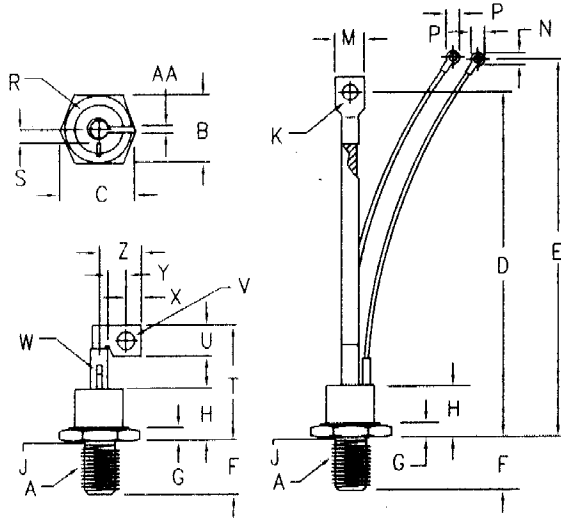


# Silicon Controlled Rectifier Series 150C



TO-209AB (T093)

Notes:

- 3/4-16 UNF-3A
- Full thread within 2 1/2 threads
- For insulated cathode lead, add suffix "IL" to catalog number

| Dim. | Inches  |         | Millimeter |         | Notes |
|------|---------|---------|------------|---------|-------|
|      | Minimum | Maximum | Minimum    | Maximum |       |
| A    | ---     | ---     | ---        | ---     | 1     |
| B    | 1.237   | 1.243   | 31.42      | 31.57   |       |
| C    | 1.350   | 1.360   | 34.29      | 34.54   |       |
| D    | 7.428   | 7.671   | 188.67     | 194.84  |       |
| E    | 7.382   | 8.100   | 187.50     | 205.74  |       |
| F    | 1.047   | 1.077   | 26.59      | 27.36   |       |
| G    | .365    | .385    | 9.27       | 9.78    |       |
| H    | ---     | 1.383   | ---        | 35.13   |       |
| J    | .660    | .749    | 16.76      | 19.02   | 2     |
| K    | .338    | .348    | 8.59       | 8.84    | Dia.  |
| M    | .625    | .687    | 15.88      | 17.45   |       |
| N    | .140    | .150    | 3.56       | 3.81    |       |
| P    | ---     | .295    | ---        | 7.49    |       |
| R    | ---     | 1.125   | ---        | 28.56   | Dia.  |
| S    | .295    | .305    | 7.49       | 7.75    |       |
| T    | ---     | 2.550   | ---        | 64.77   |       |
| U    | .620    | .630    | 15.75      | 16.00   |       |
| V    | .276    | .286    | 7.01       | 7.26    | Dia.  |
| W    | .065    | .075    | 1.65       | 1.91    | Dia.  |
| X    | .245    | .255    | 6.22       | 6.48    |       |
| Y    | .243    | ---     | 6.17       | ---     |       |
| Z    | .770    | .790    | 19.56      | 20.07   |       |
| AA   | .120    | .130    | 3.05       | 3.30    |       |

|          | Forward & Reverse Repetitive Blocking | Reverse Transient Blocking |
|----------|---------------------------------------|----------------------------|
| 150C60B  | 600                                   | 700                        |
| 150C80B  | 800                                   | 900                        |
| 150C100B | 1000                                  | 1100                       |
| 150C120B | 1200                                  | 1300                       |

Add suffix "F" for flag lead  
To specify dv/dt higher than 200V/usec., contact factory.

- High dv/dt-200 V/usec.
- 3000 Amperes surge current capability
- Low forward on-state voltage
- Primarily for line commutated converters
- Economical for general purpose phase control applications

| Electrical Characteristics        |                               |                          |
|-----------------------------------|-------------------------------|--------------------------|
| Max. RMS on-state current         | $I_{T(RMS)}$ 235 Amps         | $T_C = 73^\circ C$       |
| Max. average on-state cur.        | $I_{T(AV)}$ 150 Amps          | $T_C = 73^\circ C$       |
| Max. peak on-state voltage        | $V_{TM}$ 1.6 Volts            | $I_{TM} = 500 A(peak)$   |
| Max. holding current              | $I_H$ 200 mA                  |                          |
| Max. peak one cycle surge current | $I_{TSM}$ 3000 A              | $T_C = 73^\circ C, 60Hz$ |
| Max. $I^2t$ capability for fusing | $I^2t$ 37,000A <sup>2</sup> S | $t = 8.3 ms$             |

| Thermal and Mechanical Characteristics |                 |                                  |
|--|-----------------|----------------------------------|
| Operating junction temp range          | $T_J$           | -65°C to 125°C                   |
| Storage temperature range              | $T_{STG}$       | -65°C to 150°C                   |
| Maximum thermal resistance             | $R_{\theta JC}$ | 0.20°C/W Junction to case        |
| Typical thermal resistance (greased)   | $R_{\theta CS}$ | 0.40°C/W Case to sink            |
| Mounting torque                        |                 | 250-300 inch pounds              |
| Weight                                 |                 | 7.4 ounces (211.1 grams) typical |

### Switching

|  |                |            |                        |
|--|----------------|------------|------------------------|
| Critical rate of rise of on-state current (note 1) | di/dt          | 100A/usec. | T <sub>J</sub> = 125°C |
| Typical delay time (note 1)                        | t <sub>d</sub> | 3.0 usec.  | T <sub>J</sub> = 125°C |
| Typical circuit commuted turn-off time (note 2)    | t <sub>q</sub> | 100 usec.  | T <sub>J</sub> = 125°C |

Note 1: I<sub>TM</sub> = 100A, V<sub>D</sub> = V<sub>DRM</sub>, V<sub>GT</sub> = 12V open circuit, 20 ohm-0.1 usec rise time -

Note 2: I<sub>TM</sub> = 100A, di/dt = 5A/usec, V<sub>R</sub> during turn-off internal = 50V min, reapplied dv/dt = 20V/usec., linear to rated V<sub>DRM</sub>, V<sub>GT</sub> = 0V

### Triggering

|                                  |                    |       |                           |
|----------------------------------|--------------------|-------|---------------------------|
| Max. gate voltage to trigger     | V <sub>GT</sub>    | 3.0V  | T <sub>J</sub> = 25°C     |
| Max. nontriggering gate voltage  | V <sub>GD</sub>    | 0.25V | T <sub>J</sub> = 125°C    |
| Max. gate current to trigger     | I <sub>GT</sub>    | 150mA | T <sub>J</sub> = 25°C     |
| Max. peak gate power             | P <sub>GM</sub>    | 10W   |                           |
| Average gate power               | P <sub>G(AV)</sub> | 2.0W  | t <sub>p</sub> = 10 usec. |
| Max. peak gate current           | I <sub>GM</sub>    | 2.0A  |                           |
| Max. peak gate voltage (forward) | V <sub>GM</sub>    | 10V   |                           |
| Max. peak gate voltage (reverse) | V <sub>GM</sub>    | 5.0V  |                           |

### Blocking

|  |                  |            |   |
|--|------------------|------------|---|
| Max. leakage current                       | I <sub>DRM</sub> | 20mA       | T <sub>J</sub> = 125°C & V <sub>DRM</sub> |
| Max. reverse leakage                       | I <sub>RRM</sub> | 20mA       | T <sub>J</sub> = 125°C & V <sub>RRM</sub> |
| Critical rate of rise of off-state voltage | dv/dt            | 200V/usec. | T <sub>J</sub> = 125°C                    |