POWER SCHOTTKY RECTIFIERS

150 Amp Pk, Up to 50V

USD520
USD535
USD545
USD550

2

FEATURES

- Very Low Forward Voltage (0.6V at 60A, 125°C)
- Low Recovered Charge
- Rugged Package Design (DO-5)
- High Efficiency for Low Voltage Supplies
- Low Thermal Resistance (0.8°C/W)
- High Surge Current (1000A)
- Low Reverse Current (<50mA at rated V_R at 125°C)
- Available with Flexible Top Lead

DESCRIPTION

This series of Schottky barrier power rectifiers is ideally suited for output rectifiers and catch diodes in low voltage power supplies. The Microsemi high conductivity design, using a heavy copper top post and 4 point crimp, ensures cool thermal operation and low dynamic impedance. Rugged design absorbs stress that can damage glass-to-metal seal during installation and use.

ABSOLUTE MAXIMUM RATINGS

	USD520	USD535	USD545	USD550
Working Peak Reverse Voltage, V_{RWM}	20V	35V	45V	50V
DC Blocking Voltage, V_R	20V	35V	45V	50V
Peak Repetitive Surge Voltage, V_{RSM} @ I_{RM}	24V	42V	54V	60V

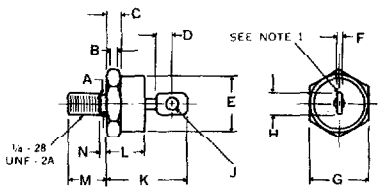
Peak Repetitive Forward Current
(Rated V_R, Square Wave, 20KHz,
50 percent Duty Cycle), I_{FRM} ..... 150A (at T_c = 115°C)
Average Rectified Forward Current, $I_{F(AV)}$ ..... 75A (at T_c = 115°C)
Non-repetitive Peak Surge Current (8.3mS), I_{FSM} 1000A
Peak Reverse Transient Current, I_{RM} 2A
Storage Temperature Range, T_{stg} ..... -55° to +200°C
Operating Junction Temperature, T_j ..... +175°C
Thermal Resistance Junction-to-Case, $R_{\theta JC}$ ..... 0.8°C/W

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

Characteristic	Symbol	Limit		Units	Conditions
		USD520 545	USD550		
Maximum Instantaneous Reverse Current	i_R	20 (50)	20 (75)	mA	$V_R = V_{RWM}$ (T_C = 125°C) Pulse Width = 300μs, Duty Cycle = 1 percent
Maximum Instantaneous Forward Voltage	V_F	0.50 0.68 0.60		V V V	i_F = 10A, T_C = 25°C i_F = 60A, T_C = 25°C i_F = 60A, T_C = 125°C
Flexible Top Lead Option	V_F	(0.63)		V	i_F = 60A, (T_C = 125°C)
Maximum Capacitance	C_t	4000		pF	V_R = 5.0V
Maximum Voltage Rate of Change	dv/dt	1000		V/μS	V_R = rated

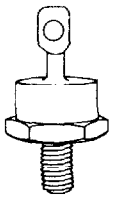
MECHANICAL SPECIFICATIONS

USD520
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	ins.	mm
A	.225 ± .005	5.72 ± 0.13
B	.060 MIN.	1.52 MIN.
C	.166 ± .020	3.96 ± 0.51
D	.156 MIN. FLAT	3.96 MIN. FLAT
E	.667 DIA. MAX.	16.94 DIA. MAX.
F	.090 MAX.	2.29 MAX.
G	.677 ± .010	17.20 ± 0.25
H	.375 MAX.	9.53 MAX.
J	.140 MIN. DIA.	3.56 MIN. DIA.
K	1.000 MAX.	25.40 MAX.
L	.450 MAX.	11.43 MAX.
M	.438 ± .015	11.13 ± 0.38
N	.078 MAX.	1.98 MAX.

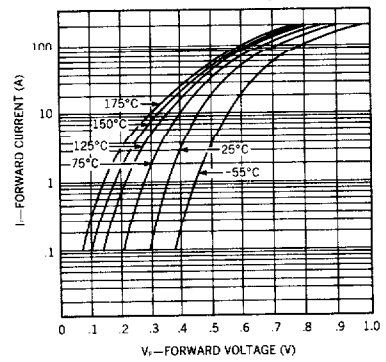
DO-5



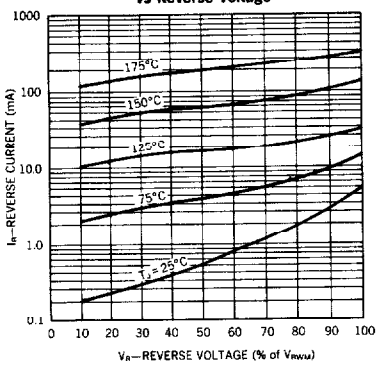
Notes:
1. Cathode is stud.
2. All metal surfaces tin plated.
3. Maximum unlubricated stud torque: 30 inch pounds (35 kg. cm).
4. Angular orientation of terminal is undefined.

Microsemi Corp.
Watertown
The diode experts

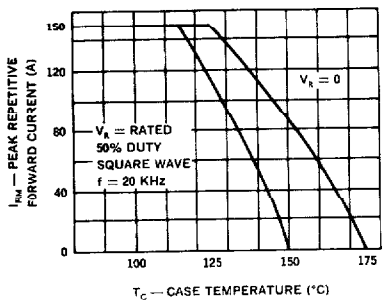
Typical Forward Current vs Forward Voltage



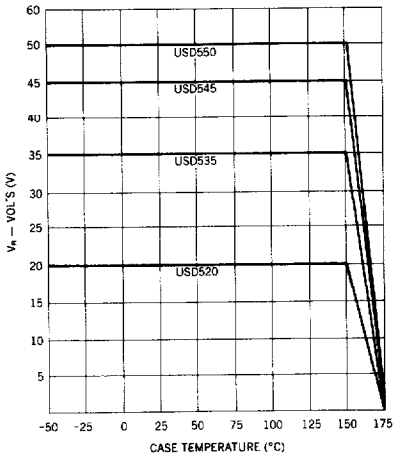
Typical Reverse Current vs Reverse Voltage



Maximum Current vs Case Temperature



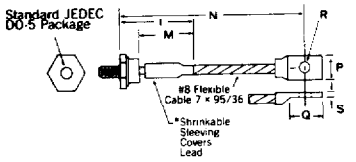
$V_{R(MAX)}$ Rating vs Case Temperature



MECHANICAL SPECIFICATIONS

FLEXIBLE TOP LEAD (OPTIONAL)
Add an "F" Suffix to Part Number.

USD520F
USD535F
USD545F
USD550F

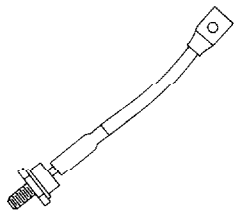


	INCHES	MILLIMETERS
M	.718 MAX.	18.24 MAX.
N	4.50 ± .250	114.3 ± 6.35
P	.525 MAX.	13.23 MAX.
Q	.675 ± .035	17.15 ± 0.89
R	.205 ± .005	5.21 ± 0.13
S	.075 ± .010	1.91 ± 0.25
T	1.125 MAX.	28.58 MAX.

*To 125°C (Ambient)

Note: Consult Factory for Non-standard Lead Lengths.

DO-5 with Flexible Lead



580 PLEASANT STREET • WATERTOWN, MA 02172
TEL. (617) 926-0404 • FAX (617) 924-1235

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