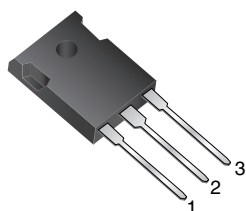


Dual Common Cathode Schottky Rectifier


TO-3P (TO-247AD)


FEATURES

- Power pack
- Guardring for overvoltage protection
- Lower power losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



TYPICAL APPLICATIONS

For use in low voltage, high frequency rectifier of switching mode power supplies, freewheeling diodes, DC/DC converters, or polarity protection application.

MECHANICAL DATA

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

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 JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

Polarity: as marked

Mounting Torque: 10 in-lbs maximum

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	30 A
V_{RRM}	45 V
I_{FSM}	400 A
V_F	0.47 V
T_J max.	150 °C
Package	TO-3P (TO-247AD)
Circuit configuration	Common cathode

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)			
PARAMETER	SYMBOL	SD241P	UNIT
Maximum repetitive peak reverse voltage $T_C = 25\text{ °C}$	V_{RRM}	45	V
Maximum blocking voltage $T_C = 25\text{ °C}$	V_{DC}	45	V
Maximum working peak reverse voltage	V_{RWM}	35	V
Maximum average forward rectified current at $T_C = 105\text{ °C}$	$I_{F(AV)}$	30	A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	400	A
Peak repetitive reverse surge current per diode	$I_{RSM}^{(1)}$	2.0	A
Voltage rate of change $V_R = 35\text{ V}$	dV/dt	10 000	V/ μ s
Operating junction temperature range	T_J	-65 to +150	°C
Storage temperature range	T_{STG}	-65 to +175	°C

Note

⁽¹⁾ 2.0 μ s pulse width, $f = 1.0\text{ kHz}$

ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	TEST CONDITIONS		SD241P	UNIT
Maximum instantaneous forward voltage	V _F ⁽¹⁾	I _F = 10 A	T _C = 25 °C	0.47	V
		I _F = 20 A	T _C = 125 °C	0.60	
Maximum reverse current at rated V _R	I _R ⁽¹⁾	V _R = 35 V	T _C = 25 °C	1.0	mA
			T _C = 125 °C	100	mA

Note

⁽¹⁾ Pulse test: 300 μ s pulse width, 1 % duty cycle

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

PARAMETER	SYMBOL	SD241P	UNIT
Maximum thermal resistance, junction of case per diode	$R_{\theta JC}$	1.4	$^{\circ}\text{C/W}$

ORDERING INFORMATION (Example)

PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-247AD	SD241P-E3/45	6.13	45	30/tube	Tube

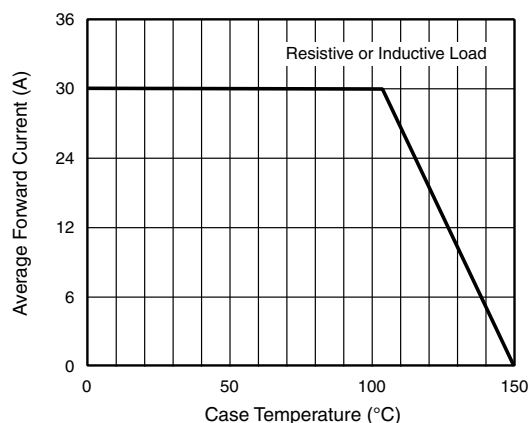
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

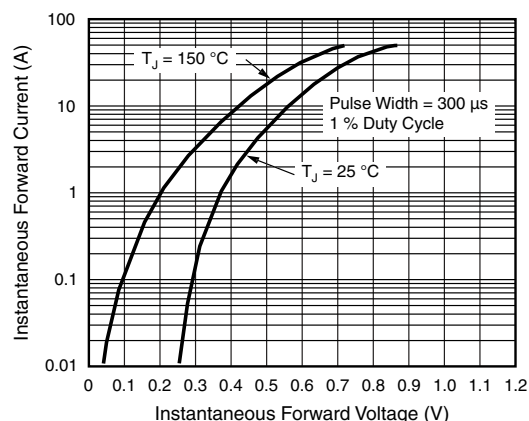


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

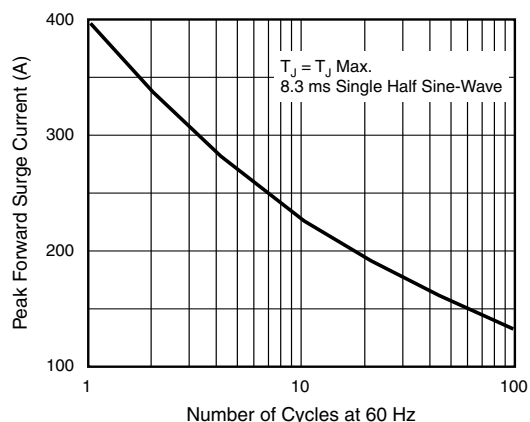


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

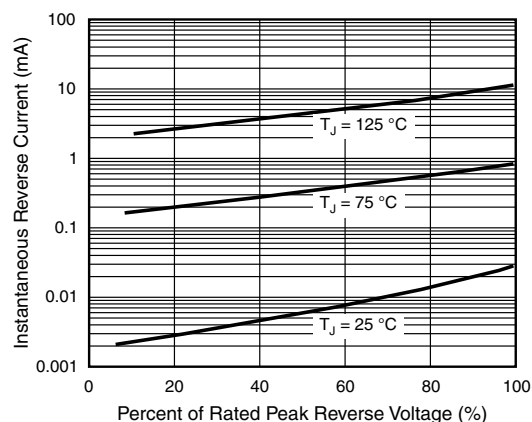


Fig. 4 - Typical Reverse Characteristics Per Diode

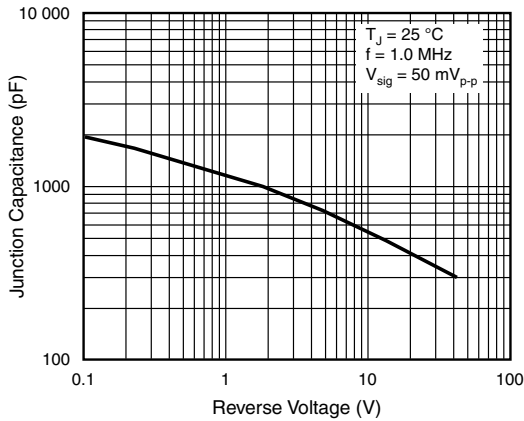


Fig. 5 - Typical Junction Capacitance Per Diode

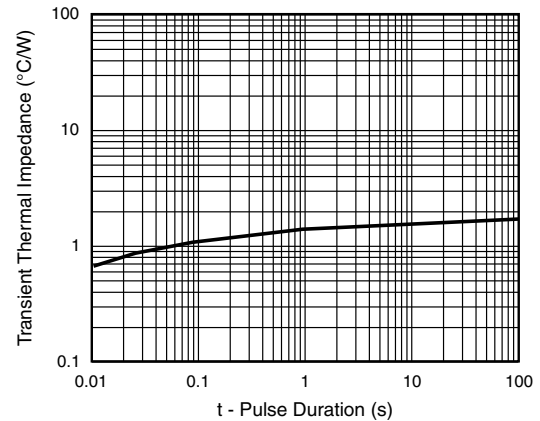
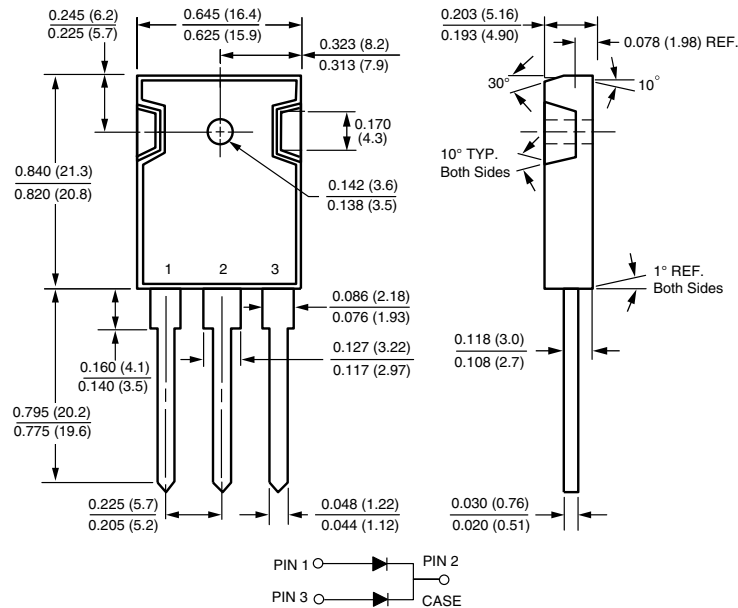


Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-3P (TO-247AD)





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