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# SEMTECH

**STANDARD RECOVERY HIGH VOLTAGE, HIGH CURRENT RECTIFIER**  
 S1KW16KA-1 S1KW32KA-2  
 S1KW48KA-3 S1KW64KA-4  
 S1KW80KA-5 S1KW96KA-6

January 29, 1998

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

## QUICK REFERENCE DATA

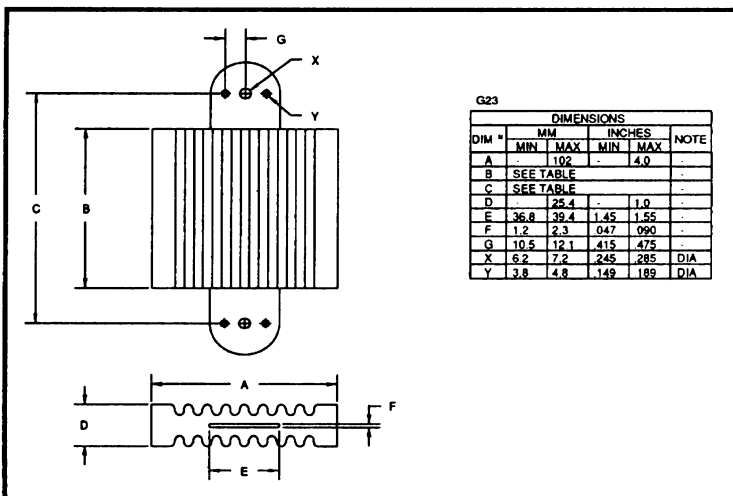
- Up to 96kV reverse voltage
- Air or oil environment
- Low reverse leakage currents
- High thermal shock resistance
- Integral cooling fins.

- $V_R = 16kV - 96kV$
- $I_F = 3.8 - 5.0A$  (in oil)
- $I_R = 1.0\mu A$
- $I_{FSM} = 150A$

### 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
S1KW16KA-1	16000	2.0	1.4	4.0	5.0	↑	↑	↑	↑
S1KW32KA-2	32000	1.5	1.0	3.0	3.8	↑	↑	↑	↑
S1KW48KA-3	48000	1.5	1.0	3.0	3.8	150	100	25.0	93.4
S1KW64KA-4	64000	1.5	1.0	3.0	3.8	↓	↓	↓	↓
S1KW80KA-5	80000	1.5	1.0	3.0	3.8	↓	↓	↓	↓
S1KW96KA-6	96000	1.5	1.0	3.0	3.8	↓	↓	↓	↓

### 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

**SEMTECH**

**STANDARD RECOVERY  
HIGH VOLTAGE, HIGH  
CURRENT RECTIFIER**

- S1KW16KA-1 S1KW32KA-2  
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S1KW80KA-5 S1KW96KA-6**

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**CHARACTERISTICS**

Device Type	Maximum Reverse Leakage Current $I_R$ @ $V_{RWM}$		Maximum Forward Voltage $V_F$ @ 3.0A @ 25°C	Maximum Reverse Recovery Time <sup>1</sup> $t_{rr}$ @ 25°C
	@ 25 °C	@ 100 °C		
	μA	μA	Volts	μS
S1KW16KA-1	↑ 1.0 ↓	↑ 20 ↓	16	↑ 2.0 ↓
S1KW32KA-2			32	
S1KW48KA-3			48	
S1KW64KA-4			64	
S1KW80KA-5			80	
S1KW96KA-6			72	

<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

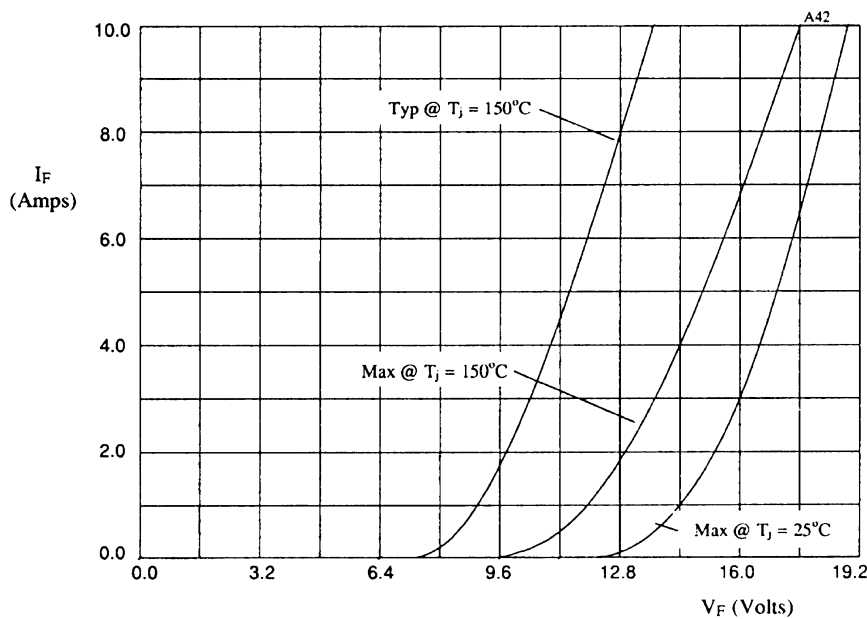


Figure 1. Forward voltage drop as a function of forward current.

TABLE 1

DEVICE	X-axis
S1KW16KA-1	x1
S1KW32KA-2	x2
S1KW48KA-3	x3
S1KW64KA-4	x4
S1KW80KA-5	x5
S1KW96KA-6	x6