

POWER DISCRETES

Description

Quick reference data

$$V_R = 8\text{kV} - 48\text{kV}$$

$$I_F = 7.5\text{A} - 10.0\text{A (in oil)}$$

$$I_R = 1.0\mu\text{A}$$

$$I_{FSM} = 150\text{A}$$

Features

- ◆ Up to 48kV reverse voltage
- ◆ Air or oil environment
- ◆ High reverse surge current
- ◆ High thermal shock resistance
- ◆ Integral cooling fins

Absolute Maximum Ratings

(Apply per leg)

| Device Type | Working Reverse Voltage V_{RWM} | Average Rectifier Current $I_{F(AV)}$ | | | | 1 Cycle Surge Current $t_p = 8.3\text{mS}$ | | Repetitive Surge Current | I^2t $t_p = 8.3\text{mS}$ |
|-------------|-----------------------------------|---------------------------------------|------------|--------------------------|---------------|--|---------|--------------------------|-----------------------------|
| | | air @ 25°C | air @ 65°C | forced air 600CFM @ 55°C | in oil @ 25°C | @ 25°C | @ 100°C | | |
| | | Volts | Amps | Amps | Amps | Amps | Amps | Amps | A ² S |
| S1KW8C-1* | 8000 | 4.0 | 2.75 | 8.0 | 10.0 | 150 | 100 | 45.0 | 90 |
| S1KW16C-2* | 16000 | 3.0 | 2.0 | 6.0 | 7.5 | | | | |
| S1KW24C-3* | 24000 | 3.0 | 2.0 | 6.0 | 7.5 | | | | |
| S1KW32C-4* | 32000 | 3.0 | 2.0 | 6.0 | 7.5 | | | | |
| S1KW40C-5* | 40000 | 3.0 | 2.0 | 6.0 | 7.5 | | | | |
| S1KW48C-6* | 48000 | 3.0 | 2.0 | 6.0 | 7.5 | | | | |

* add suffix for desired circuit arrangement:

D = Doubler, N = Negative center tap, P = Positive center tap

($I_o \times 0.5$ for doubler)

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Electrical Characteristics

| Device Type | Reverse Current @ V_{RWM} | | Maximum Forward Voltage V_F @ 3.0A @ 25°C | Maximum Reverse Recovery Time ⁽¹⁾ t_{rr} @ 25°C |
|-------------|-----------------------------|---------|---|--|
| | @ 25°C | @ 100°C | | |
| | µA | µA | Volts | µS |
| S1KW8C-1* | 1.0 | 20.0 | 8 | 2.0 |
| S1KW16C-2* | | | 16 | |
| S1KW24C-3* | | | 24 | |
| S1KW32C-4* | | | 32 | |
| S1KW40C-5* | | | 40 | |
| S1KW48C-6* | | | 48 | |

Note:

(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 1

| Device Type | X-AXIS |
|-------------|--------|
| S1KW8C-1* | x1 |
| S1KW16C-2* | x2 |
| S1KW24C-3* | x3 |
| S1KW32C-4* | x4 |
| S1KW40C-5* | x5 |
| S1KW48C-6* | x6 |

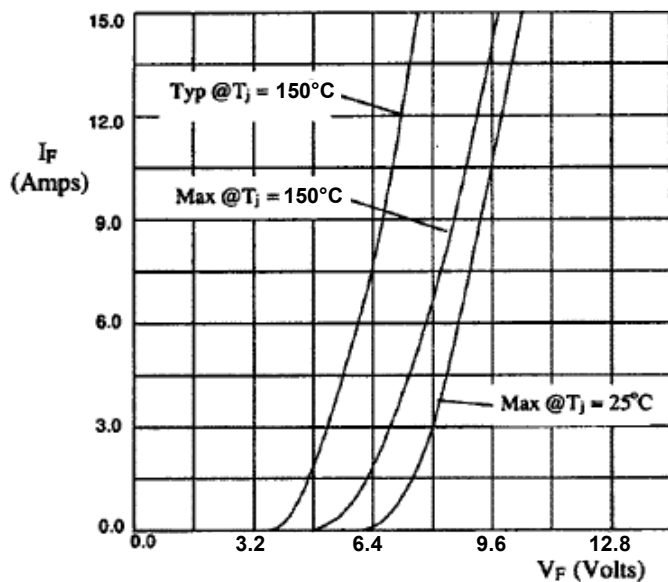
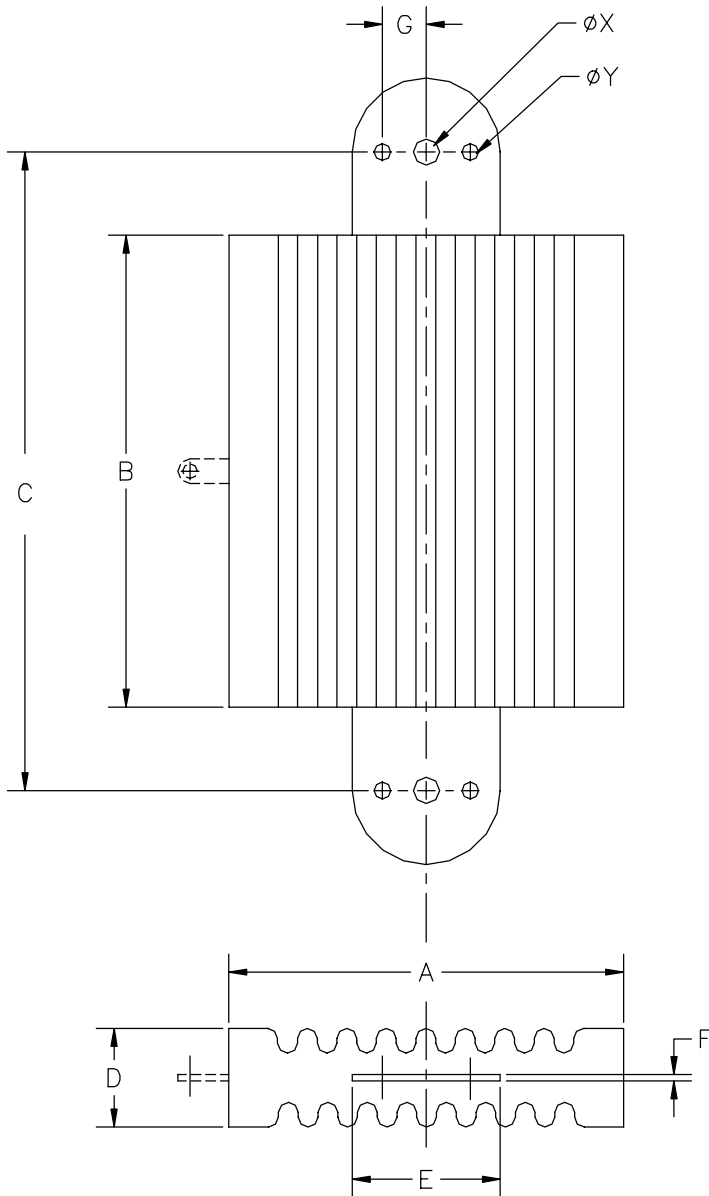


Figure 1. Forward voltage drop per leg as a function of forward current (see Table 1).

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Outline Drawing



G23A

| Dimensions | | | | | |
|------------------|-----------|------|-------------|------|------|
| DIM ^N | Inches | | Millimeters | | Note |
| | MIN | MAX | MIN | MAX | |
| A | - | 4.0 | - | 102 | - |
| B | See Table | | | | - |
| C | See Table | | | | - |
| D | - | 1.0 | - | 25.4 | - |
| E | 1.45 | 1.55 | 36.8 | 39.4 | - |
| F | .047 | .090 | 1.2 | 2.3 | |
| G | .415 | .475 | 10.5 | 12.1 | |
| X | .245 | .285 | 6.2 | 7.2 | Dia. |
| Y | .149 | .189 | 3.8 | 4.8 | Dia. |

| Dimensions (see drawing) | |
|-----------------------------|------------|
| B ± 0.030" | C ± 0.030" |
| inches | inches |
| 4.78 | 6.48 |
| 7.98 | 9.68 |
| 11.18 | 12.88 |
| 14.38 | 16.08 |
| 17.58 | 19.28 |
| 20.78 | 22.48 |

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