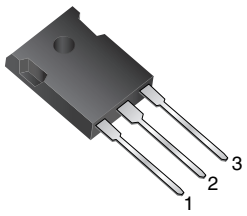
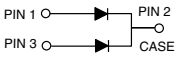
Dual Common Cathode Ultrafast Plastic Rectifier



TO-247AD (TO-3P)



FEATURES

- Power pack
- Glass passivated chip junction
- Ultrafast recovery time
- Low switching losses, high efficiency
- Low forward voltage drop
- 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.

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	30 A
V_{RRM}	50 V, 100 V, 150 V, 200 V
I_{FSM}	300 A
t_{rr}	25 ns
V_F at I_F	0.85 V
T_J max.	150 °C
Package	TO-247AD (TO-3P)
Diode variation	Common cathode

MECHANICAL DATA

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

Molding compound meets UL 94V-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 for consumer grade, meets JESD 201 class 1A whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs max.

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	UG30APT	UG30BPT	UG30CPT	UG30DPT	UNIT
Max. repetitive peak reverse voltage	V_{RRM}	50	100	150	200	V
Max. RMS voltage	V_{RMS}	35	70	105	140	V
Max. DC blocking voltage	V_{DC}	50	100	150	200	V
Max. average forward rectified current at T_C = 120 °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 and storage temperature range	T_J, T_{STG}	- 65 to + 150				°C

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)								
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**UG30APT**	**UG30BPT**	**UG30CPT**	**UG30DPT**	**UNIT**
Max. instantaneous forward voltage per diode	15 A	T_J = 100 °C	V_F	1.0				V
	30 A			1.15				
	10 A			0.85				
Max. DC reverse current at rated DC blocking voltage per diode		T_A = 25 °C	I_R	15				μA
		T_A = 100 °C		800				
Max. reverse recovery time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A		t_{rr}	25				ns
Max. reverse recovery time	I_F = 15 A, V_R = 30 V, dI/dt = 50 A/μs, I_{RR} = 10 % I_{RM}	T_J = 25 °C	t_{rr}	35				ns
		T_J = 100 °C		50				
Max. recovered stored charge	I_F = 15 A, V_R = 30 V, dI/dt = 50 A/μs, I_{RR} = 10 % I_{RM}	T_J = 25 °C	Q_{rr}	22				nC
		T_J = 100 °C		50				
Typical junction capacitance	4.0 V, 1 MHz		C_J	70				pF

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	**SYMBOL**	**UG30APT**	**UG30BPT**	**UG30CPT**	**UG30DPT**	**UNIT**
Typical thermal resistance per diode (1)	$R_{\theta JC}$	2.0				°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	UG30DPT-E3/45	6.15	30	30/tube	Tube

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

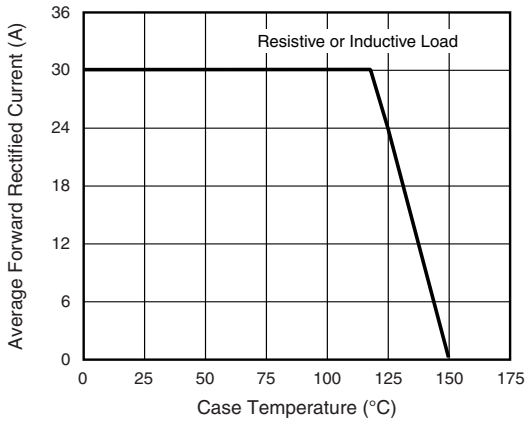


Fig. 1 - Max. Forward Current Derating Curve

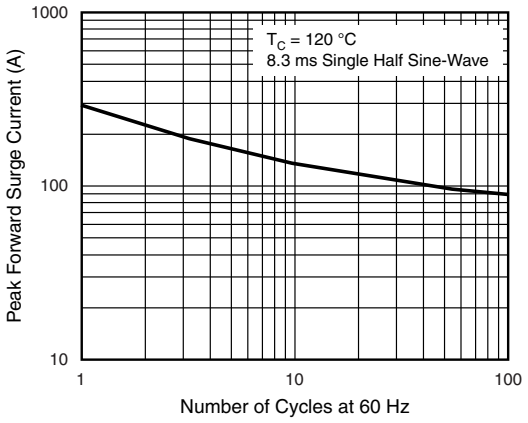


Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current Per Diode

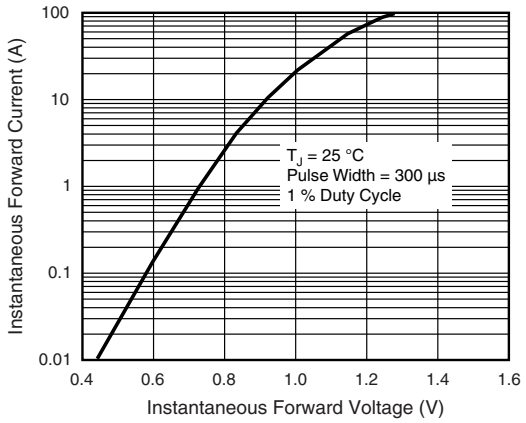


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

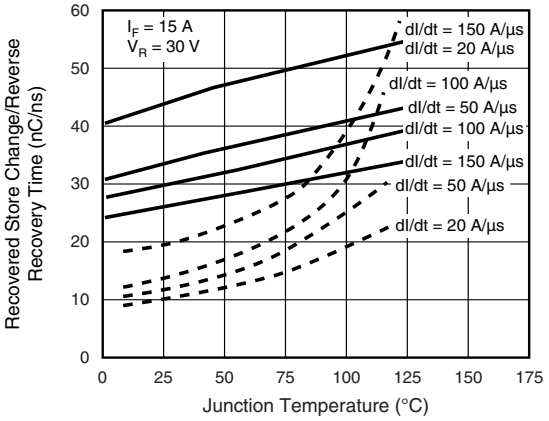


Fig. 5 - Reverse Switching Characteristics Per Diode

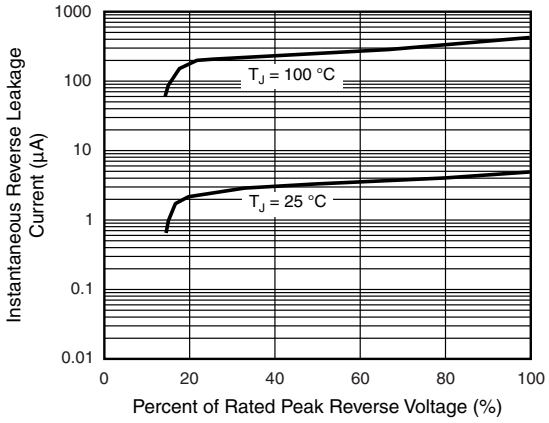


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

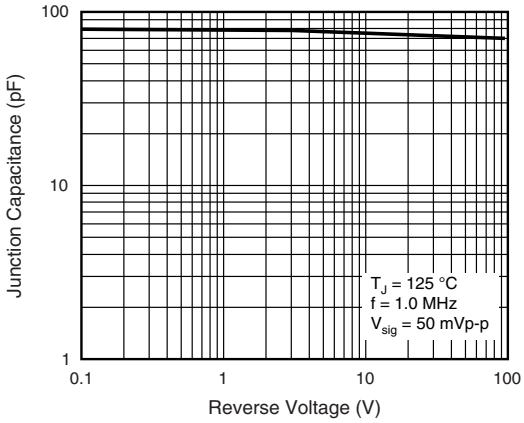
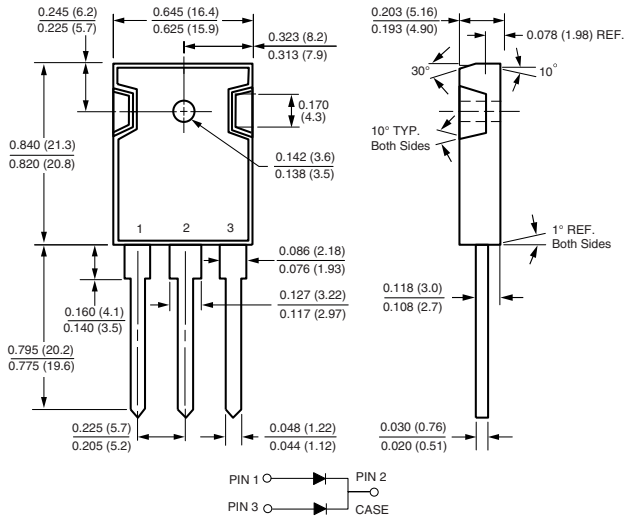


Fig. 6 - Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-247AD (TO-3P)



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