RECTIFIER ASSEMBLIES

679, 680, 683, 684 SERIES

Single Phase Bridges, 10-25 Amp, Standard and Fast Recovery Magnum™

FEATURES

- Current Ratings: to 25A
- Recovery Time: to 500ns
- PIVs: from 100 to 600V
- Surge Ratings: to 150A
- Only Fused-in-Glass Diodes Used
- Controlled Avalanche Characteristics
- Aluminum Heat Sink Case, Electrically Insulated

DESCRIPTION

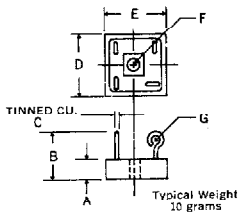
This series of single phase MAGNUM™ bridge offers the designer the ultimate in high current power supply applications. The fast recovery series allows operation at full power at high frequencies, up to 40kHz square wave, which is often used in chopper, inverters and converters in aircraft, missiles, etc., equipment.

ABSOLUTE MAXIMUM RATINGS

Peak Inverse Voltage	100 to 600V
Maximum Average D.C. Output Current	See Electrical Specifications
Non-Repetitive Sinusoidal Surge (8.3ms)	See Electrical Specifications
Operating and Storage Temperature Range, T_C	−65°C to +150°C
Thermal Resistance Junction to Ambient, 679, 683 Series	20°C/W
Junction to Ambient, 680, 684 Series	25°C/W
Junction to Case, 679, 683 Series	2.0°C/W
Junction to Case, 680, 684 Series	4.0°C/W

MECHANICAL SPECIFICATIONS

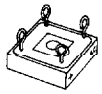
680, 684 SERIES



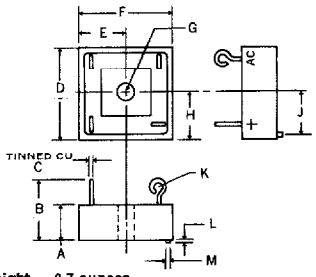
	ins.	mm.
A	.250 MAX.	6.10 MAX.
B	.57 MAX.	14.45 MAX.
C	.040 TYP.	1.02 TYP.
D	.750 MAX.	19.05 MAX.
E	.750 MAX.	19.05 MAX.
F	.140 DIA.	3.56 DIA.
G	.09 DIA. TYP.	2.29 DIA. TYP.

Typical Weight — 0.35 ounces
10 grams

NA



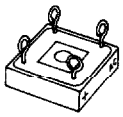
679, 683 SERIES



	ins.	mm.
A	.328 MAX.	8.33 MAX.
B	.750 MAX.	19.05 MAX.
C	.040 TYP.	1.02 TYP.
D	1.125 MAX.	28.58 MAX.
E	.562	14.27
F	1.125 MAX.	28.58 MAX.
G	.193	4.90
H	.562	14.27
J	.500	12.70
K	.09 DIA. TYP.	2.29 DIA. TYP.
L	.062	1.57
M	.062	1.57

Typical Weight — 0.7 ounces
20 grams

NB



MARKING

Alternating Current Input	A.C.
Cathode — Positive Output	+
Anode — Negative	—

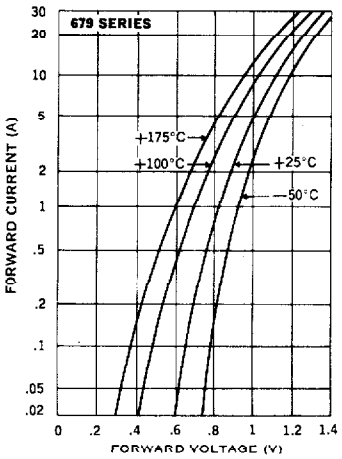
Part number is printed on the body.

Microsemi Corp.
Watertown
The diode experts

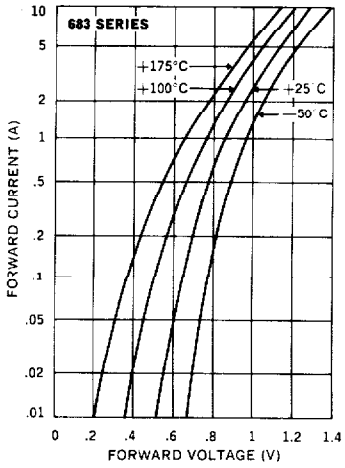
Electrical Specifications (at 25°C unless noted)							Maximum Ratings		
Type		PIV Per Leg	Maximum Forward Voltage Drop Per Leg	Maximum Leakage Current Per Leg @ PIV		Maximum Reverse Recovery Time*	Maximum Average D.C. Output Current		Non-Repetitive Sinusoidal Surge (8.3ms)
				$T_A = 25°C$	$T_A = 100°C$		$T_C = 55°C$	$T_C = 100°C$	$T_A = 100°C$
		Volts		μA	μA	ns	Amps	Amps	Amps
Standard Recovery	679-1	100	1.2V @ 10A	10	200	—	25	18.5	150
	679-2	200							
	679-3	300							
	679-4	400							
	679-5	500							
	679-6	600							
Standard Recovery	680-1	100	1.2V @ 2A	2	50	—	10	6	50
	680-2	200							
	680-3	300							
	680-4	400							
	680-5	500							
	680-6	600							
Fast Recovery	683-1	100	1.2V @ 6A	10	200	500	20	14	150
	683-2	200							
	683-3	300							
	683-4	400							
	683-5	500							
	683-6	600							
Fast Recovery	684-1	100	1.2V @ 2A	5	100	500	10	6	50
	684-2	200							
	684-3	300							
	684-4	400							
	684-5	500							
	684-6	600							

*Measured in a reverse recovery circuit switching from 1.0A forward to 1.0A reverse current recovering to 0.5A.

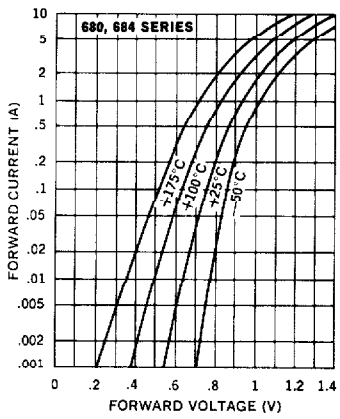
Typical Forward Voltage Per Leg vs. Forward Current



Typical Forward Voltage Per Leg vs. Forward Current



Typical Forward Voltage Per Leg vs. Forward Current



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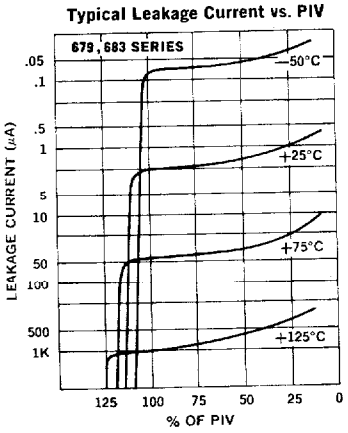
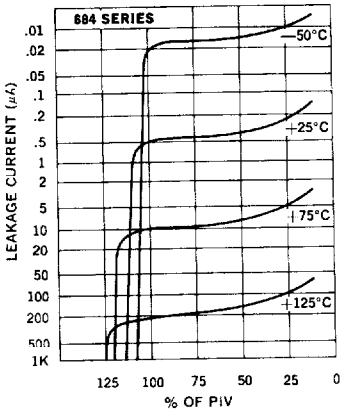
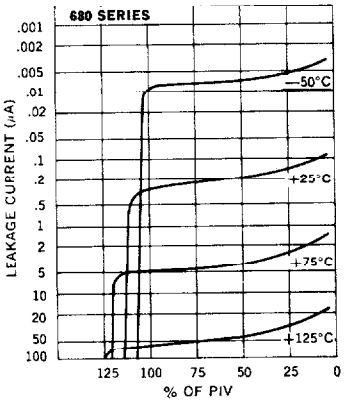
Typical Leakage Current vs. PIV



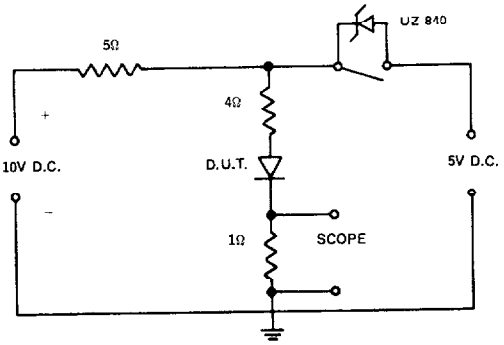
Typical Leakage Current vs. PIV



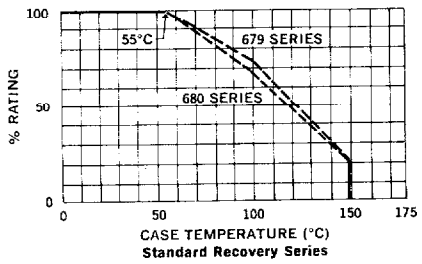
Typical Leakage Current vs. PIV



Reverse Recovery Circuit

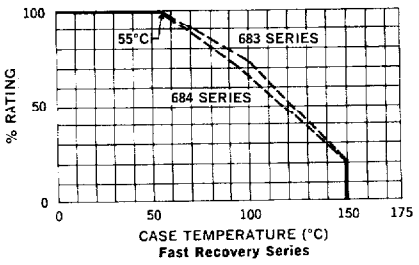


Current Derating Curve



Standard Recovery Series

Current Derating Curve



Fast Recovery Series

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