

January 16, 1998

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

### FAST RECOVERY, HIGH CURRENT 3-PHASE FULL WAVE BRIDGE RECTIFIER ASSEMBLIES

- Low forward voltage drop
- Low reverse leakage current
- Fast reverse recovery time
- Low thermal impedance
- High forward and surge current ratings

### QUICK REFERENCE DATA

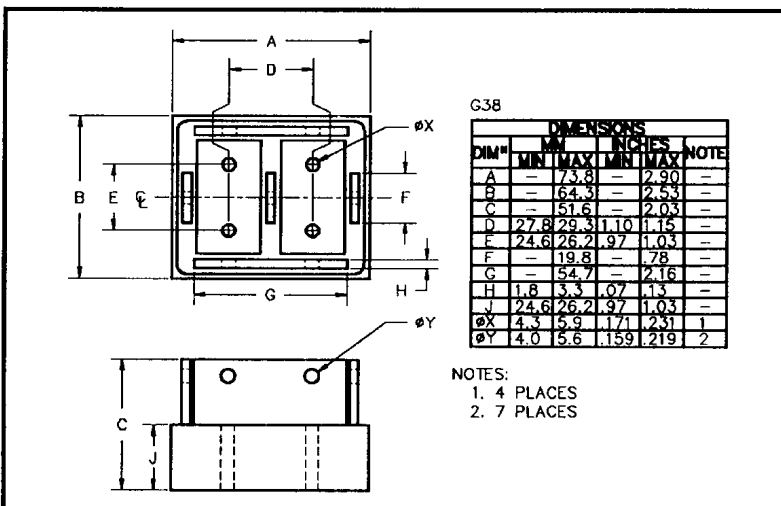
- $V_R = 50V - 400V$
- $I_F = 110A$
- $I_R = 18\mu A$
- $t_{rr} = 150ns$

### ABSOLUTE MAXIMUM RATINGS

| Device Type | Working Reverse Voltage $V_{RWM}$ | Average Rectified Current $I_{F(AV)}$ |         |         |                       |        |         | 1 Cycle Surge Current<br>$I_{FSM} @ t_p = 8.3ms$ |         |
|-------------|-----------------------------------|---------------------------------------|---------|---------|-----------------------|--------|---------|--------------------------------------------------|---------|
|             |                                   | @ case temperature                    |         |         | @ ambient temperature |        |         | @ 25°C                                           | @ 100°C |
|             |                                   | @ 55°C                                | @ 100°C | @ 125°C | @ 25°C                | @ 55°C | @ 100°C |                                                  |         |
|             | Volts                             | Amps                                  | Amps    | Amps    | Amps                  | Amps   | Amps    | Amps                                             | Amps    |
| SC3AS05F    | 50                                | 110                                   | 80      | 60      | 16                    | 11.5   | 7.2     | 750                                              | 480     |
| SC3AS1F     | 100                               |                                       |         |         |                       |        |         |                                                  |         |
| SC3AS2F     | 200                               |                                       |         |         |                       |        |         |                                                  |         |
| SC3AS4F     | 400                               |                                       |         |         |                       |        |         |                                                  |         |

$$R_{\theta JC} = 0.3^{\circ}C/W$$

### MECHANICAL



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### ELECTRICAL CHARACTERISTICS

| Device Type                               | Reverse Leakage Current<br>$I_R$ @ $V_{RWM}$ |         | Maximum Forward Voltage / leg<br>$V_F$ @ 18A<br>@ 25°C | Maximum Reverse Recovery Time<br>$t_{rr}$ @ 25°C | Maximum operating & storage temp range.<br>$T_{OP}$ $T_{STG}$ |
|-------------------------------------------|----------------------------------------------|---------|--------------------------------------------------------|--------------------------------------------------|---------------------------------------------------------------|
|                                           | @ 25°C                                       | @ 100°C |                                                        |                                                  |                                                               |
|                                           | $\mu A$                                      | $\mu A$ |                                                        |                                                  |                                                               |
| SC3AS05F<br>SC3AS1F<br>SC3AS2F<br>SC3AS4F | 18                                           | 450     | 1.1                                                    | 150                                              | -55<br>to<br>+150                                             |

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

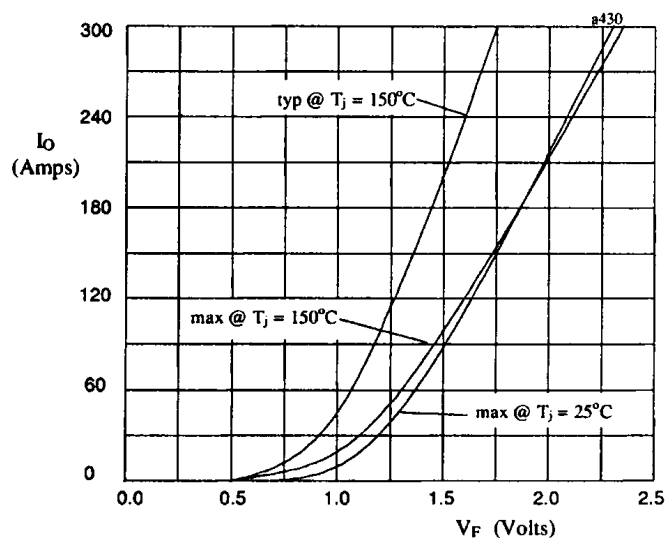


Fig 1. Forward voltage drop against output current per leg

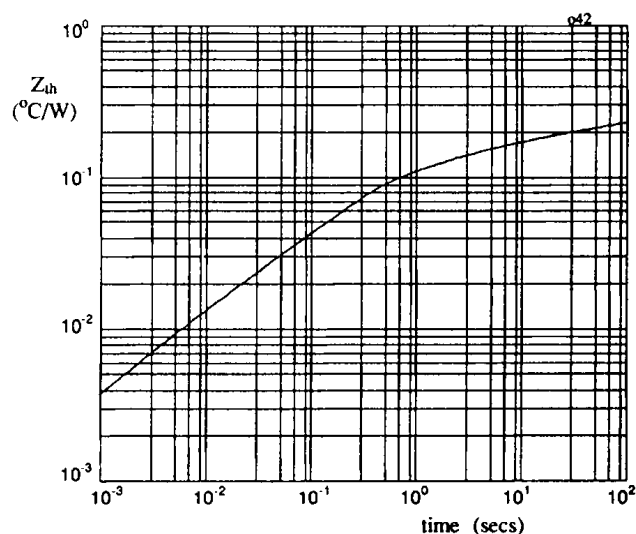


Fig 2. Transient thermal impedance characteristic per leg