SEMTECH

STANDARD RECOVERY HIGH VOLTAGE RECTIFIER ASSEMBLY

S3HVM2.5 S3HVM5 S3HVM7.5 S3HVM10 S6HVM2.5 S6HVM5 S9HVM2.5

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HIGH VOLTAGE, HIGH DENSITY, STANDARD RECOVERY MODULAR RECTIFIER ASSEMBLY

- Low forward voltage drop
- Low reverse leakage current
- High thermal shock resistance
- Modular construction and design versatility
- Low distributed capacitance

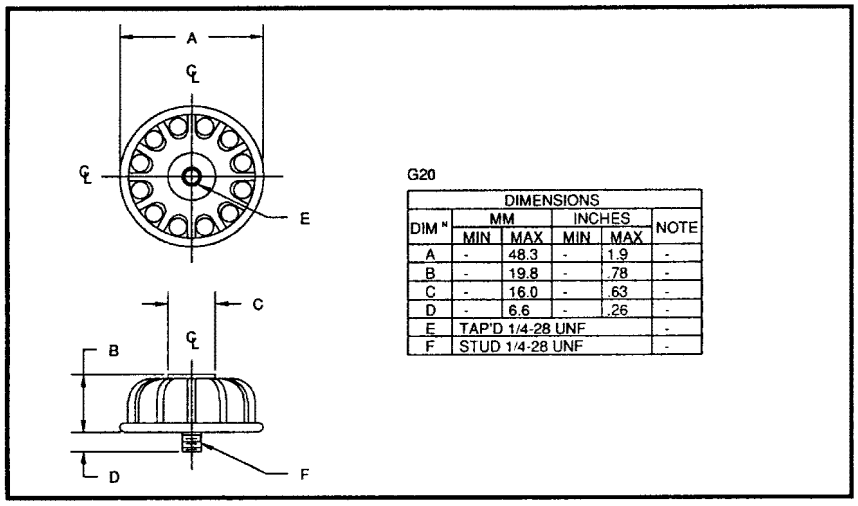
QUICK REFERENCE DATA

- V_R = 2500 - 10000V
- I_F =1.2 - 4.0A (in air)
- I_R = 1- 3 µA (max)
- t_{rr} = 2.5µS

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		Repetitive Surge Current I_{FRM} @ 25°C	I^2t t_p = 8.3mS @ 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^2S
S3HVM2.5	2500	3.0	1.25	3.0	3.0	50	20	11	10
S3HVM5	5000	2.4	1.0	3.0	3.0	50	20	11	10
S3HVM7.5	7500	1.5	0.63	3.0	3.0	50	20	11	10
S3HVM10	10000	1.2	0.5	2.5	3.0	50	20	11	10
S6HVM2.5	2500	4.0	1.5	6.0	6.0	100	40	22	41.5
S6HVM5	5000	2.4	1.0	6.0	6.0	100	40	22	41.5
S9HVM2.5	2500	5.0	1.8	7.5	10.0	150	60	33	93.3

MECHANICAL



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DIM "	DIMENSIONS MM MIN	MM MAX	INCHES MIN	INCHES MAX	NOTE
A	-	48.3	-	1.9	-
B	-	19.8	-	.78	-
C	-	16.0	-	.63	-
D	-	6.6	-	.26	-
E	TAP'D 1/4-28 UNF				-
F	STUD 1/4-28 UNF				-

MAXIMUM THERMAL IMPEDANCES

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

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ELECTRICAL CHARACTERISTICS

Device Type	Maximum Reverse Leakage Current I_R @ V_{RWM} @ 25 °C µA	Maximum Reverse Leakage Current I_R @ V_{RWM} @ 100 °C µA	Maximum Forward Voltage V_F @ 25°C Volts	Maximum Reverse Recovery Time[1] t_{rr} @ 25°C µS
			@ 3.0A	
S3HVM2.5	1.0	10.0	3.45	
S3HVM5	1.0	10.0	5.75	
S3HVM7.5	1.0	10.0	9.20	
S3HVM10	1.0	10.0	11.5	2.5
			@ 6.0A	
S6HVM2.5	2.0	20.0	3.45	
S6HVM5	2.0	20.0	5.75	
			@ 9.0A	
S9HVM2.5	3.0	30.0	3.45	

1. Measured on discrete devices prior to assembly

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

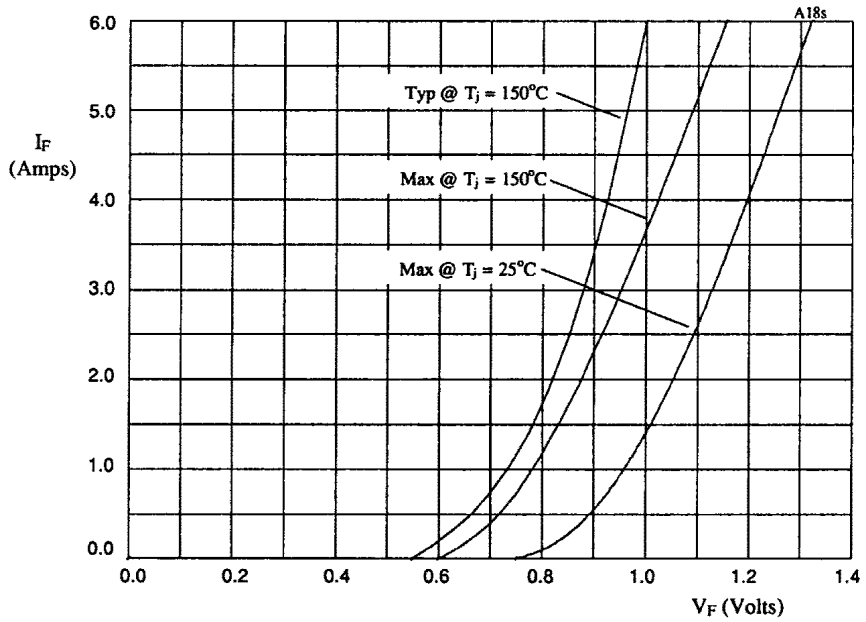

Figure 1. Forward voltage drops as a function of forward current for use with table 1.

TABLE 1

DEVICE	X-axis	Y-axis
S3HVM2.5	x3	x1
S3HVM5	x5	x1
S3HVM7.5	x8	x1
S3HVM10	x10	x1
S6HVM2.5	x3	x2
S6HVM5	x5	x2
S9HVM2.5	x3	x3