

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
- Low reverse leakage current
- High thermal shock resistance
- Modular construction
- Low distributed capacitance

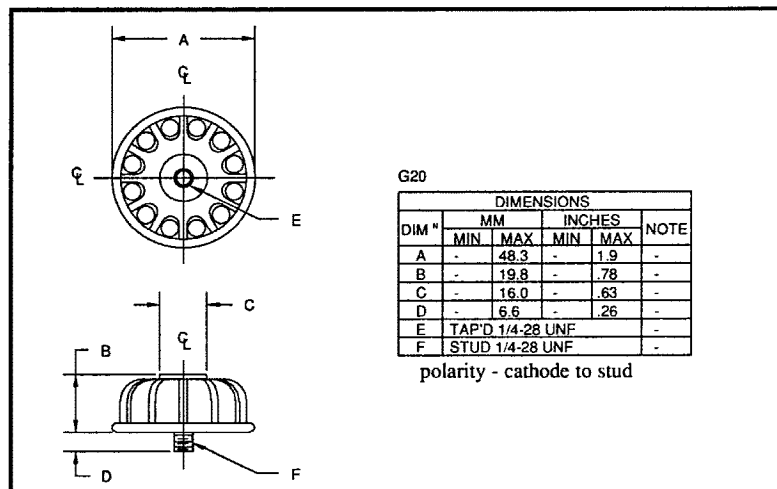
### QUICK REFERENCE DATA

- $V_R = 2500 - 7500V$
- $I_F = 0.8 - 2.4A$
- $I_{FSM} = \text{up to } 130A$
- $t_{rr} = 150 \text{ nS}$

### ABSOLUTE MAXIMUM RATINGS

Device Type	Working Reverse Voltage $V_{RWM}$	Average Rectified Current $I_{F(AV)}$				1 Cycle Surge Current $I_{FSM}$ $t_p = 8.3mS$ @ $T_{JMAX}$	$I^2t$ $t_p = 8.3mS$	Repetitive Surge Current $I_{FRM}$ @ 25°C
		air 25 °C	air 100 °C	stud to heat-sink @ 25°C	in still oil @ 55 °C			
		Volts	Amps	Amps	Amps			
S2HVM2.5F	2500	2.0	0.8	2.0	2.0	32	4.25	11
S2HVM5F	5000	1.2	0.5	2.0	2.0	32	4.25	11
S2HVM7.5F	7500	0.8	0.3	1.5	2.0	32	4.25	11
S3HVM2.5F	2500	2.4	1.0	3.0	3.0	70	20	20
S3HVM5F	5000	1.2	0.5	2.5	3.0	70	20	20
S6HVM2.5F	2500	2.4	1.0	5.0	6.0	130	70	35

### 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 $t_{rr} @ 25^\circ\text{C}$	Maximum Forward Voltage $V_F @ 25^\circ\text{C}$
	@ 25 °C	@ 100 °C		
	$\mu\text{A}$	$\mu\text{A}$	nS	Volts
S2HVM2.5F	1.0	25.0	$\updownarrow$ 150	@ 1.0A 6
S2HVM5F	1.0	25.0		12
S2HVM7.5F	1.0	25.0		18
S3HVM2.5F	5.0	25.0		@ 3.0A 6
S3HVM5F	5.0	25.0		12
S6HVM2.5F	10.0	50.0		@ 6.0A 6

1. Measured on discrete devices prior to assembly

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

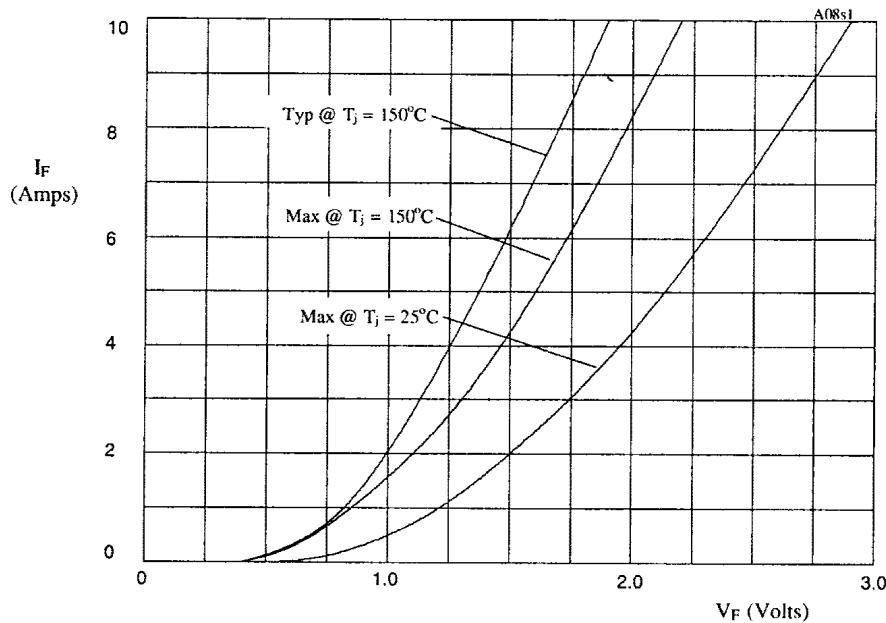


Figure 1. Forward voltage drop as a function of forward current for S2HVM\*\*F series (see Table 1).

TABLE 1

DEVICE	X-AXIS
S2HVM2.5F	x3
S2HVM5F	x6
S2HVM7.5F	x8

January 8, 1998

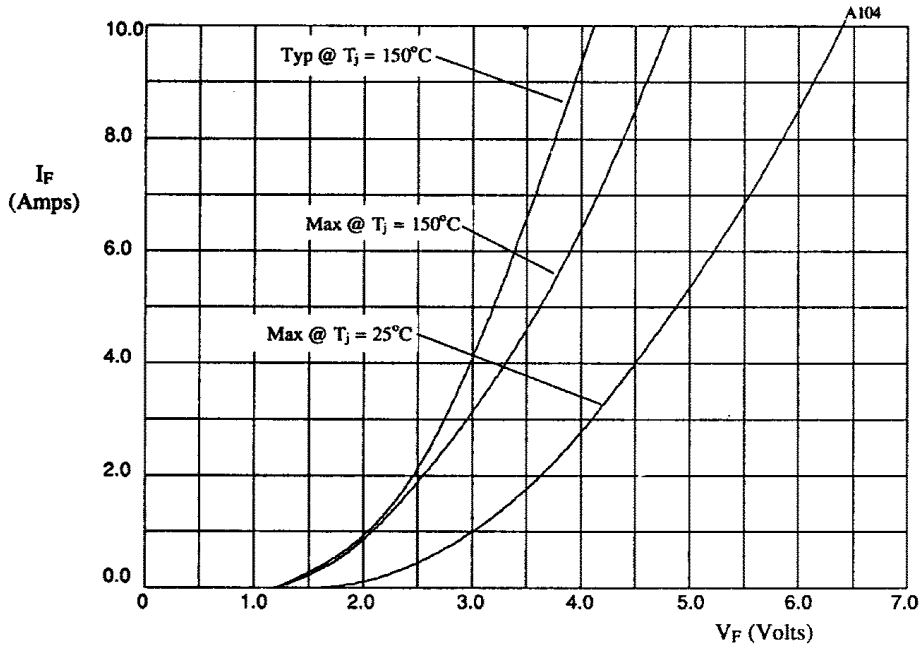


Figure 2. Forward voltage drop as a function of forward current for S3HVM\*\*F series (see Table 2).

TABLE 2

DEVICE	X-AXIS
S3HVM2.5F	x1
S3HVM5F	x2

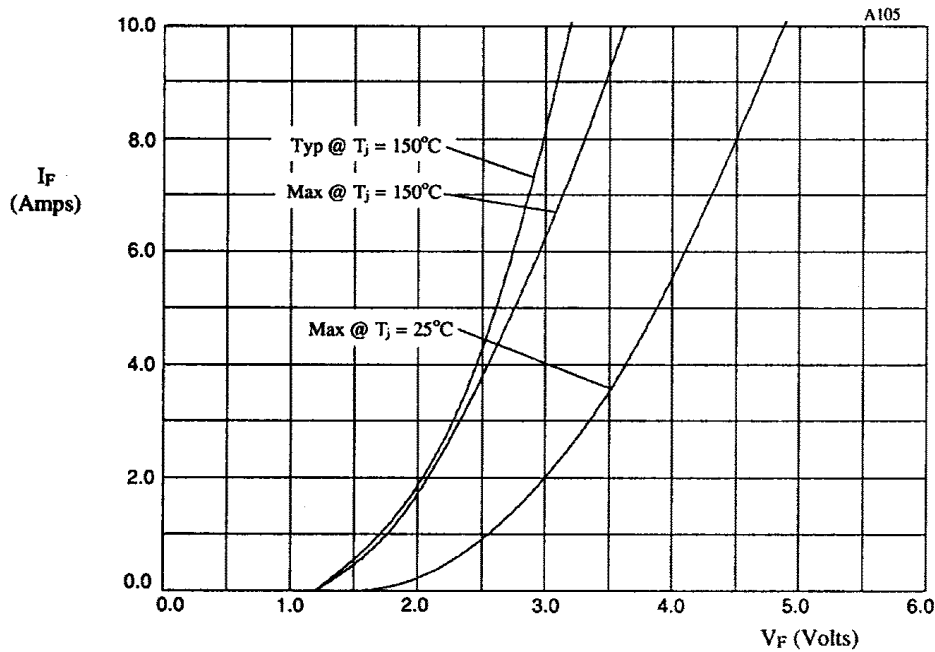


Figure 3. Forward voltage drop as a function of forward current for S6HVM2.5F.