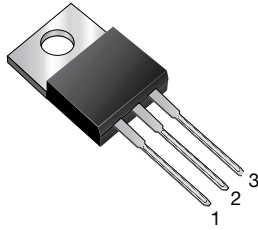
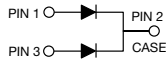
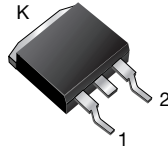
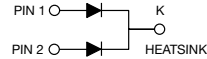


## Dual Common Cathode Ultrafast Plastic Rectifier

**TO-220AB**

**FEP16xT**

**D<sup>2</sup>PAK (TO-263AB)**

**FEPB16xT**


**RoHS**  
COMPLIANT  
**HALOGEN**  
**FREE**  
Available

### FEATURES

- Power pack
- Glass passivated pellet chip junction
- Ultrafast recovery time
- Low switching losses, high efficiency
- 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 package
- AEC-Q101 qualified available
  - Automotive ordering code: base P/NHM3 for D<sup>2</sup>PAK (TO-263AB package)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

### LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 8.0 A
$V_{RRM}$	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
Package	TO-220AB, D <sup>2</sup> PAK (TO-263AB)
Circuit configurations	Common cathode

### 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, D<sup>2</sup>PAK (TO-263AB)

Molding compound meets UL 94 V-0 flammability rating

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

Base P/N-M3 - RoHS-compliant, halogen-free, commercial grade

Base P/NHM3 - RoHS-compliant, halogen-free, AEC-Q101 qualified

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

E3 and M3 suffix meets JESD 201 class 1A whisker test, HM3 suffix meets JESD 201 class 2 whisker test

**Polarity:** as marked

**Mounting Torque:** 10 in-lbs max.



MAXIMUM RATINGS ( $T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted)										
PARAMETER	SYMBOL	FEP16AT	FEP16BT	FEP16CT	FEP16DT FEPB16DT	FEP16FT	FEP16GT FEPB16GT	FEP16HT	FEP16JT FEPB16JT	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 $T_C = 100\text{ }^\circ\text{C}$	$I_{F(AV)}$	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								$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ( $T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted)											
PARAMETER	TEST CONDITIONS	SYMBOL	FEP16AT	FEP16BT	FEP16CT	FEP16DT FEPB16DT	FEP16FT	FEP16GT FEPB16GT	FEP16HT	FEP16JT FEPB16JT	UNIT
Maximum instantaneous forward voltage per diode	8.0 A	$V_F^{(1)}$	0.95				1.30		1.50		V
Maximum DC reverse current per diode at rated DC blocking voltage	$T_C = 25\text{ }^\circ\text{C}$	$I_R$	10								$\mu\text{A}$
	$T_C = 100\text{ }^\circ\text{C}$		500								
Maximum reverse recovery time per diode	$I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $I_{rr} = 0.25\text{ A}$	$t_{rr}$	35				50				ns
Typical junction capacitance 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

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

ORDERING INFORMATION (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
D <sup>2</sup> PAK (TO-263AB)	FEPB16JT-M3/I	1.35	I	800/reel	Tape and reel
D <sup>2</sup> PAK (TO-263AB)	FEPB16JTHM3/I (1)	1.35	I	800/reel	Tape and reel

**Note**

(1) AEC-Q101 qualified

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

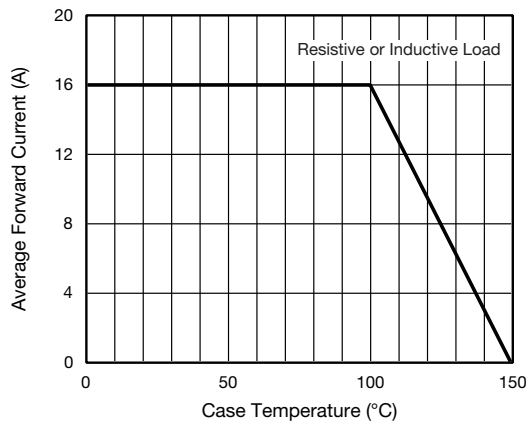


Fig. 1 - Forward Current Derating Curve

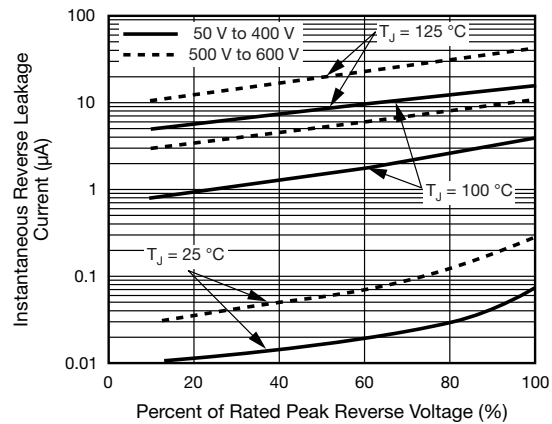


Fig. 4 - Typical Reverse Characteristics Per Diode

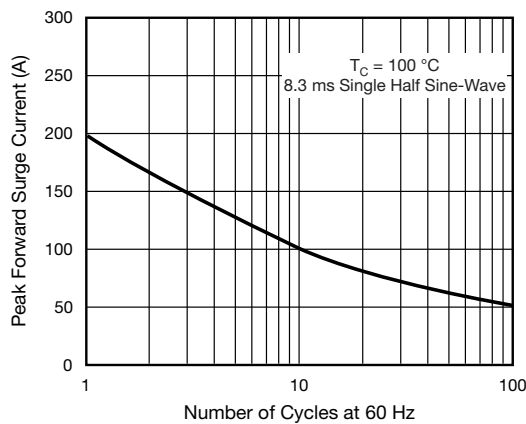


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

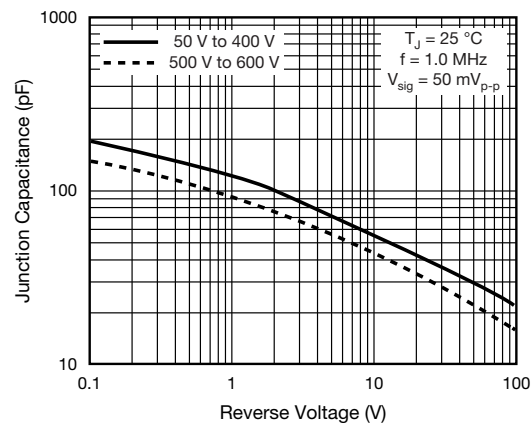


Fig. 5 - Typical Junction Capacitance Per Diode

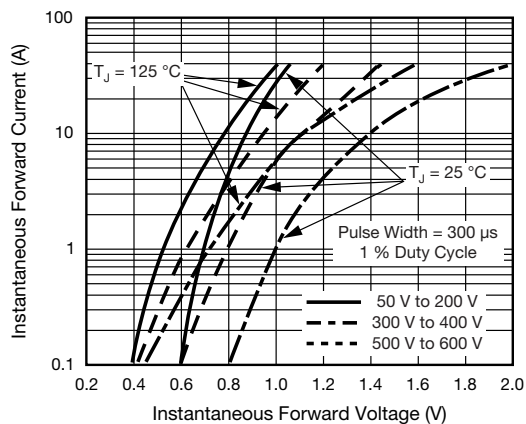
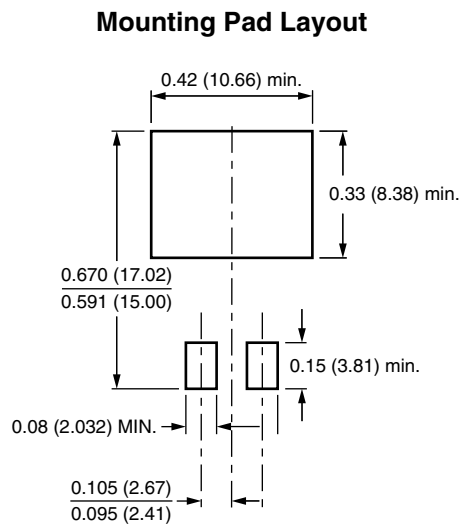
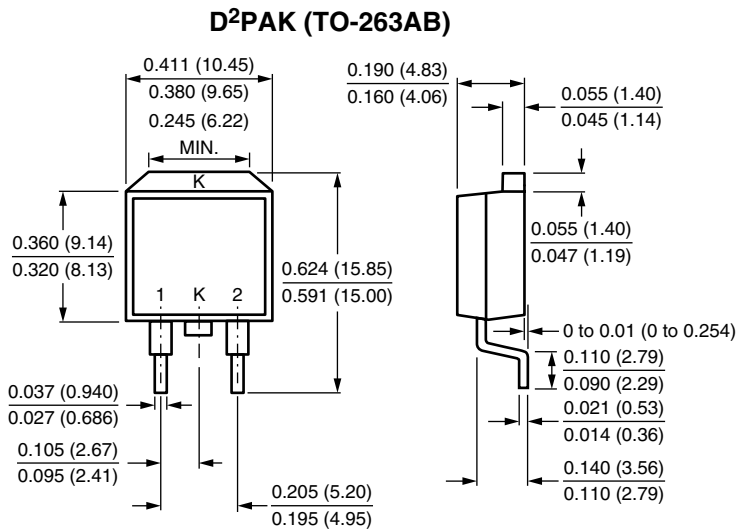
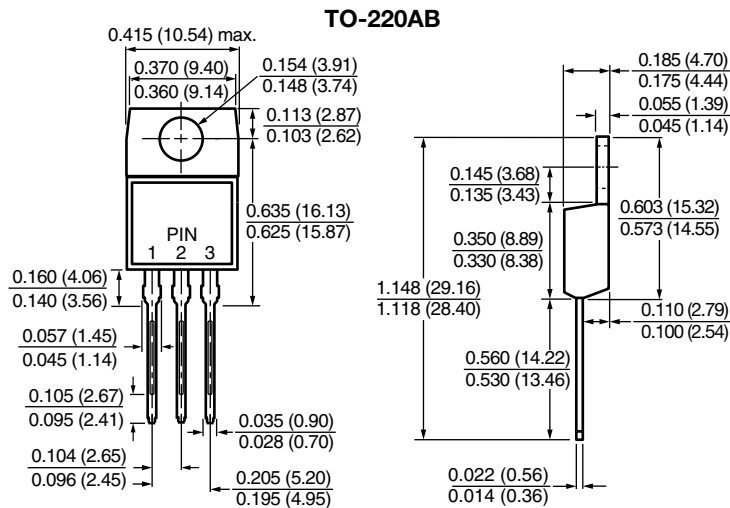


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode



### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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