



WESTCODE

SEMICONDUCTORS



Technical
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DC680
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Ceramic Capsule Silicon Diodes Type CXC680

1400 amperes average: up to 4400 volts V_{RRM}

RATINGS Maximum values at 160°C, T_j , unless stated otherwise

| RATING | CONDITIONS | SYMBOL | |
|---|---|------------------------------|---|
| Average forward current | Half sine wave $\left\{ \begin{array}{l} 55^\circ\text{C heatsink temperature} \\ \text{(double side cooled)} \\ 100^\circ\text{C heatsink temperature} \\ \text{(single side cooled)} \end{array} \right.$ | $I_{F(AV)}$ | 1400A 617A |
| R.M.S current | 25°C heatsink temperature, double side cooled | $I_F(RMS)$ | 2550A |
| DC forward current | 25°C heatsink temperature, double side cooled | I_F | 2280A |
| Peak one-cycle surge (non-repetitive) of forward current | 10ms duration $\left\{ \begin{array}{l} 60\% V_{RRM} \text{ re-applied} \\ V_R \leq 10 \text{ volts} \end{array} \right.$ | $I_{FSM}(1)$ $I_{FSM}(2)$ | 13000A 14300A |
| Maximum permissible surge energy | 10ms duration $\left\{ \begin{array}{l} 60\% V_{RRM} \text{ re-applied} \\ V_R \leq 10 \text{ volts} \end{array} \right.$ 3ms duration $V_R \leq 10 \text{ volts}$ | $I^2t(1)$ $I^2t(2)$ | 845000A ² s 1022000A ² s 746000A ² s |
| Operating temperature range | | T_{hs} | -30 +160°C |
| Storage temperature | | T_{stg} | -40 +200°C |

CHARACTERISTICS Maximum values at 160°C, T_j , unless stated otherwise

| CHARACTERISTIC | CONDITIONS | SYMBOL | |
|--|--|----------------|------------------------|
| Peak forward voltage drop | At 3000A, I_{FM} | V_{FM} | 2.48V |
| Forward conduction threshold voltage | | V_O | 0.975V |
| Forward conduction slope resistance | | r | 0.501mΩ |
| Peak reverse current | At V_{RRM} | I_{RRM} | 50mA |
| Thermal resistance, junction to heat sink for a device with a maximum forward volt-drop characteristic | Capsule Single side cooled Double side cooled | $R_{th(j-hs)}$ | 0.028°C/W 0.056°C/W |

| VOLTAGE CODE | → | 36 | 38 | 40 | 42 | 44 | | | | |
|------------------------|-----------|------|------|------|------|------|--|--|--|--|
| Repetitive voltage | V_{RRM} | 3600 | 3800 | 4000 | 4200 | 4400 | | | | |
| Non-repetitive voltage | V_{RSM} | 3700 | 3900 | 4100 | 4300 | 4500 | | | | |

ORDERING INFORMATION

(Please quote device code as explained below – 10 digits)

| S | W | ● | ● | C | X | C | 6 | 8 | 0 |
|------------------|---|--------------------------|---|--|---|---|-----------------|---|---|
| Fixed basic code | | Voltage Code (see above) | | Fixed outline code DO-200AC cold weld capsule | | | Fixed type code | | |

Typical code: SW42CXC680 = 4200V_{RRM} type CXC680 diode

In the interest of product improvement, Westcode reserves the right to change specifications at any time without notice.

DC680

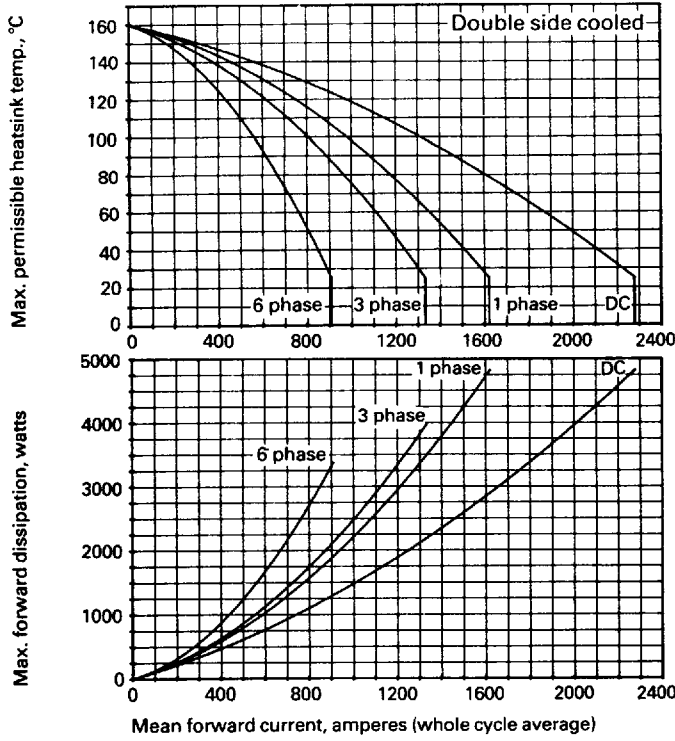


Figure 1 Dissipation/sink temperature v. mean forward current

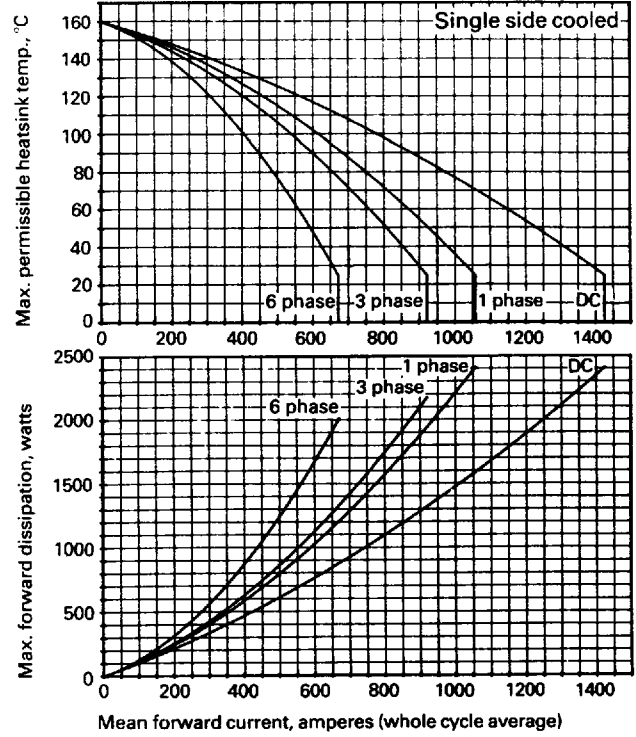


Figure 2 Dissipation/sink temperature v. mean forward current

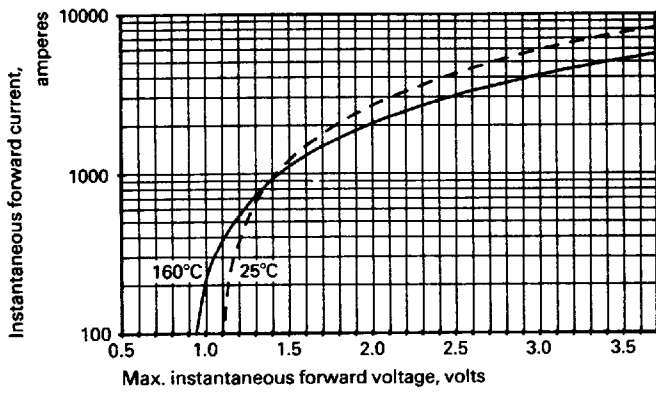


Figure 3 Forward voltage characteristic

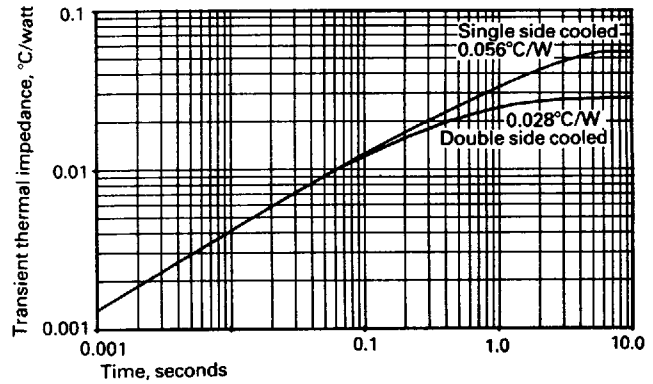


Figure 4 Transient thermal impedance, junction to heatsink

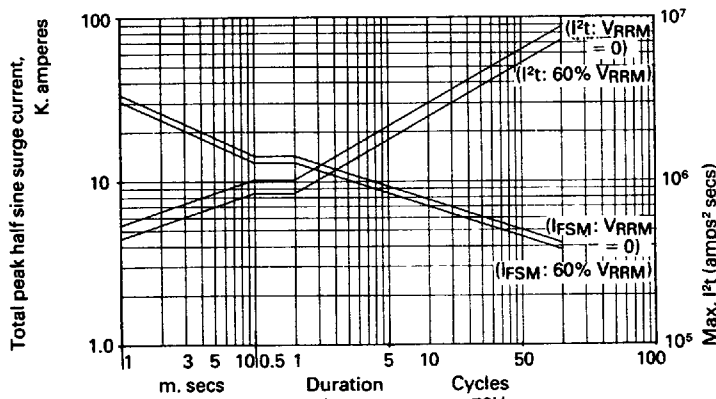
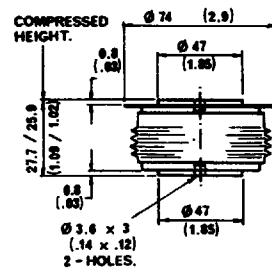


Figure 5 Max. non repetitive surge current at initial junction temperature 160°C



DO-200 AC

Dimensions in mm (inches)
 Mounting force: 1900 - 2600 Kg
 Weight: 510 grams



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