

TO-247AD (TO-3P)

Schottky Barrier Rectifier

Reverse Voltage 45 V

Forward Current 30 A

Features

- Plastic package has Underwriters Laboratory Flammability Classifications 94V-0
- Dual rectifier construction, positive center-tap
- Metal silicon junction, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low forward voltage drop
- High surge capability
- For use in low voltage, high frequency inverters, free-wheeling, and polarity protection applications
- Guardring for overvoltage protection
- High temperature soldering guaranteed: 250°C/10 seconds, 0.17" (4.3mm) from case

Mechanical Data

Case: JEDEC TO-247AD molded plastic body

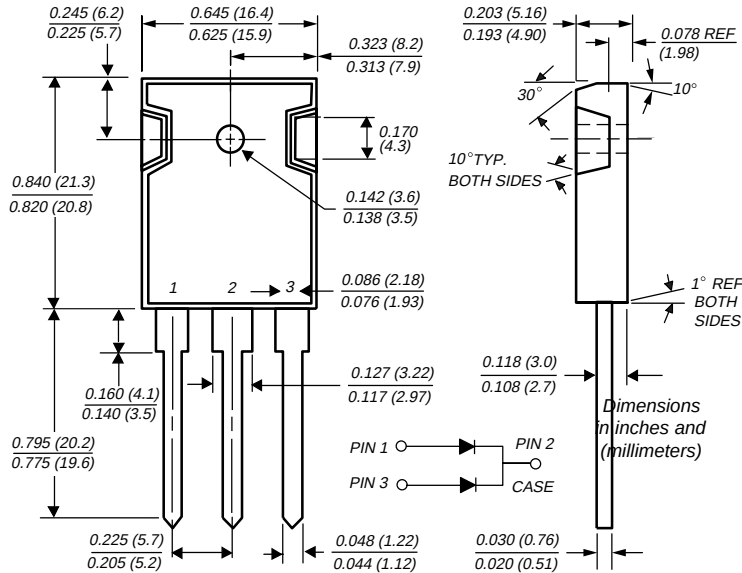
Terminals: Lead solderable per MIL-STD-750, Method 2026

Polarity: As marked

Mounting Position: Any

Mounting Torque: 10 in-lbs max.

Weight: 0.2 ounce, 5.6 grams



Maximum Ratings & Thermal Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	SD241P	Unit
Maximum repetitive peak reverse voltage at $T_C = 25^\circ\text{C}$	V_{RRM}	45	V
Maximum blocking voltage at $T_C = 25^\circ\text{C}$	V_{DC}	45	V
Maximum working peak reverse voltage	V_{RWM}	35	V
Maximum average forward rectified current at $T_C = 105^\circ\text{C}$	$I_F(AV)$	30	A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	400	A
Peak repetitive reverse surge current (NOTE 1)	I_{RSM}	2.0	A
Voltage rate of change at $V_R = 35\text{V}$	dv/dt	10,000	V/ μs
Maximum thermal resistance from junction of case per leg	$R_{\theta JC}$	1.4	$^\circ\text{C}$
Operating junction temperature range	T_J	-65 to +150	$^\circ\text{C}$
Storage temperature range	T_{STG}	-65 to +175	$^\circ\text{C}$

Electrical Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	SD241P	Unit
Maximum instantaneous forward voltage per leg at (NOTE 2) $I_F = 10\text{A}, T_C = 125^\circ\text{C}$ $I_F = 20\text{A}, T_C = 125^\circ\text{C}$	V_F	0.47 0.60	V
Maximum instantaneous reverse current reverse voltage per leg at $V_R = 35\text{V}$ (NOTE 2) $T_C = 25^\circ\text{C}$ $T_C = 125^\circ\text{C}$	I_R	1.0 100	mA

NOTES:

(1) 2.0 μs pulse width, $f = 1.0\text{ KHz}$

(2) Pulse test: 300 μs pulse width, 1% duty cycle

Ratings and Characteristic Curves (T_A = 25°C unless otherwise noted)

FIG. 1 - FORWARD CURRENT DERATING CURVE

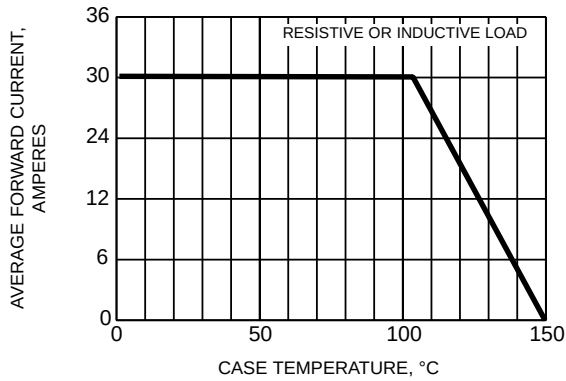


FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PER LEG

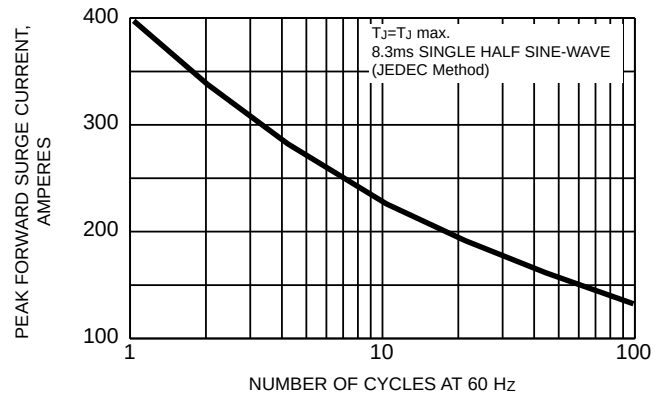


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

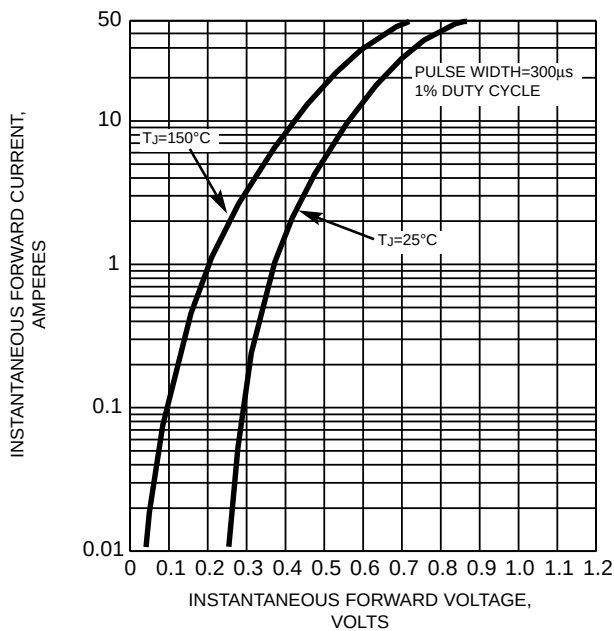


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS PER LEG

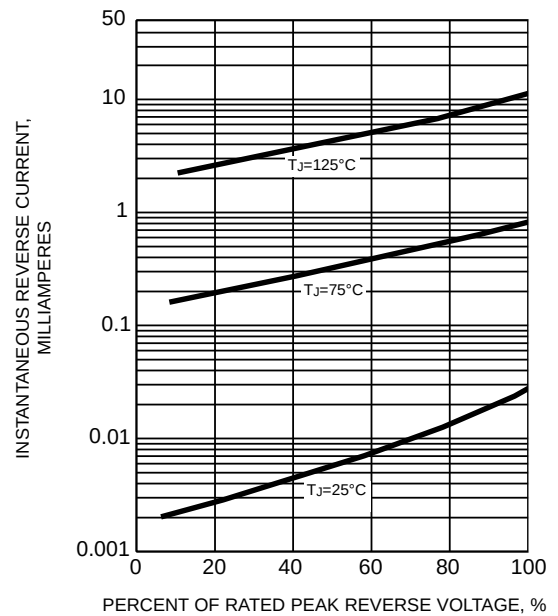


FIG. 5 - TYPICAL JUNCTION CAPACITANCE PER LEG

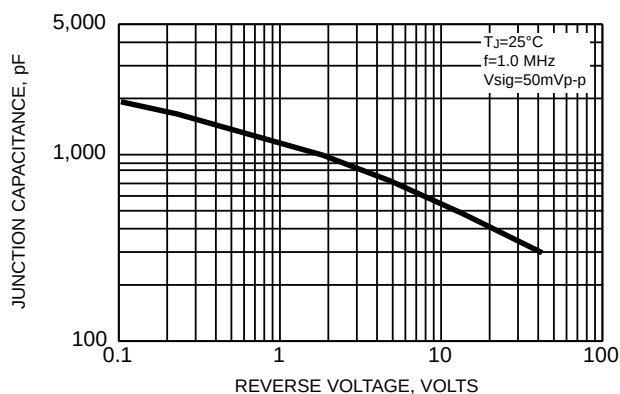


FIG. 6 - TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

