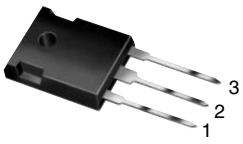
Dual Common Cathode Ultrafast Rectifier



TO-247AD (TO-3P)



FEATURES

- Glass passivated chip junction
- Ultrafast recovery time
- Low switching losses, high efficiency
- Low thermal resistance
- High forward surge capability
- Solder Dip 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, inverters, free-wheeling diodes, dc-to-dc converters, and other power switching application.

MECHANICAL DATA

Case: TO-247AD (TO-3P)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D
E3 suffix for commercial grade

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	30 A
V_{RRM}	50 V to 600 V
I_{FSM}	300 A
t_{rr}	35 ns, 50 ns
V_F	0.95 V, 1.3 V, 1.5 V
T_j max.	150 °C

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	at 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 T_C = 100	I_R	10 500								µA
Maximum reverse recovery time per diode	at I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25A	t_{rr}	35				50				ns
Typical junction capacitance per diode	at 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 (1)	$R_{\theta JC}$	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)

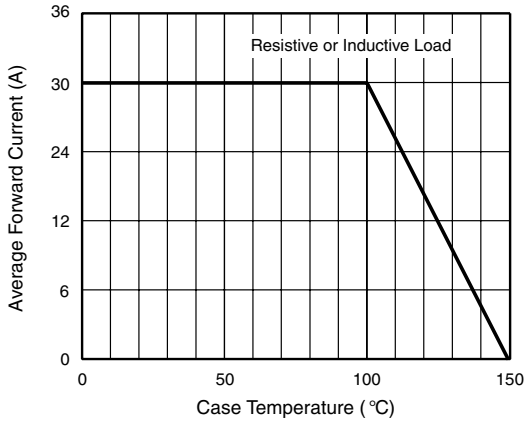


Figure 1. Forward Current Derating Curve

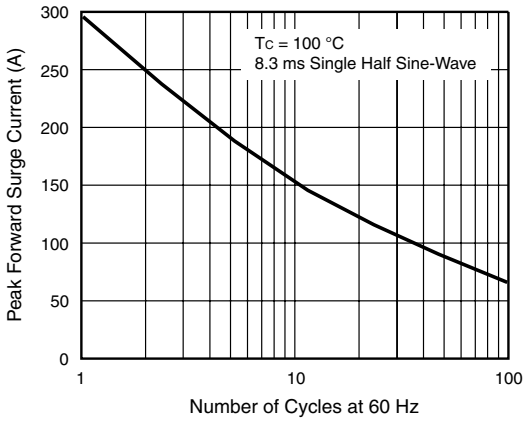


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

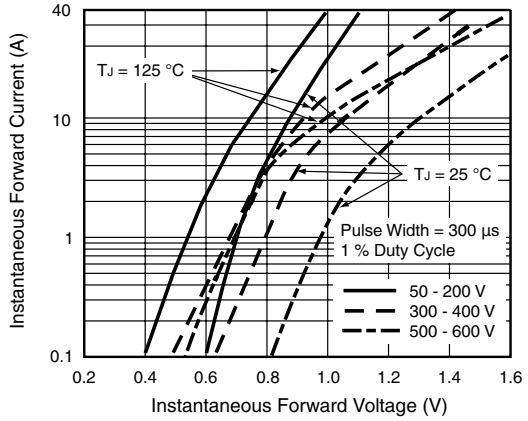


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

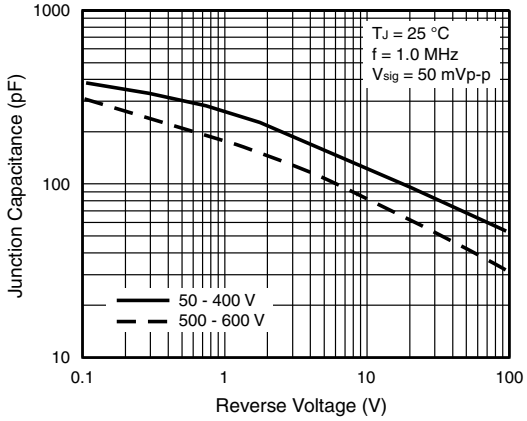


Figure 5. Typical Junction Capacitance Per Diode

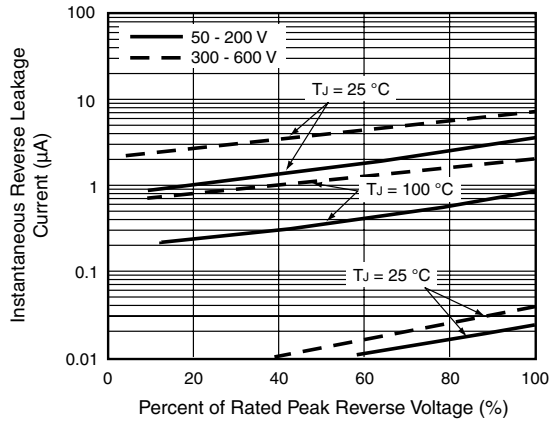
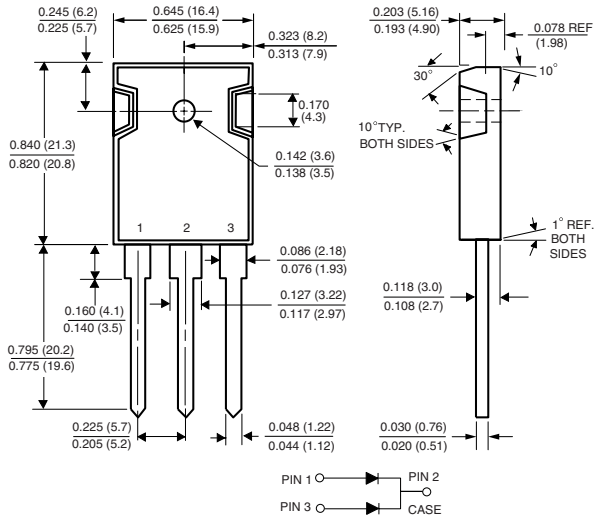


Figure 4. Typical Reverse Characteristics Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-247AD (TO-3P)



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