RECTIFIER ASSEMBLIES

High Voltage Stacks, Standard and Fast Recovery

FEATURES

- Controlled Avalanche Characteristics
- Only Fused-in-Glass Diodes Used
- High Forward and Reverse Surge Capability
- Transfer Molded for Voidless Construction
- Modular for Easy Stacking
- PIV: from 2.5 kV to 15kV
- Recovery Times: to 500ns
- Continuous Ratings: to 2.3A

DESCRIPTION

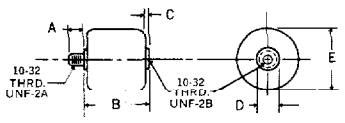
These assemblies uniquely combine a versatile stackable design with all the requirements for reliable high voltage operation. All modules are suitable for bridge or series operations.

ABSOLUTE MAXIMUM RATINGS

Peak Inverse Voltage, USS Series	5.0 kV to 15kV
Peak Inverse Voltage, USB Series	2.5 kV to 10kV
Peak Inverse Voltage, UFS Series	5.0 kV to 10 kV
Peak Inverse Voltage, UFB Series	2.5 kV to 7.5 kV
Maximum Average D.C. Output Current	See Electrical Specifications
Non-Repetitive Sinusoidal Surge (8.3ms)	See Electrical Specifications
Operating and Storage Temperature Range	—65°C to +150°C

MECHANICAL SPECIFICATIONS

UFB. UFS. USB. USS SERIES

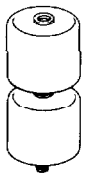


	Ins.	mm.
A	.230–.235	5.84–5.97
B	.980–1.10	24.89–27.94
C	.020–.040	0.51–1.02
D	.320–.330	8.13–8.38
E	.97–1.00	24.64–25.40

Typical Weight: USS & UFS Series — 1.0 ounce 28 grams

USB & UFB Series — 1.1 ounce 31 grams

DH



MARKING

Type number marked on unit.

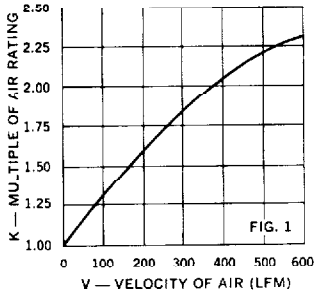
Polarity — Cathode connected to stud.

Microsemi Corp.
Watertown
The diode experts

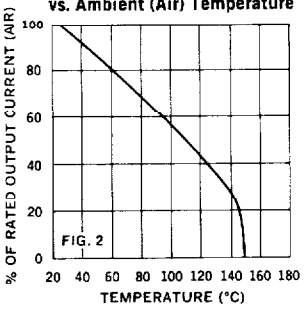
Electrical Specifications (at 25°C unless noted)							Maximum Ratings		
Type		PIV	Maximum Forward Voltage Drop	Leakage Current @ PIV	Maximum Reverse Recovery Time	Maximum Reverse Transient Energy Absorption	Maximum Average D.C. Output Current $T_A = 25°C$ AIR	Maximum Average D.C. Output Current $T_A = 50°C$ OIL	Non-Repetitive Sinusoidal Surge (8.3ms)
		kV		μA	ns	joules	Amps	Amps	Amps
Standard Recovery	USS 5	5.0	9V @ 0.6A	5	—	1.5	0.60	1.1	25
	USS 7.5	7.5	13V @ 0.5A			2.5	0.45	0.91	
	USS 10	10	17V @ 0.3A			3.0	0.35	0.71	
	USS 15	15	25V @ 0.2A			5.0	0.25	0.51	
Standard Recovery	USB 2.5	2.5	5V @ 1.1A	10	—	3.0	1.1	2.3	80
	USB 5	5.0	9V @ 0.7A			6.0	0.68	1.5	
	USB 7.5	7.5	13V @ 0.5A			9.0	0.53	1.2	
	USB 10	10	17V @ 0.4A			12	0.43	1.0	
Fast Recovery	UFS 5	5.0	12V @ 0.5A	5	500* 350†	1.5	0.50	0.90	20
	UFS 7.5	7.5	18V @ 0.4A			2.5	0.38	0.75	
	UFS 10	10	23V @ 0.3A			3.0	0.30	0.58	
Fast Recovery	UFB 2.5	2.5	6V @ 0.9A	10	500* 350†	3.0	0.90	2.0	70
	UFB 5	5.0	12V @ 0.6A			6.0	0.58	1.3	
	UFB 7.5	7.5	18V @ 0.4A			9.0	0.45	1.0	

*Measured in a reverse recovery circuit switching from 1A forward to 1A reverse current recovering to 0.5A.
†Measured in a reverse recovery circuit switching from .5A foward current to 1A reverse current, recovery to .25A.

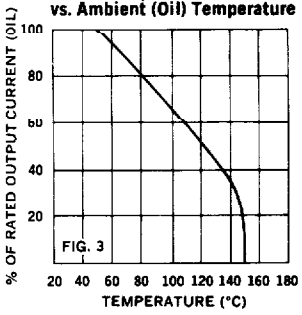
Output Current Ratio vs. Velocity of Air Flow



Output Current vs. Ambient (Air) Temperature

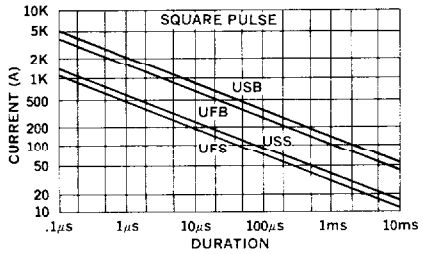


Output Current vs. Ambient (Oil) Temperature

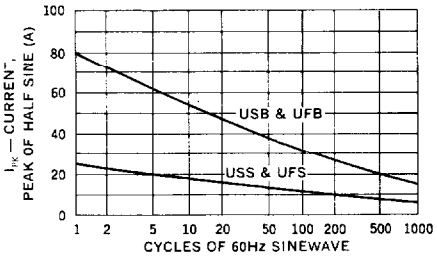


Application example: The rectifier is to be used in a cabinet at 60°C with ambient air moving at 400 LFM. The rating is reduced (Fig. 2) by a factor of 0.81 due to the elevated temperature, but it is enhanced by 2X (Fig. 1) due to the air flow. Hence the DC output current is 0.81 x 2, or 1.6 times the 25°C air rating.

Forward Pulse Current vs. Duration



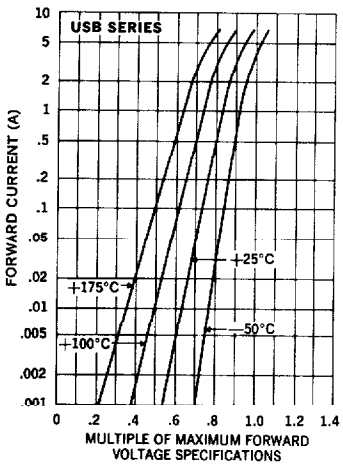
Multiple Surge Current vs. Duration



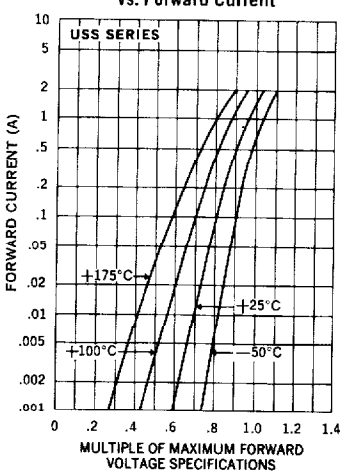
580 PLEASANT STREET • WATERTOWN, MA 02172
TEL. (617) 926-0404 • FAX (617) 924-1235

PRINTED IN U.S.A.

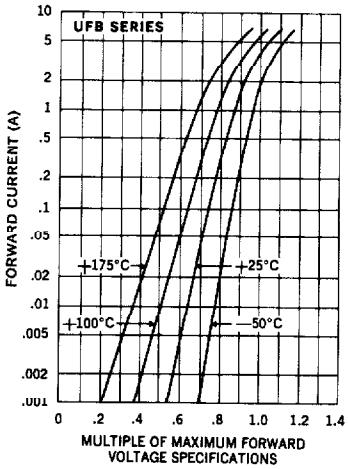
Typical Forward Voltage vs. Forward Current



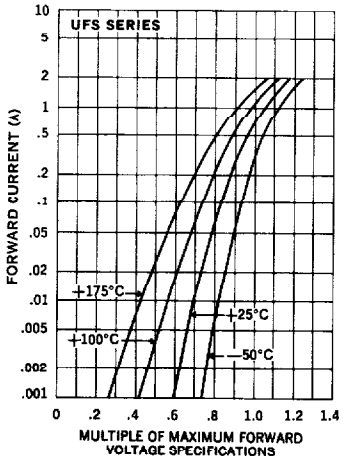
Typical Forward Voltage vs. Forward Current



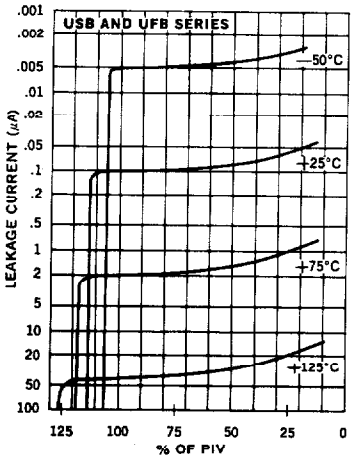
Typical Forward Voltage vs. Forward Current



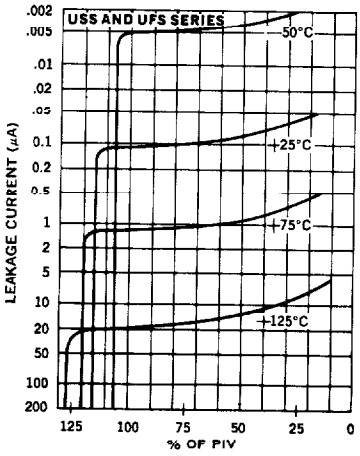
Typical Forward Voltage vs. Forward Current



Typical Leakage Current vs. PIV



Typical Leakage Current vs. PIV



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

PRINTED IN U.S.A.