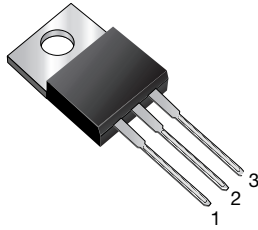
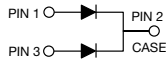
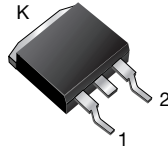
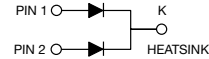




**THE DATASHEET OF  
FEPB16GT-E3/81**



## 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 <sub>C</sub> = 25 °C unless otherwise noted)										
PARAMETER	SYMBOL	FEP16AT	FEP16BT	FEP16CT	FEP16DT FEPB16DT	FEP16FT	FEP16GT FEPB16GT	FEP16HT	FEP16JT FEPB16JT	UNIT
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	50	100	150	200	300	400	500	600	V
Maximum RMS voltage	V <sub>RMS</sub>	35	70	105	140	210	280	350	420	V
Maximum DC blocking voltage	V <sub>DC</sub>	50	100	150	200	300	400	500	600	V
Maximum average forward rectified current at T <sub>C</sub> = 100 °C	I <sub>F(AV)</sub>	16								A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I <sub>FSM</sub>	200				125				A
Operating storage and temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150								°C

ELECTRICAL CHARACTERISTICS (T <sub>C</sub> = 25 °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 <sub>F</sub> <sup>(1)</sup>	0.95				1.30		1.50		V
Maximum DC reverse current per diode at rated DC blocking voltage	T <sub>C</sub> = 25 °C	I <sub>R</sub>	10								μA
	T <sub>C</sub> = 100 °C		500								
Maximum reverse recovery time per diode	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A	t <sub>rr</sub>	35				50				ns
Typical junction capacitance per diode	4.0 V, 1 MHz	C <sub>J</sub>	85					60			pF

**Note**

<sup>(1)</sup> Pulse test: 300 μs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T <sub>C</sub> = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	FEP	FEPF	FEPB	UNIT
Typical thermal resistance from junction to case per diode	R <sub>θJC</sub>	2.2	3.1	2.2	°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 <sup>(1)</sup>	1.35	I	800/reel	Tape and reel

**Note**

<sup>(1)</sup> AEC-Q101 qualified



RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)

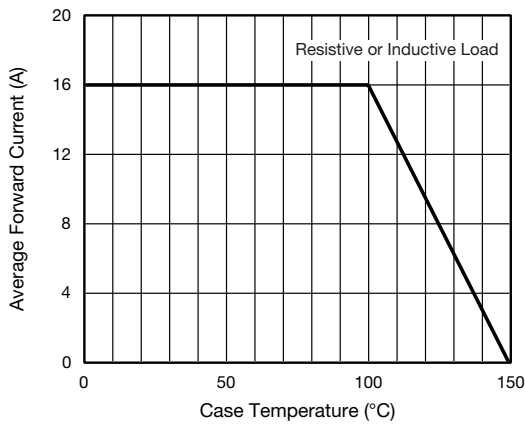


Fig. 1 - Forward Current Derating Curve

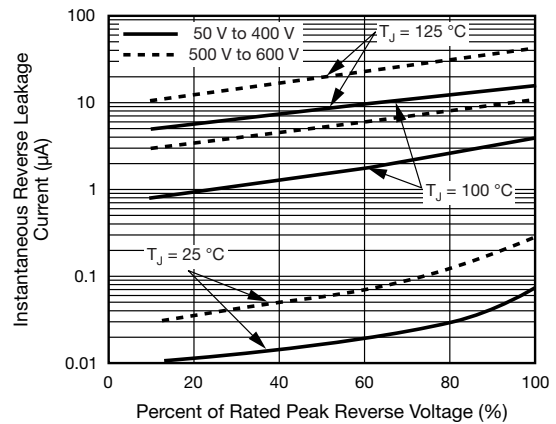


Fig. 4 - Typical Reverse Characteristics Per Diode

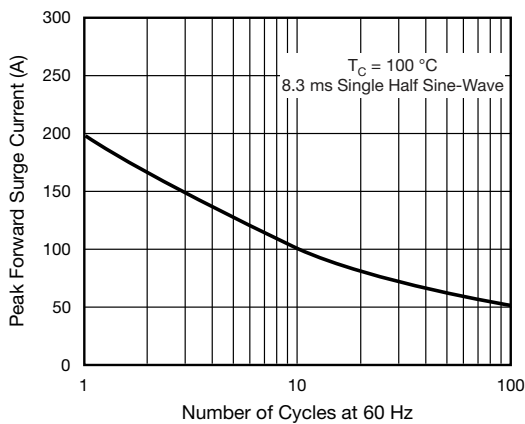


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

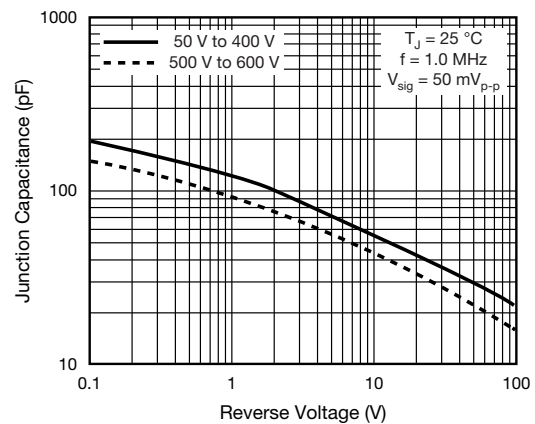


Fig. 5 - Typical Junction Capacitance Per Diode

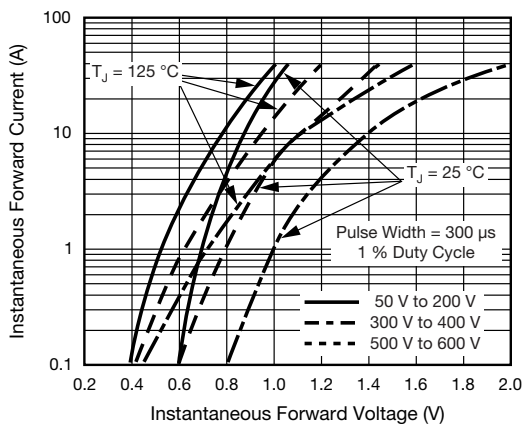
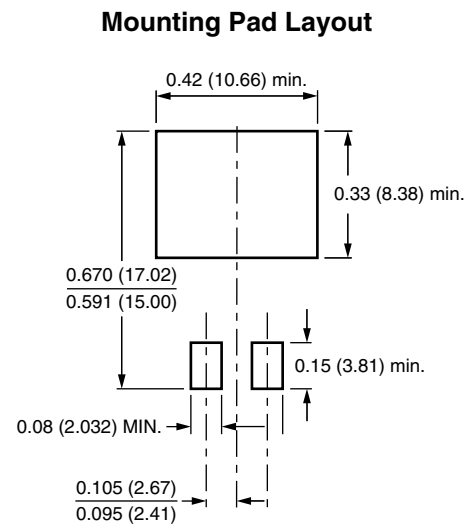
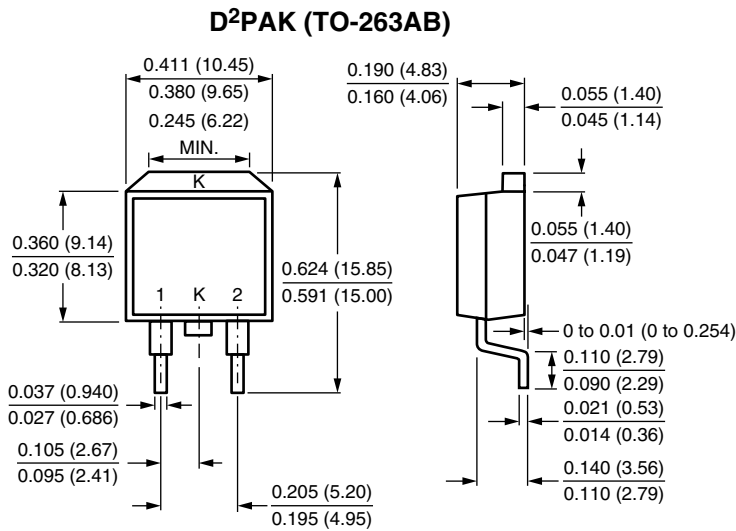
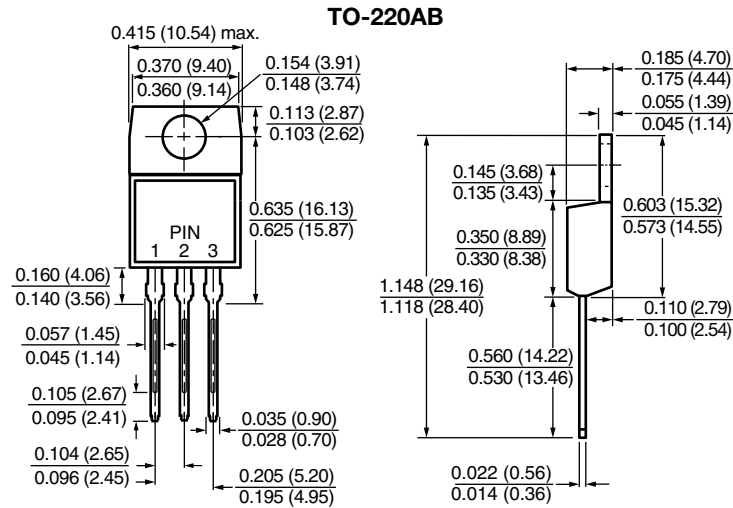


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode



### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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