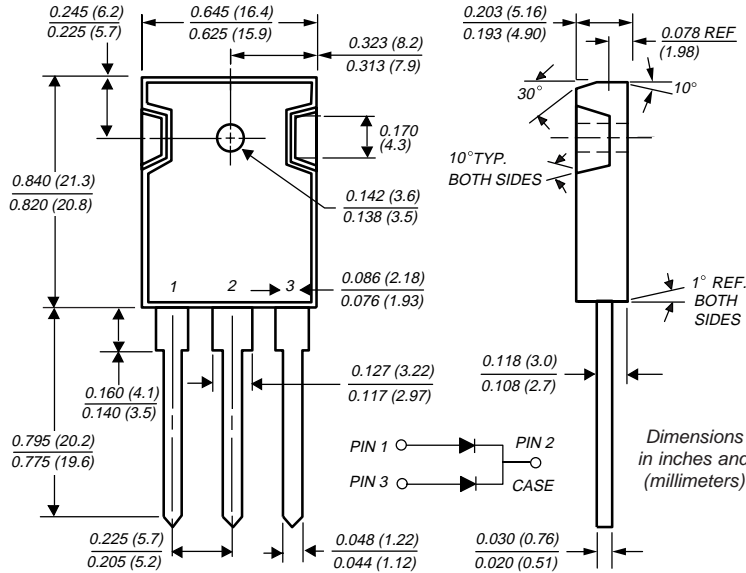


# Schottky Barrier Rectifier

Reverse Voltage 45V  
Forward Current 30A

TO-247AD (TO-3P)



## 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 <sub>C</sub> = 25°C	V <sub>RRM</sub>	45	V
Maximum blocking voltage at T <sub>C</sub> = 25°C	V <sub>DC</sub>	45	V
Maximum working peak reverse voltage	V <sub>RWM</sub>	35	V
Maximum average forward rectified current at T <sub>C</sub> = 105°C	I <sub>F(AV)</sub>	30	A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	400	A
Peak repetitive reverse surge current (NOTE 1)	I <sub>RSM</sub>	2.0	A
Voltage rate of change at V <sub>R</sub> = 35V	dv/dt	10,000	V/μs
Maximum thermal resistance from junction of case per leg	R <sub>θJC</sub>	1.4	°C
Operating junction temperature range	T <sub>J</sub>	-65 to +150	°C
Storage temperature range	T <sub>STG</sub>	-65 to +175	°C

## Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

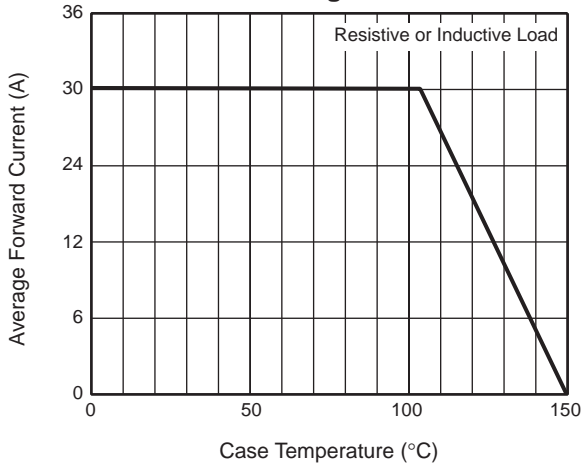
Parameter	Symbol	SD241P	Unit
Maximum instantaneous forward voltage per leg at <sup>(2)</sup> I <sub>F</sub> =10A, T <sub>C</sub> =125°C I <sub>F</sub> =20A, T <sub>C</sub> =125°C	V <sub>F</sub>	0.47 0.60	V
Maximum instantaneous reverse current reverse voltage per leg at V <sub>R</sub> = 35V <sup>(2)</sup> T <sub>C</sub> =25°C T <sub>C</sub> =125°C	I <sub>R</sub>	1.0 100	mA

**Notes:**

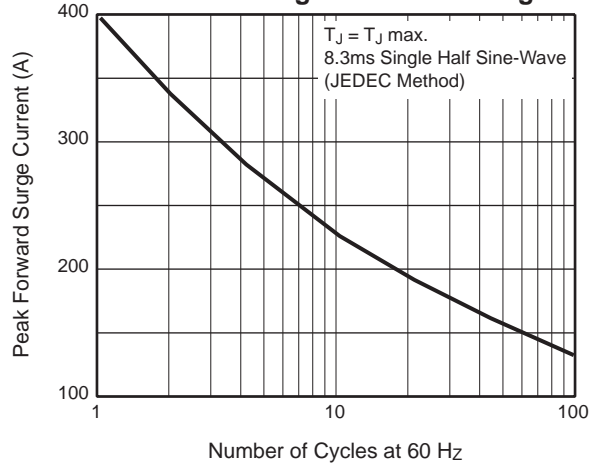
- (1) 2.0μs pulse width, f=1.0 KHz
- (2) Pulse test: 300μs pulse width, 1% duty cycle

**Ratings and Characteristic Curves** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

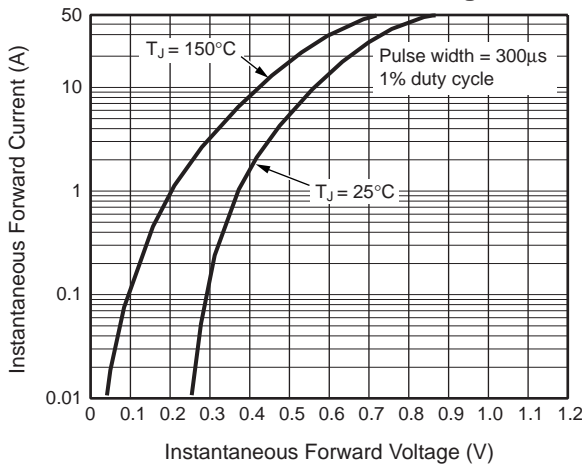
**Fig. 1 – Forward Current Derating Curve**



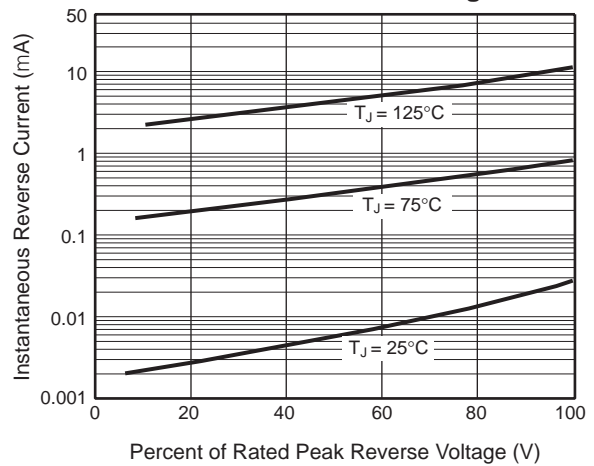
**Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current Per Leg**



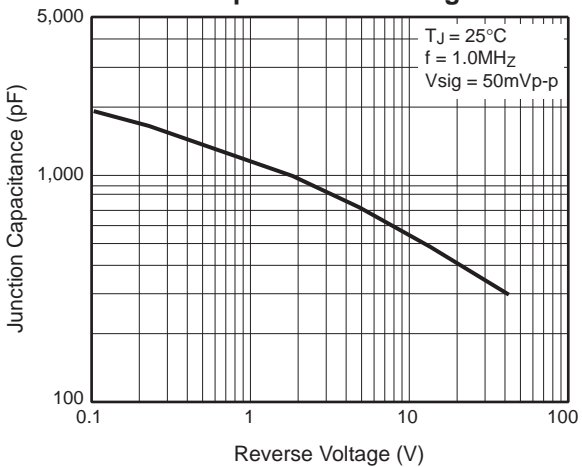
**Fig. 3 – Typical Instantaneous Forward Characteristics Per Leg**



**Fig. 4 – Typical Reverse Characteristics Per Leg**



**Fig. 5 – Typical Junction Capacitance Per Leg**



**Fig. 6 – Typical Transient Thermal Impedance Per Leg**

