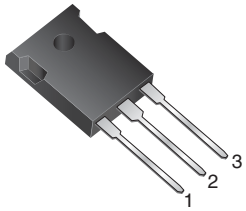
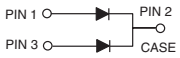
Dual Common Cathode Ultrafast Rectifier



TO-247AD (TO-3P)



FEATURES

- Power pack
- Glass passivated pellet chip junction
- Ultrafast recovery time
- Low switching losses, high efficiency
- Low thermal resistance
- High forward surge capability
- Solder dip 260 °C, 40 s
- 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-247AD (TO-3P)
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	
$I_{F(AV)}$	30 A
V_{RRM}	50 V, 100 V, 150 V, 200 V, 300 V, 400 V, 500 V, 600 V
I_{FSM}	300 A
t_{rr}	35 ns, 50 ns
V_F at I_F = 15 A	0.95 V, 1.3 V, 1.5 V
T_J max.	150 °C
Package	TO-247AD (TO-3P)
Diode variations	Dual common cathode

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	FEP 30AP	FEP 30BP	FEP 30CP	FEP 30DP	FEP 30FP	FEP 30GP	FEP 30HP	FEP 30JP	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	$I_{F(AV)}$	30								A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	300								A
Operating storage and temperature range	T_J, T_{STG}	-55 to +150								°C/W

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)											
PARAMETER	**TEST CONDITIONS**	**SYMBOL**	**FEP 30AP**	**FEP 30BP**	**FEP 30CP**	**FEP 30DP**	**FEP 30FP**	**FEP 30GP**	**FEP 30HP**	**FEP 30JP**	**UNIT**
Maximum instantaneous forward voltage per diode	15.0 A	V_F	0.95				1.3		1.5		V
Maximum DC reverse current at rated DC blocking voltage per diode	T_C = 25 °C	I_R	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	175						145		pF

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)										
PARAMETER	**SYMBOL**	**FEP 30AP**	**FEP 30BP**	**FEP 30CP**	**FEP 30DP**	**FEP 30FP**	**FEP 30GP**	**FEP 30HP**	**FEP 30JP**	**UNIT**
Typical thermal resistance per diode	$R_{\theta JC}$ (1)	1.0								°C/W

Note

(1) Thermal resistance from junction to case per diode mounted on heatsink

ORDERING INFORMATION (Example)					
PACKAGE	**PREFERRED P/N**	**UNIT WEIGHT (g)**	**PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
TO-247AD	FEP30JP-E3/45	6.15	30	30/tube	Tube

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

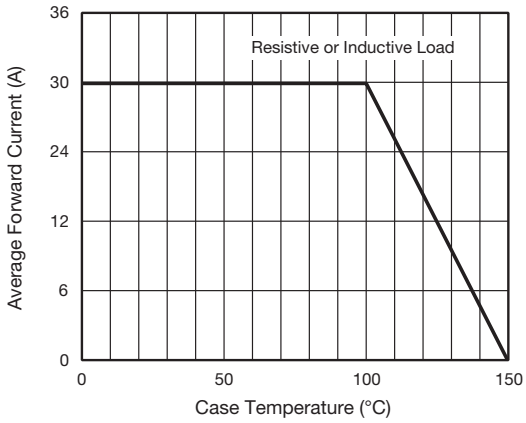


Fig. 1 - Forward Current Derating Curve

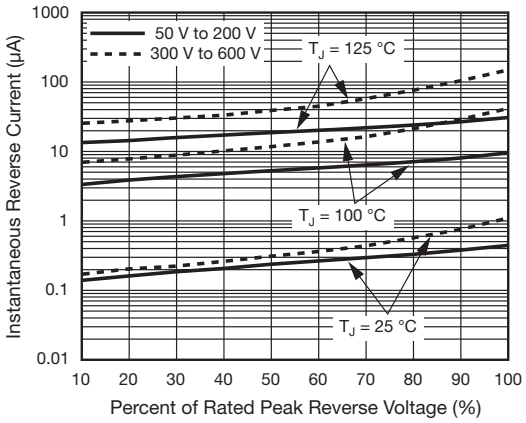


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

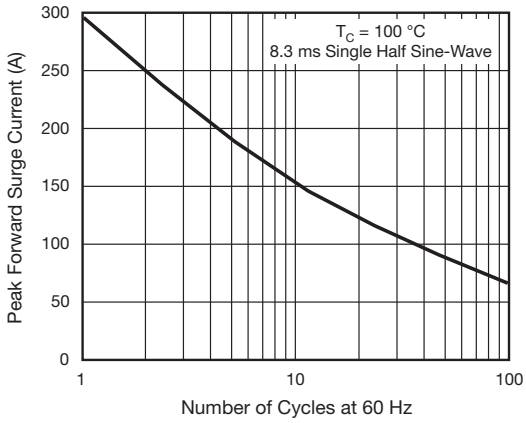


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

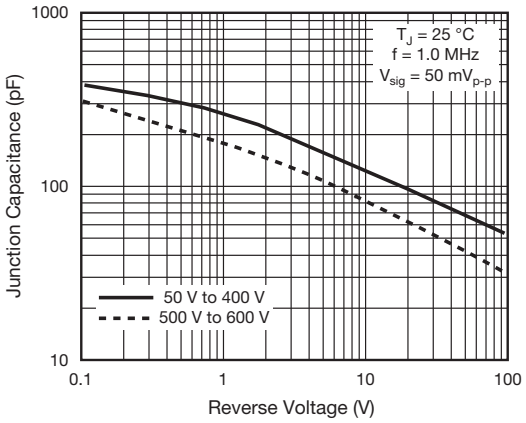


Fig. 5 - Typical Junction Capacitance Per Diode

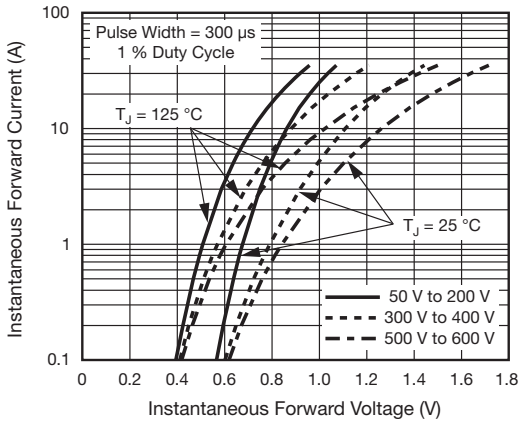
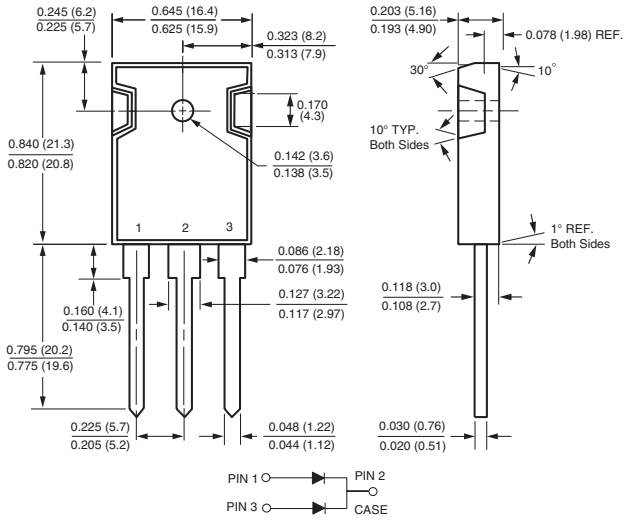


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-247AD (TO-3P)



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