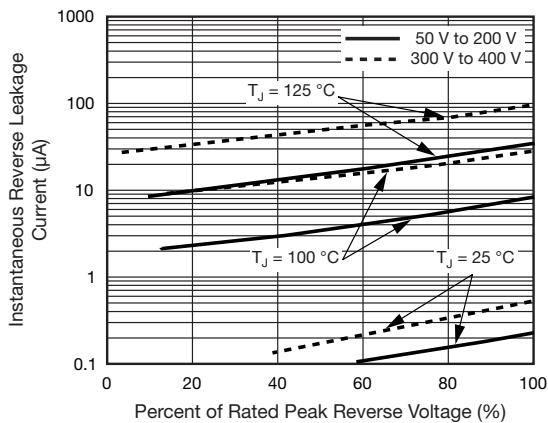
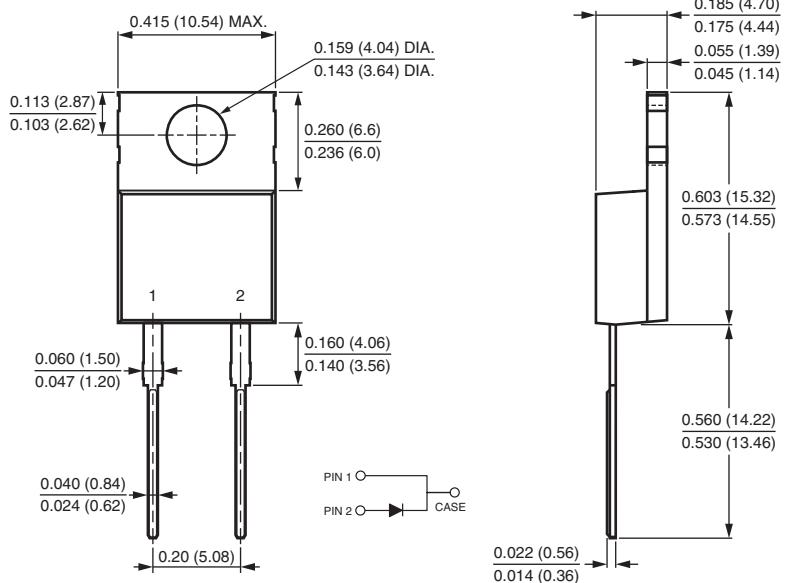


Fig. 4 - Typical Reverse Leakage Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AC



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