

January 29, 1998

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

## HIGH VOLTAGE, HIGH CURRENT, HIGH DENSITY, STANDARD RECOVERY RECTIFIER ASSEMBLY

- Up to 20A forward current and 24kV reverse voltage
- Air or oil environment
- High reverse surge current
- High thermal shock resistance
- Integral cooling fins

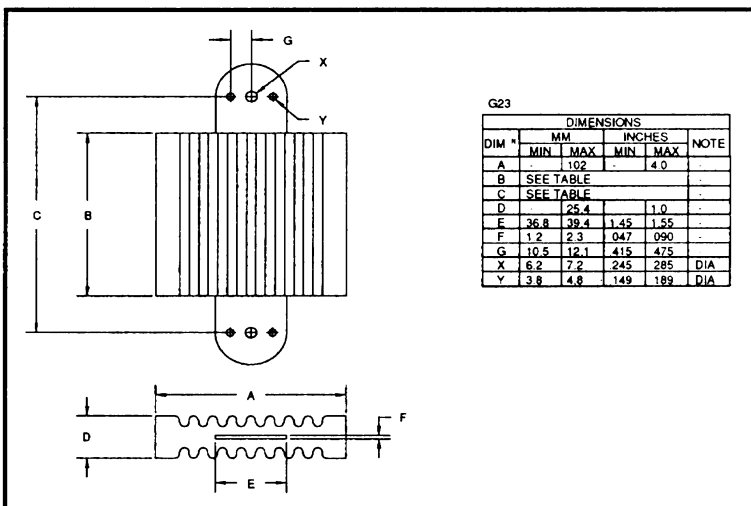
## QUICK REFERENCE DATA

- $V_R = 4kV - 24kV$
- $I_F = 8.0 - 20.0A$  (in oil)
- $I_R = 4.0\mu A$
- $I_{FSM} = 500A$

## ABSOLUTE MAXIMUM RATINGS

Device Type	Working Reverse Voltage $V_{RWM}$	Average Rectified Current $I_{F(AV)}$				1 Cycle Surge Current $t_p = 8.3mS$ $I_{FSM}$		Repetitive Surge Current $I_{FRM}$	$I^2t$ $t_p = 8.3mS$
		air @ 25 °C	air @ 65 °C	forced air 600CFM @ 55°C	still oil @ 55 °C	@ 25 °C	@ 100 °C	@ 25 °C	@ 25 °C
		Volts	Amps	Amps	Amps	Amps	Amps	Amps	A <sup>2</sup> S
S4KW4KA-1	4000	8.0	5.4	16.0	20.0	↑ 500 ↓	↑ 300 ↓	↑ 90 ↓	↑ 1000 ↓
S4KW8KA-2	8000	6.0	4.0	12.0	15.0				
S4KW12KA-3	12000	6.0	4.0	12.0	15.0				
S4KW16KA-4	16000	6.0	4.0	12.0	15.0				
S4KW20KA-5	20000	6.0	4.0	12.0	15.0				
S4KW24KA-6	24000	6.0	4.0	12.0	15.0				

## MECHANICAL



Dimensions (see drawing)	
B (max)	C (max)
inches	inches
4.780	6.480
7.980	9.680
11.18	12.88
14.38	16.08
17.58	19.28
20.78	22.48

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## CHARACTERISTICS

Device Type	Maximum Reverse Leakage Current $I_R @ V_{RWM}$		Maximum Forward Voltage $V_F @ 12.0A$ @ 25°C	Maximum Reverse Recovery Time <sup>1</sup> $t_{rr} @ 25°C$
	@ 25 °C	@ 100 °C		
	µA	µA	Volts	µS
S4KW4KA-1	↑ 4.0 ↓	↑ 80 ↓	4.0	↑ 2.0 ↓
S4KW8KA-2			8.0	
S4KW12KA-3			12.0	
S4KW16KA-4			16.0	
S4KW20KA-5			20.0	
S4KW24KA-6			24.0	

<sup>1</sup> Measured on discrete devices prior to assembly

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

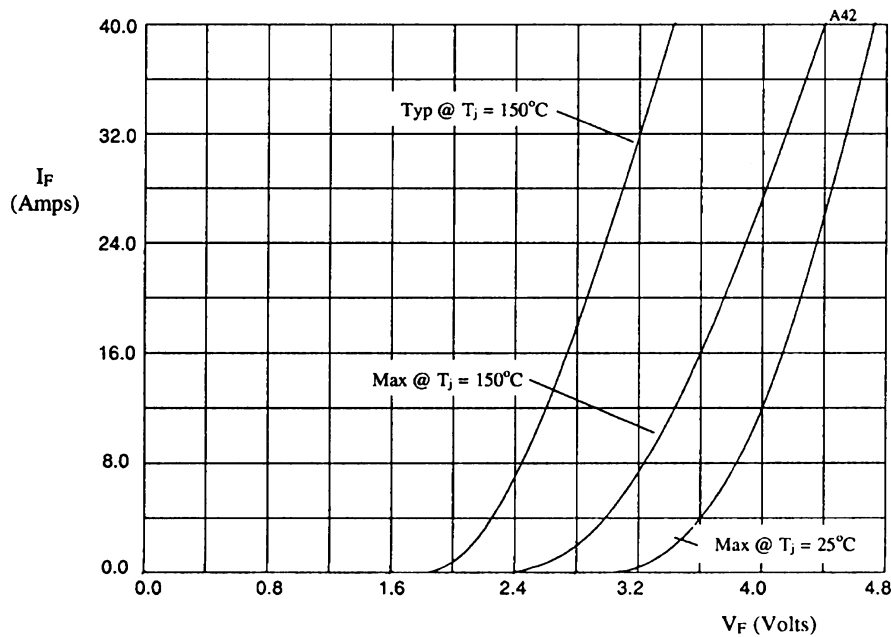


Figure 1. Forward voltage drop as a function of forward current.

TABLE I

DEVICE	X-axis
S4KW4KA-1	x1
S4KW8KA-2	x2
S4KW12KA-3	x3
S4KW16KA-4	x4
S4KW20KA-5	x5
S4KW24KA-6	x6