DUAL POWER SCHOTTKY RECTIFIERS

SD241
SD241HR2

30 Amp Pk per diode, 45V

FEATURES
- Very Low Forward Voltage
- Low Recovered Charge
- Rugged Packaged Design (TO-3)
- High Efficiency for Low Voltage Supplies
- Dual Schottky Rectifiers in a Single Package

DESCRIPTION
The SD241 has two Schottky barrier junctions arranged in a common cathode configuration and is ideally suited for output rectifiers and catch diodes in low voltage supplies.

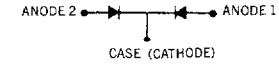
ABSOLUTE MAXIMUM RATINGS (T_{CASE} = 25°C) Per Diode

Peak Repetitive Reverse Voltage, V_{RRM} 45V*
Working Peak Reverse Voltage, V_{RWM} 35V
Average Rectified Forward Current, I_O 30A
Non-repetitive Peak
Surge current (8.3 mS), I_{FSM} 400A
Peak Reverse Transient Current, I_{RM} 2A
Storage Temperature Range, T_{stg} ..... −55°C to +175°C
Junction Operating Temperature Range, T_j ..... −55°C to +150°C
Package Thermal Resistance, Junction to Case, $R\theta_{JC}$ ..... 1.4°C/W

* See curve of V_{RRM} Rating vs Case Temperature.

MECHANICAL SPECIFICATIONS

NOTE:
Leads may be soldered to within 1/16" of base provided temperature-time exposure is less than 260°C for 10 seconds.



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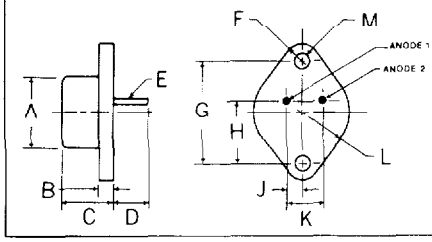
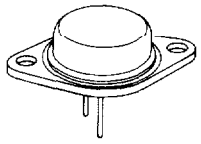


	ins.	mm.
A	.875 MAX.	22.23 MAX.
B	.135 MAX.	3.43 MAX.
C	.250-.450	6.35-11.43
D	.312 MIN.	7.92 MIN.
E	.038-.043 DIA.	0.97-1.09 DIA.
F	.188 MAX. RAD.	4.78 MAX. RAD.
G	1.177-1.197	29.90-30.40
H	.655-.675	16.64-17.15
J	.205-.225	5.21-5.72
K	.420-.440	10.67-11.18
L	.525 MAX. RAD.	13.34 MAX. RAD.
M	.151-.161 DIA.	3.84-4.09 DIA.

TO-204AA (TO-3)



Notes: All metal surfaces tin plated.

Microsemi Corp.
Watertown
The diode experts

ELECTRICAL CHARACTERISTICS (T_{CASE} = 25°C) Per Diode

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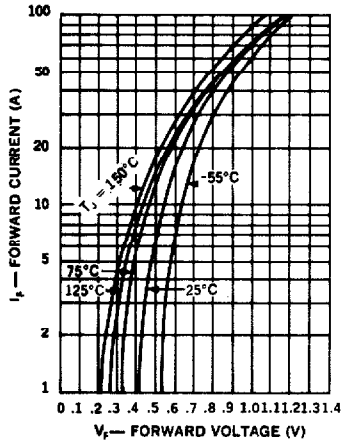
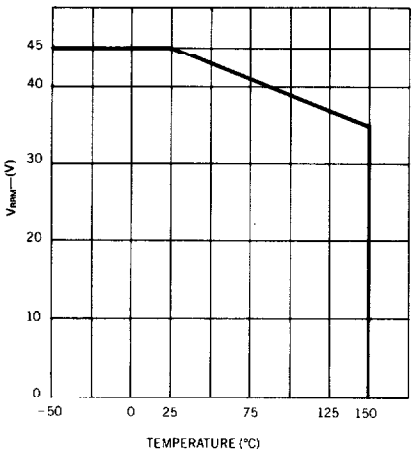
Characteristic	Symbol	Limit	Units	Conditions
Maximum Instantaneous Reverse Current	i_R	25 100	mA mA	T_C = 25°C, V_R = 35V T_C = 125°C Pulse Width = 400μS Duty Cycle = 1 percent
Maximum Instantaneous Forward Voltage	v_F	.47	V	i_F = 10A Pulse Width = 300μS Duty Cycle = 1 percent T_c = 125°C
		.60	V	i_F = 20A Pulse Width = 300μS Duty Cycle = 1 percent T_c = 125°C
Maximum Capacitance	C_t	2000	pF	V_R = 5.0V
Maximum Voltage Rate of Change	dv/dt	1000	v/μS	v_R = 35V

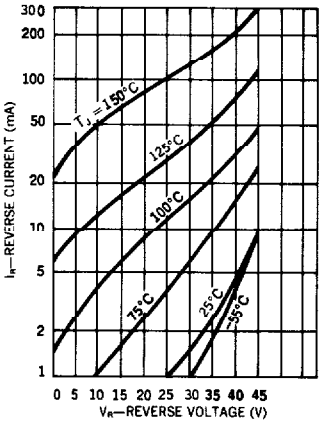
Typical Forward Current vs Forward Voltage



V_{RRM} Rating vs Case Temperature



Typical Reverse Current vs Reverse Voltage



OPTIONAL HIGH RELIABILITY (HR2) SCREENING

The following tests are performed on 100% of the devices specified SD241HR2.

SCREEN	MIL-STD-750 METHOD	CONDITIONS
1. High Temperature	1032	24 Hours @ T_A = 150°C
2. Temperature Cycle	1051	F, 20 Cycles, −55 to +150°C. No dwell required @ 25°C, t ≥ 10 min. @ extremes
3. Hermetic Seal a. Fine Leak b. Gross Leak	1071	 H, Helium C, Liquid
4. Thermal Impedance		Sage Test
5. Interim Electrical Parameters	GO/NO GO	V_F and I_R @ 25°C
6. High Temperature Reverse Blocking	Similar to Method 1040	½ Sine Reverse. t = 48 Hours, T_C = 125°C. VRW_M = rating, F = 50-60 Hz, I_O = OA
7. Final Electrical Parameters	GO/NO GO	V_F + I_R @ 25°C PDA = 10% (Final Electricals)

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