

SEMTECH

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

**S4KW4KA-1 S4KW8KA-2
S4KW12KA-3 S4KW16KA-4
S4KW20KA-5 S4KW24KA-6**

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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

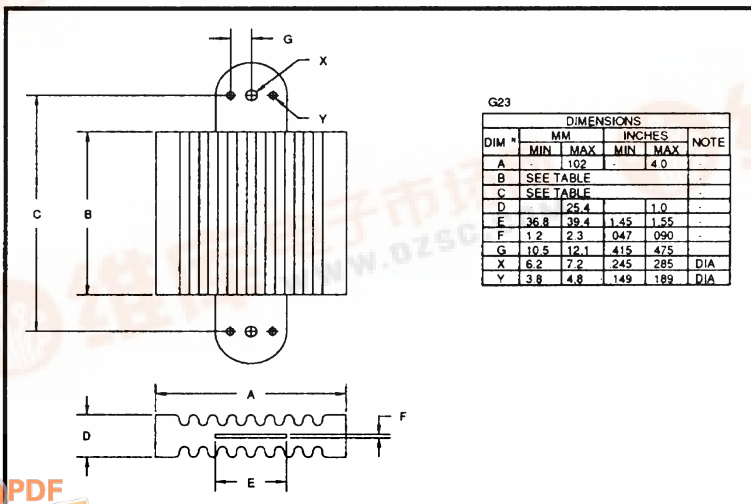
QUICK REFERENCE DATA

- $V_R = 4kV - 24kV$
- $I_F = 8.0 - 20.0A$ (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	Amps	A ² 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 ¹ 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	

¹ Measured on discrete devices prior to assembly

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

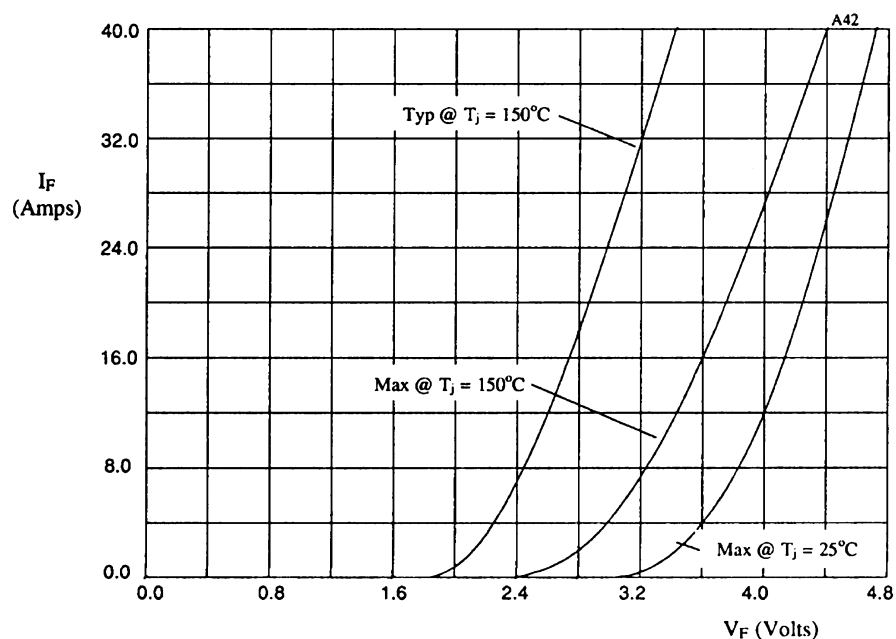


TABLE I

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

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