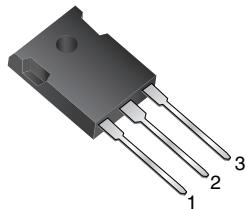


Dual Common Cathode Ultrafast Plastic Rectifier


TO-3P (TO-247AD)


FEATURES

- Power pack
- Glass passivated pellet 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.

MECHANICAL DATA

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

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.

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-3P (TO-247AD)
Circuit configuration	Common cathode

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 ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	TEST CONDITIONS		SYMBOL	UG30APT	UG30BPT	UG30CPT	UG30DPT	UNIT				
Max. instantaneous forward voltage per diode	15 A		V _F	1.0		V		V				
	30 A			1.15								
	10 A			0.85								
Max. DC reverse current at rated DC blocking voltage per diode		$T_A = 25^\circ\text{C}$	I _R	15		μA		μA				
				$T_A = 100^\circ\text{C}$								
Max. reverse recovery time	$I_F = 0.5 \text{ A}$, $I_R = 1.0 \text{ A}$, $I_{RR} = 0.25 \text{ A}$	$T_J = 25^\circ\text{C}$	t _{rr}	25		ns		ns				
Max. reverse recovery time				$T_J = 100^\circ\text{C}$								
				35		ns						
Max. recovered stored charge	$I_F = 15 \text{ A}$, $V_R = 30 \text{ V}$, $dI/dt = 50 \text{ A}/\mu\text{s}$, $I_{RR} = 10 \% I_{RM}$	$T_J = 25^\circ\text{C}$	Q _{rr}	50			nC	nC				
				$T_J = 100^\circ\text{C}$		22						
Typical junction capacitance	4.0 V, 1 MHz		C _J	50		70		pF				

THERMAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	UG30APT	UG30BPT	UG30CPT	UG30DPT	UNIT
Typical thermal resistance per diode ⁽¹⁾	R _{θJC}	2.0		°C/W		°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

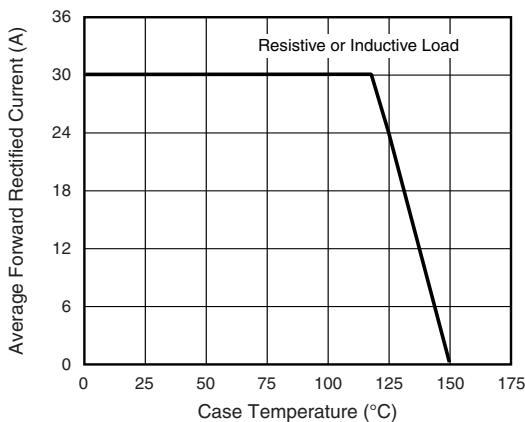
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Max. Forward Current Derating Curve

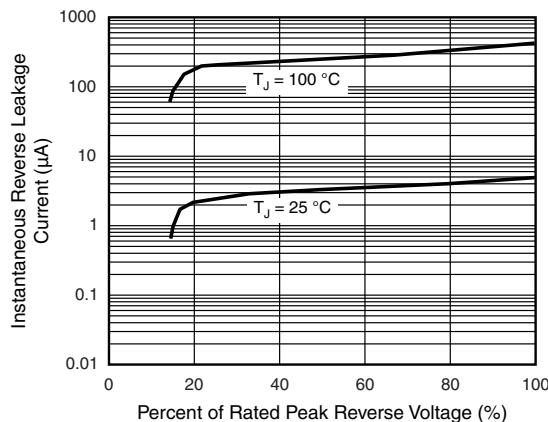


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

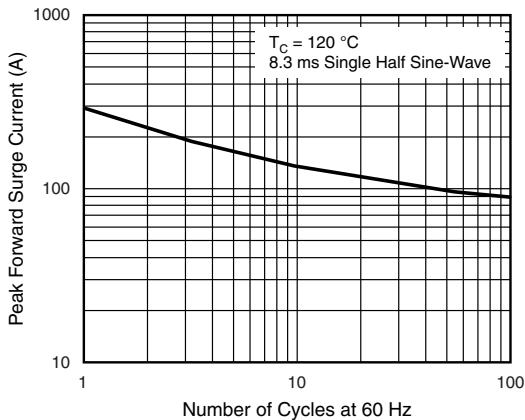


Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current Per Diode

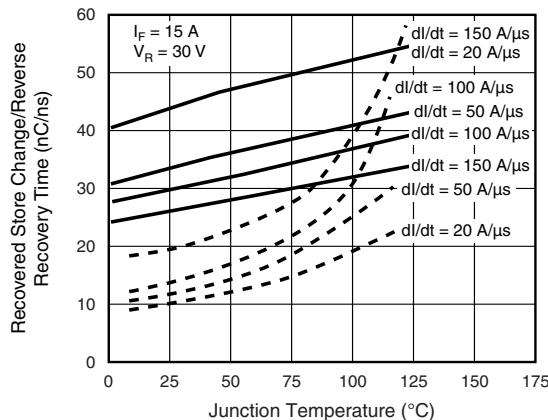


Fig. 5 - Reverse Switching Characteristics Per Diode

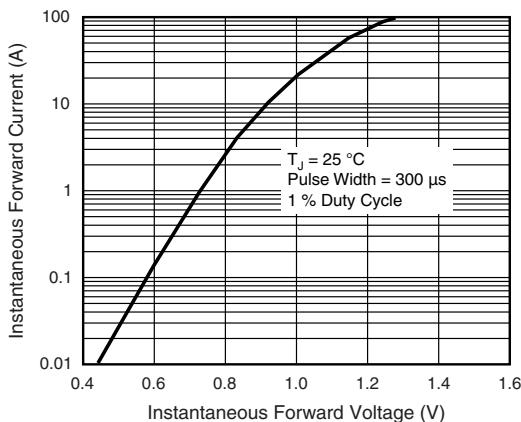


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

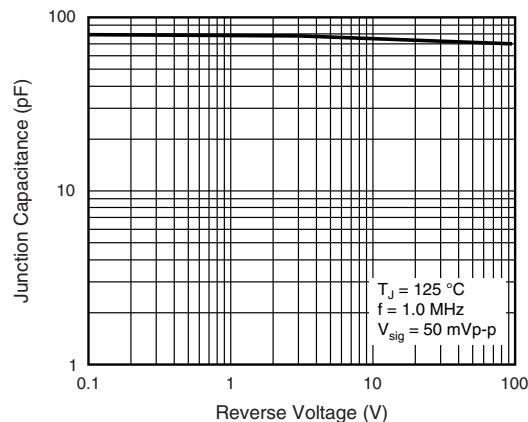
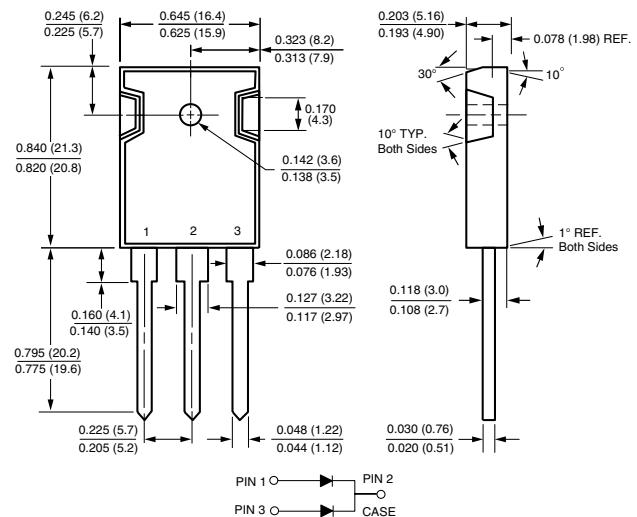


Fig. 6 - Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-3P (TO-247AD)



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