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SEMTECH

**STANDARD RECOVERY
HIGH VOLTAGE RECTIFIER
ASSEMBLY**

**SHVM2.5 SHVM5
SHVM7.5 SHVM10
SHVM12.5 SHVM15**

January 29, 1998

TEL:805-498-2111 FAX:805-498-3804 WEB:http://www.semtech.com

HIGH VOLTAGE, HIGH DENSITY, STANDARD RECOVERY MODULAR RECTIFIER ASSEMBLY

- Up to 15kV reverse voltage
- Modular construction
- Low reverse leakage currents
- High thermal shock resistance
- Provides design versatility

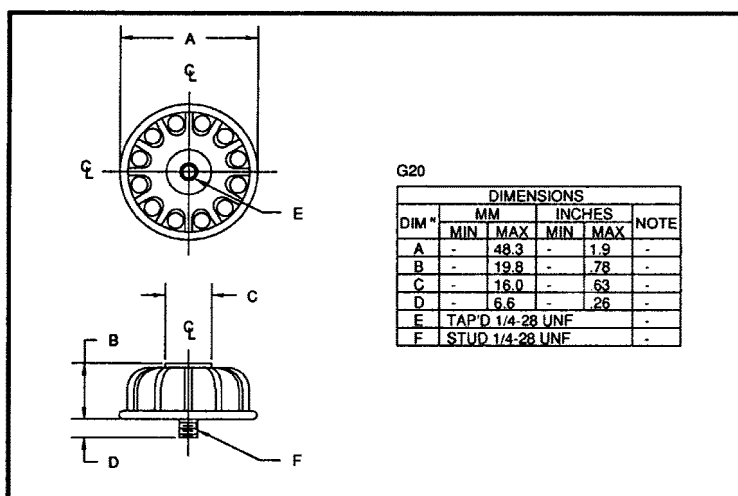
QUICK REFERENCE DATA

- $V_R = 2.5\text{kV} - 15\text{kV}$
- $I_F = 500\text{mA}$ (in air)
- $I_R = 1.0 \mu\text{A}$
- $I_{FSM} = 20\text{A}$

ABSOLUTE MAXIMUM RATINGS

Device Type	Working Reverse Voltage V_{RWM}	Average Rectified Current $I_{F(AV)}$				1 Cycle Surge Current I_{FSM} $t_p = 8.3\text{mS}$		Repetitive Surge Current I_{FRM} @ 25°C	I^2t $t_p = 8.3\text{mS}$ @ 25°C
		Air @ 25°C	Air @ 100°C	Stud to Heatsink @ 25 °C	Still oil @ 55 °C	@ 25°C	@ 100°C		
	Volts	Amps	Amps	Amps	Amps	Amps	Amps	Amps	A ² S
SHVM2.5	2500	↑	↑	↑	↑	↑	↑	↑	↑
SHVM5	5000	↑	↑	↑	↑	↑	↑	↑	↑
SHVM7.5	7500	0.5	0.2	0.5	0.5	20.0	8.0	8.0	1.67
SHVM10	10000	↓	↓	↓	↓	↓	↓	↓	↓
SHVM12.5	12500	↓	↓	↓	↓	↓	↓	↓	↓
SHVM15	15000	↓	↓	↓	↓	↓	↓	↓	↓

MECHANICAL



MAXIMUM THERMAL IMPEDANCES

Junction - Ambient $R_{\theta JA} < 12^\circ\text{C/W}$
Junction - Stud $R_{\theta JS} < 6^\circ\text{C/W}$
Junction - Oil $R_{\theta JO} < 4.5^\circ\text{C/W}$

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ELECTRICAL CHARACTERISTICS

Device Type	Maximum Reverse Leakage Current I_R @ V_{RWM}		Maximum Forward Voltage V_F @ 0.8A @ 25°C	Maximum Reverse Recovery Time ¹ t_{rr} @ 25°C
	@ 25 °C	@ 100 °C		
	μA	μA	Volts	μS
SHVM2.5	1.0	50	7.0	2.0
SHVM5			14.0	
SHVM7.5			21.0	
SHVM10			28.0	
SHVM12.5			35.0	
SHVM15			42.0	

1. Measured on discrete devices prior to assembly

Operating temperature range -55 °C to +150 °C
Storage temperature range -55 °C to +150 °C

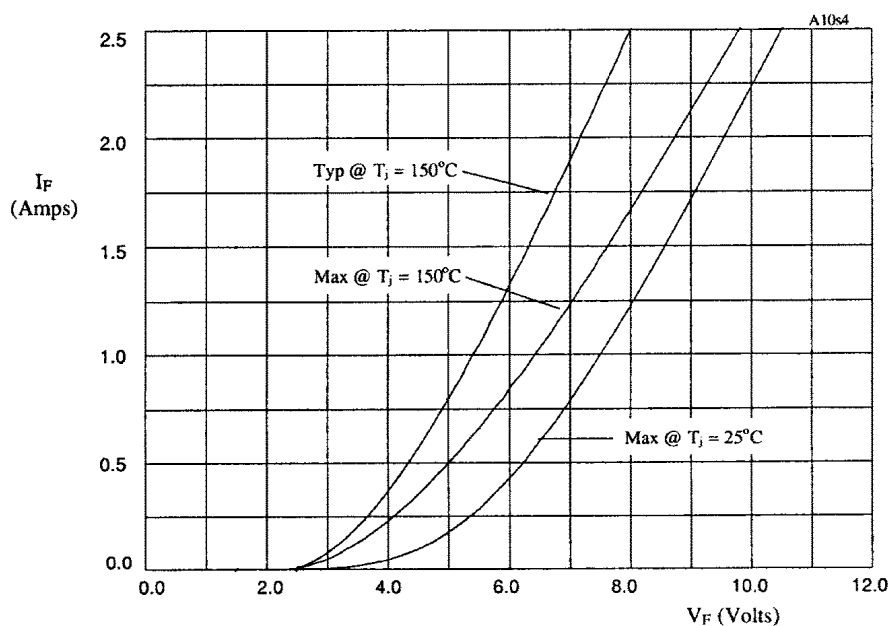


Figure 1. Forward voltage drop as a function of forward current for use with table 1.

TABLE 1

DEVICE	X-axis
SHVM2.5	x1
SHVM5	x2
SHVM7.5	x3
SHVM10	x4
SHVM12.5	x5
SHVM15	x6