

POWER SCHOTTKY RECTIFIERS

24A Pk, up to 50V

USD835
USD840
USD845
USD850

2

FEATURES

- Very Low Forward Voltage (0.45V max @ 12A)
- Reverse Transient Capability
- Economical Convenient Plastic Package
- Mechanically Rugged
- 50V Blocking Voltage @ Rated T_{jmax}

DESCRIPTION

The USD800 series of Schottky barrier power rectifiers is ideally suited for output rectifiers and catch diodes in low voltage power supplies.

ABSOLUTE MAXIMUM RATINGS

	USD835	USD840	USD845	USD850
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_{RM}	42V	48V	54V	60V
Average Rectified Forward Current @ $T_C = 115^\circ\text{C}$, I_O	12A			
Peak Repetitive Forward Current (Rated V_n , Square Wave, 20KHz, 50% Duty Cycle, @ $T_C = 115^\circ\text{C}$), I_{FRM}	24A			
Non-repetitive Peak Surge Current (8.3mS), I_{FSM}	200A			
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, $R_{\theta JC}$	2.4°C/W			

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

CHARACTERISTIC	SYMBOL	LIMIT	UNITS	CONDITIONS
Maximum Instantaneous Reverse Current	i_R	20	mA	$V_R = V_{RWM}$ Pulse Width = 400 μs Duty Cycle = 1 percent
Typical 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	0.59	V	$i_F = 12\text{A}$
		0.51	V	$i_F = 12\text{A}$ $T_C = 125^\circ\text{C}$
Capacitance	C_t	2000	pF	$V_R = 5\text{V}$
Voltage Rate of Change	dv/dt	1000	V/ μs	$V_n = V_{RWM}$

MECHANICAL SPECIFICATIONS

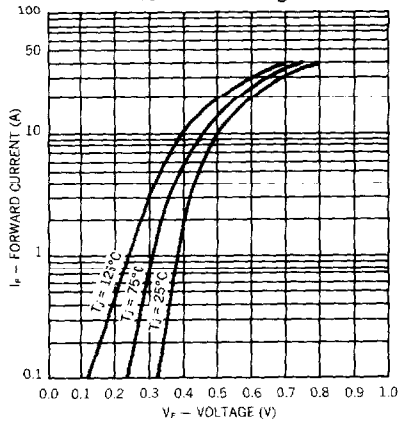
USD800 SERIES

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
I	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

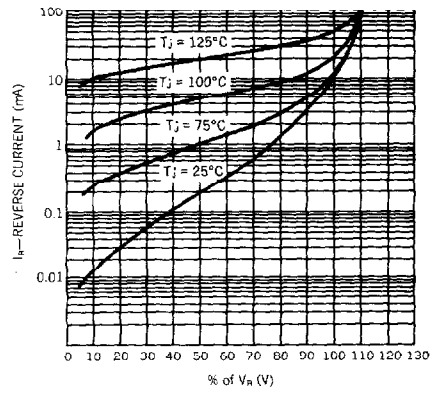
TO-220AC

Microsemi Corp.
Watertown
The diode experts

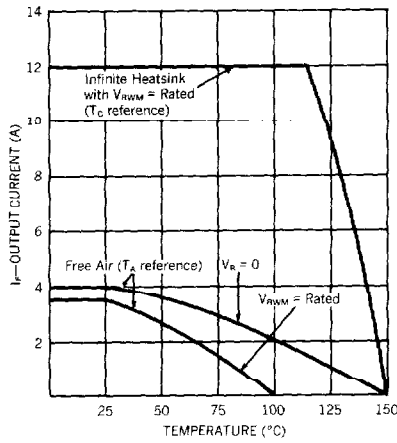
Typical Forward Current vs. Forward Voltage



Typical Reverse Current vs. Voltage



Output Current vs. Temperature



V_R Rating vs. Temperature

