

POWER SCHOTTKY RECTIFIERS

12A Pk, up to 50V

USD635
USD640
USD645
USD650

2

FEATURES

- Vary Low Forward Voltage
- Reverse Transient Capability
- Economical Convenient Plastic Package
- Mechanically Rugged
- 50V Working Voltage @ Rated T_{jmax}

DESCRIPTION

The USD600 series of Schottky power rectifiers is ideally suited for output rectifiers and catch diodes in high frequency low voltage power supplies.

ABSOLUTE MAXIMUM RATINGS

	USD635	USD640	USD645	USD650
Working Peak Reverse Voltage, V_{RWM}	35V	40V	45V	50V
DC Blocking Voltage, V_R	35V	40V	45V	50V
Peak Repetitive Surge Voltage, V_{RSM} @ I_{RSM}	42V	48V	54V	60V
Average Rectified Forward Current @ $T_C = 115^\circ\text{C}$, $I_F (AV)$	6A			
Peak Repetitive Forward Current (Rated V_R , Square Wave, 20 KHz, 50% Duty Cycle, @ $T_C = 115^\circ\text{C}$), I_{FRM}	12A			
Non-repetitive Peak Surge Current (8.3ms), I_{FSM}	150A			
Peak Reverse Transient Current, I_{RM}	1A			
Operating Junction Temperature, T_J	150°C			
Storage Temperature Range, T_{Stg}	-55°C to +150°C			
Thermal Resistance, Junction to Case, $R_{\theta JC}$	3.0°C/W			

ELECTRICAL CHARACTERISTICS ($T_{CASE} = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	LIMIT	UNITS	CONDITIONS
Maximum Instantaneous Reverse Current	i_R	5	mA	$V_R = V_{RWM}$ Pulse Width = 400 μs Duty Cycle = 1 percent
Maximum Instantaneous Reverse Current	i_R	50	mA	$V_R = V_{RWM}$ Pulse Width = 400 μs Duty Cycle = 1 percent $T_C = 125^\circ\text{C}$
Maximum Instantaneous Forward Voltage	V_F	0.55	V	$i_F = 6A$ $i_F = 12A$
		0.65	V	
		0.48	V	$i_F = 6A$ $i_F = 12A$ } $T_C = 125^\circ\text{C}$
		0.60	V	
Capacitance	C_t	1000	pF	$V_R = 5V$
Voltage Rate of Change	dv/dt	1000	V/ μs	$V_R = V_{RWM}$

MECHANICAL SPECIFICATIONS

USD600 SERIES

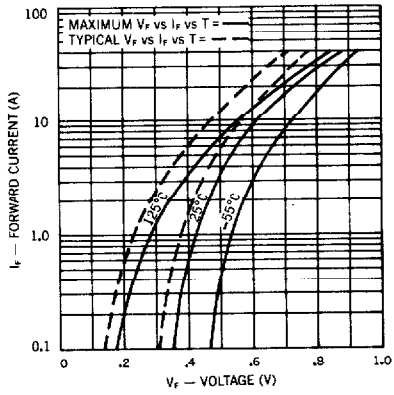
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	14.23	15.87	0.560	0.625
B	9.66	10.66	0.380	0.420
C	3.56	4.82	0.140	0.190
D	0.51	1.14	0.020	0.045
F	3.531	3.733	0.139	0.147
G	2.29	2.79	0.090	0.110
H	—	6.35	—	0.250
J	0.38	0.64	0.015	0.025
K	12.70	14.27	0.500	0.562
L	1.14	1.77	0.045	0.070
N	4.83	5.33	0.190	0.210
Q	2.54	3.04	0.100	0.120
R	2.04	2.92	0.080	0.115
S	1.14	1.39	0.045	0.055
T	5.85	6.85	0.230	0.270

PIN 1. Cathode
PIN 2. Anode
Tab is connected to Cathode.

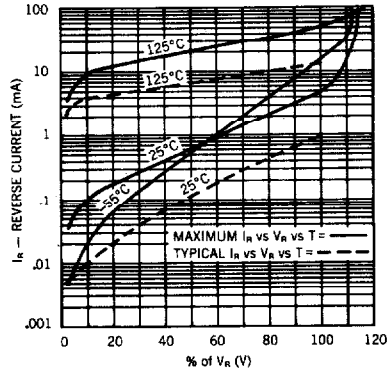
TO-220AC

Microsemi Corp.
Watertown
The diode experts

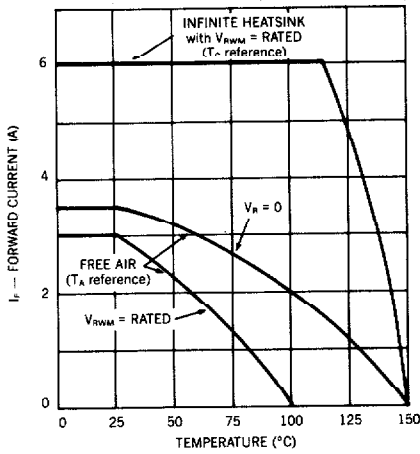
Forward Current vs. Forward Voltage



Reverse Current vs. Voltage



Average Forward Current vs. Temperature



V_R Rating vs. Temperature

