

January 8, 1998

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

HIGH VOLTAGE, HIGH DENSITY, FAST RECOVERY MODULAR RECTIFIER ASSEMBLY

- Low reverse recovery time
- Modular construction
- Low reverse leakage current
- High thermal shock resistance
- Provides design versatility

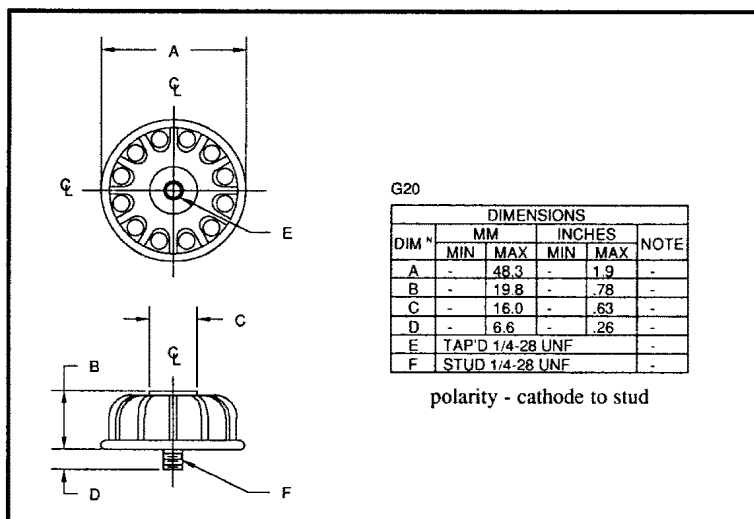
QUICK REFERENCE DATA

- $V_R = 2.5kV - 15kV$
- $I_F = 350mA$
- $I_R = 0.25\mu A$
- $t_{rr} = 350nS$

ABSOLUTE MAXIMUM RATINGS

Device Type	Working Reverse Voltage V_{RWM}	Average Rectified Current $I_{F(AV)}$				1 Cycle Surge Current I_{FSM} $t_p = 8.3mS$ @ T_{JMAX}	Repetitive Surge Current I_{FRM} @ 25°C	I^2t $t_p = 8.3mS$
		air 25 °C	air 100 °C	stud to heat-sink @ 25°C	in still oil @ 55 °C			
		Volts	Amps	Amps	Amps			
SHVM2.5F	2500	↑	↑	↑	↑	↑	↑	
SHVM5F	5000	↑	↑	↑	↑	↑	↑	
SHVM7.5F	7500	0.35	0.15	0.35	0.35	15.0	8.0	
SHVM10F	10000	↓	↓	↓	↓	↓	↓	
SHVM12.5F	12500	↓	↓	↓	↓	↓	↓	
SHVM15F	15000	↓	↓	↓	↓	↓	↓	

MECHANICAL



MAXIMUM THERMAL IMPEDANCES

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

January 8, 1998

ELECTRICAL CHARACTERISTICS

Device Type	Maximum Reverse Leakage Current $I_R @ V_{RWM}$		Maximum Reverse Recovery Time ¹ $t_{rr} @ 25^\circ\text{C}$	Maximum Forward Voltage $V_F @ 0.8\text{A}$ $@ 25^\circ\text{C}$
	@ 25 °C	@ 100 °C		
	μA	μA	nS	Volts
SHVM2.5F	↑ 1.0 ↓	↑ 50 ↓	↑ 350 ↓	7
SHVM5F				14
SHVM7.5F				21
SHVM10F				28
SHVM12.5F				35
SHVM15F				42

1. Measured on discrete devices prior to assembly

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

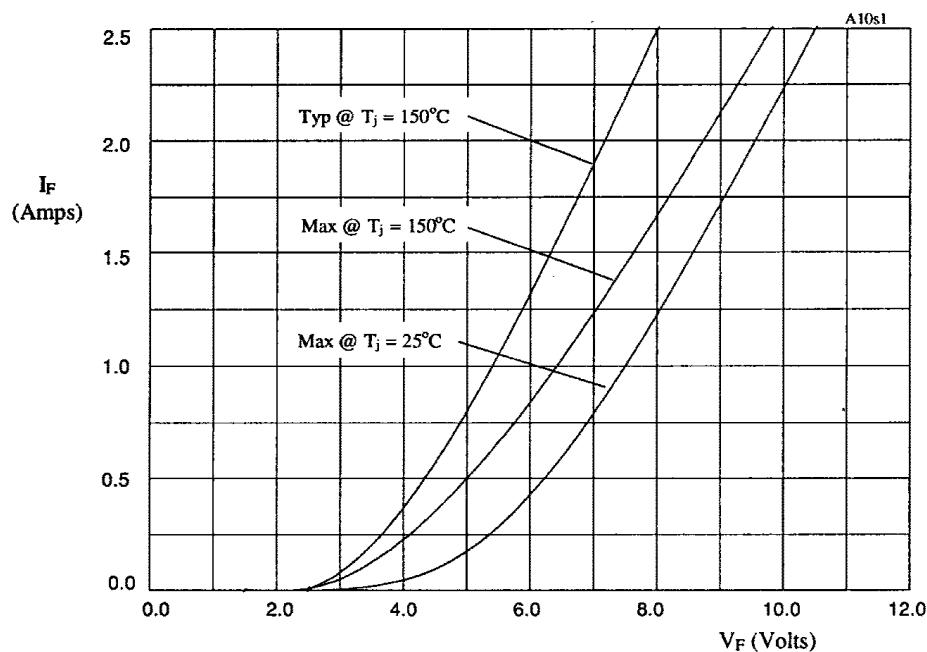


Figure 1. Forward voltage drop as a function of forward current.

TABLE I

DEVICE	X-AXIS
SHVM2.5F	x1
SHVM5F	x2
SHVM7.5F	x3
SHVM10F	x4
SHVM12.5F	x5
SHVM15F	x6