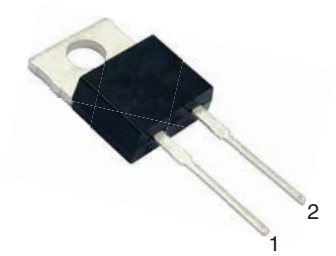
Ultrafast Plastic Rectifier

TO-220AC



FESE8xT

FEATURES

- Power pack
- Glass passivated pellet 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-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 JESD22-B102
E3 suffix meets JESD 201 class 1A whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs max.

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	8.0 A
V_{RRM}	50 V to 600 V
I_{FSM}	125 A
t_{rr}	35 ns, 50 ns
V_F	0.95 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	FESE8AT	FESE8BT	FESE8CT	FESE8DT	FESE8FT	FESE8GT	FESE8HT	FESE8JT	UNIT
Max. repetitive peak reverse voltage	V_{RRM}	50	100	150	200	300	400	500	600	V
Max. RMS voltage	V_{RMS}	35	70	105	140	210	280	350	420	V
Max. DC blocking voltage	V_{DC}	50	100	150	200	300	400	500	600	V
Max. average forward rectified current at T_C = 100 °C	$I_{F(AV)}$	8.0								A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	125								A
Operating storage and temperature range	T_J, T_{STG}	-55 to +150								°C

ELECTRICAL CHARACTERISTICS (T_C = 25 °C unless otherwise noted)												
PARAMETER	TEST CONDITIONS		SYMBOL	FESE8AT	FESE8BT	FESE8CT	FESE8DT	FESE8FT	FESE8GT	FESE8HT	FESE8JT	UNIT
Max. instantaneous forward voltage (1)	8.0 A		V_F	0.95				1.3		1.5		V
Max. DC reverse current at rated DC blocking voltage		T_C = 25 °C	I_R	10								µA
		T_C = 100 °C		500								
Max. reverse recovery time	I_F = 0.5 A, I_R = 1.0 I_{rr} = 0.25 A		t_{rr}	35				50				ns
Typical junction capacitance	4.0 V, 1 MHz		C_J	85						50		pF

Note

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

THERMAL CHARACTERISTICS (T_C = 25 °C unless otherwise noted)										
PARAMETER	SYMBOL	FESE8AT	FESE8BT	FESE8CT	FESE8DT	FESE8FT	FESE8GT	FESE8HT	FESE8JT	UNIT
Typical thermal resistance from junction to case	$R_{\theta JC}$	2.2								°C/W

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AC	FESE8JT-E3/45	1.80	45	50/tube	Tube

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

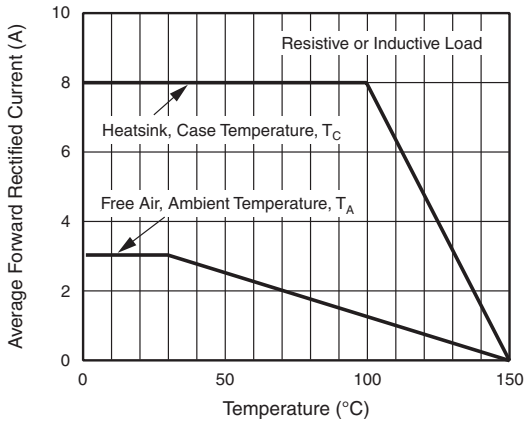


Fig. 1 - Max. Forward Current Derating Curve

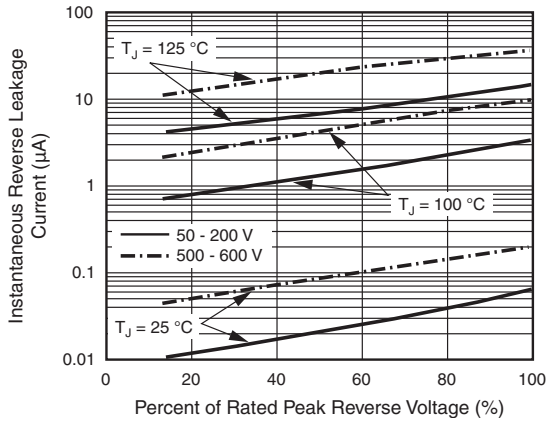


Fig. 4 - Typical Reverse Leakage Characteristics

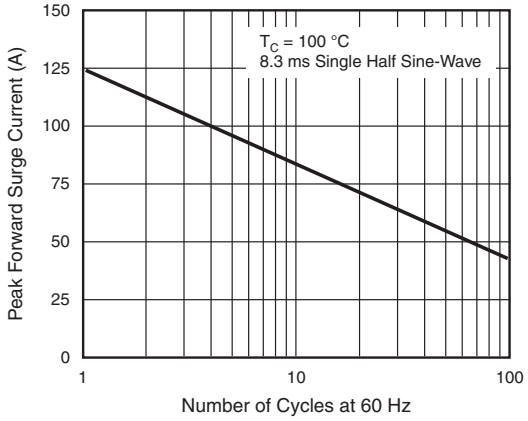


Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current

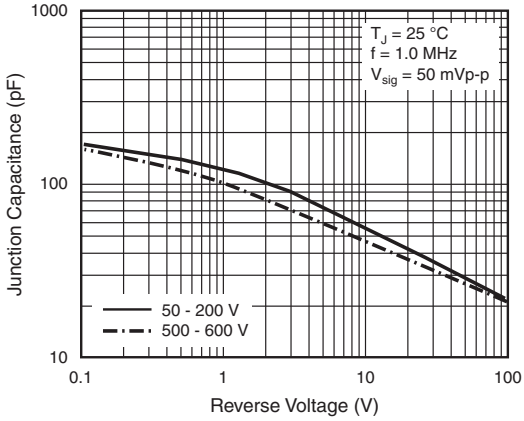


Fig. 5 - Typical Junction Capacitance

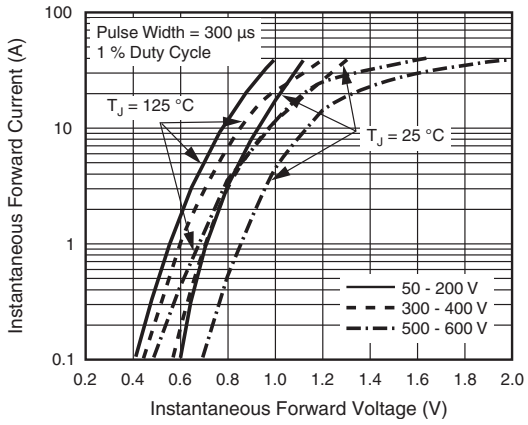
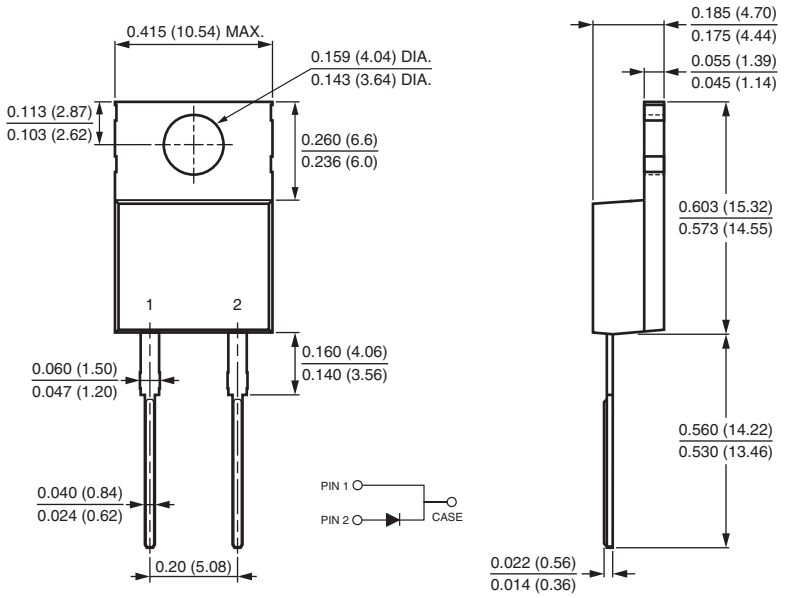


Fig. 3 - Typical Instantaneous Forward Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AC



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