# WESTCODE SEMICONDUCTORS

Series SWxxCXC445

## Capsule Rectifier Diode

Consists of a diffused silicon element mounted in an hermetic ceramic cold welded capsule.

| Ratings | Unless otherwise stated Tj = 160°C | Maximum Limits | | | | | | Units |
|---|---|---|---|---|---|---|---|---|
| | **Voltage Codes** | **20** | **22** | **24** | **26** | **28** | **30** | |
| $V_{RRM}$ | Repetitive peak reverse voltage. | 2000 | 2200 | 2400 | 2600 | 2800 | 3000 | V |
| $V_{RSM}$ | Non-repetitive peak reverse voltage. | 2100 | 2300 | 2500 | 2700 | 2900 | 3100 | V |

| | | | | |
|---|---|---|---|---|
| $I_{F(AV)}$ | Average forward current | Half sine wave, 55°C heatsink temperature (double side cooled) | 1075 | A |
| | | Half sine wave, 100°C heatsink temperature (single side cooled) | 445 | A |
| $I_{F(RMS)}$ | R.M.S forward current | 25°C heatsink temperature, double side cooled | 1985 | A |
| $I_F$ | Continuous forward current | 25°C heatsink temperature, double side cooled | 1700 | A |
| $I_{FSM\ (1)}$ | Peak one-cycle surge | 10ms duration, 60% $V_{RRM}$ re-applied | 10.8 | KA |
| $I_{FSM\ (2)}$ | Peak one-cycle surge | 10ms duration, $V_R \leq 10$ volts | 11.8 | KA |
| $I^2t_{(2)}$ | Maximum permissible surge energy | 10ms duration, $V_R \leq 10$ volts | $696 \times 10^3$ | $A^2s$ |
| | | 3ms duration, $V_R \leq 10$ volts | $515 \times 10^3$ | $A^2s$ |
| Tj | Operating temperature range | | −55 to + 160 | °C |
| $T_{stg}$ | Storage temperature range | | −55 to + 200 | °C |

| **Characteristics** | Unless otherwise indicated Tj = 160°C | | | |
|---|---|---|---|---|
| $V_{FM}$ | Peak forward voltage | $I_F$ = 3090A | 2.13 | V |
| $V_O$ | Forward conduction threshold voltage | | 0.92 | V |
| r | Forward conduction slope resistance | | 0.39 | mΩ |
| $I_{RRM}$ | Repetitive peak reverse current | At $V_{RRM}$ | 30.0 | mA |
| $R_{th(j-hs)}$ | Thermal resistance, junction to heat sink. | Double side cooled | 0.05 | °C/W |
| | | Single side cooled | 0.10 | °C/W |

**Ordering Information** (Please quote device code as explained below - 10 digits)

| S W | ● ● | C X C | 4 4 5 |
|---|---|---|---|
| Fixed type code | Voltage Code (see ratings) | Fixed Outline Code | Fixed Type Code |

Typical code : SW26CXC445, 2600 $V_{RRM}$

Details of a full range of capsule mounting clamps are available - ask for brochure.

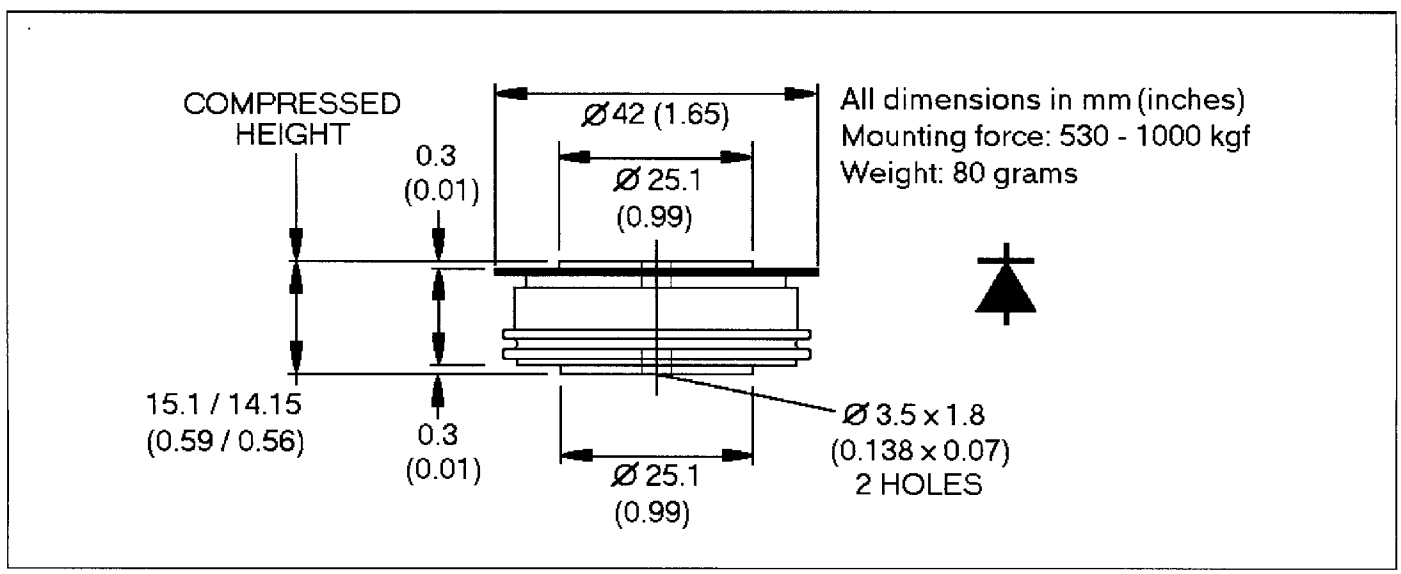


**Figure 1. Dissipation/Sink Temperature v. Mean Forward Current.**

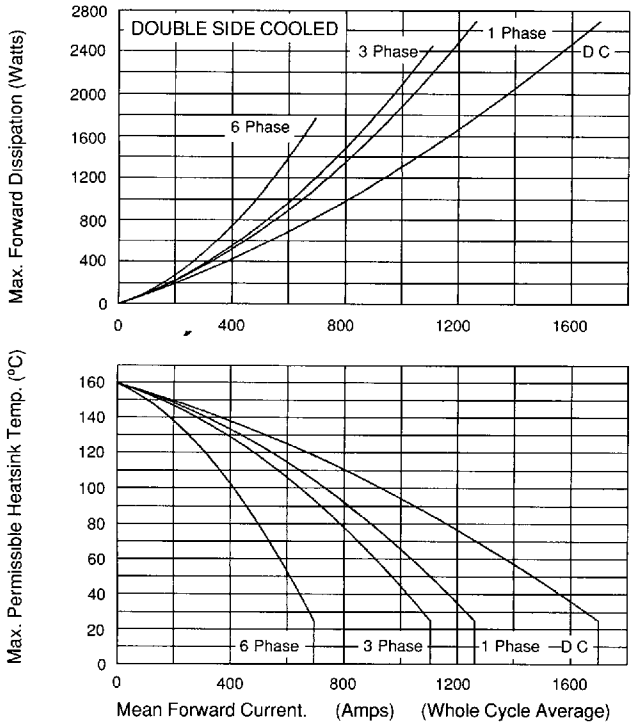



**Figure 2. Dissipation/Sink Temperature v. Mean Forward Current.**

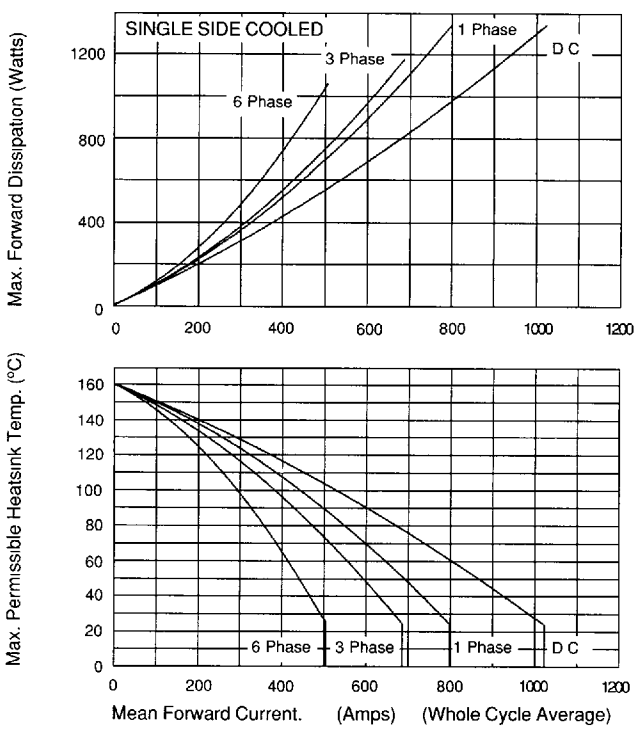
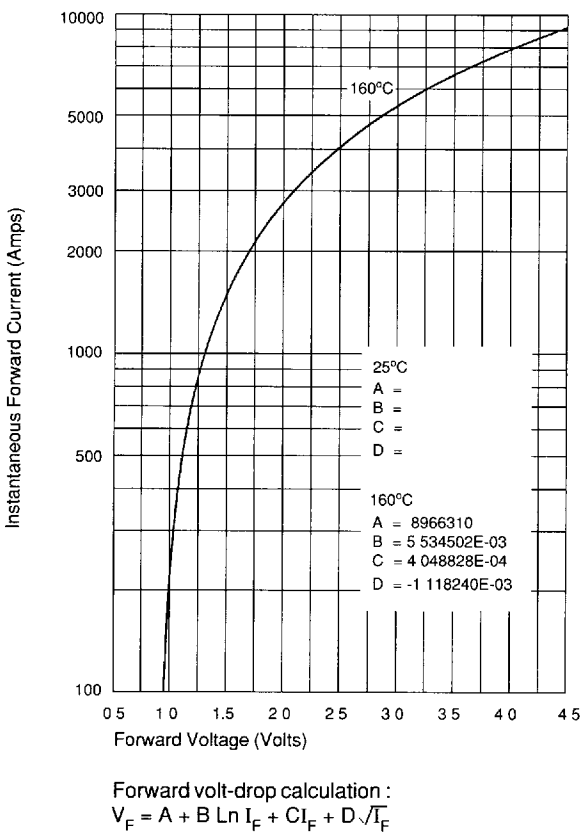



**Figure 3. Limit Forward Characteristic at 160°C.**




Forward volt-drop calculation :

$V_F = A + B \ln I_F + CI_F + D\sqrt{I_F}$

**Figure 4. Junction to Sink Transient Thermal Impedance.**

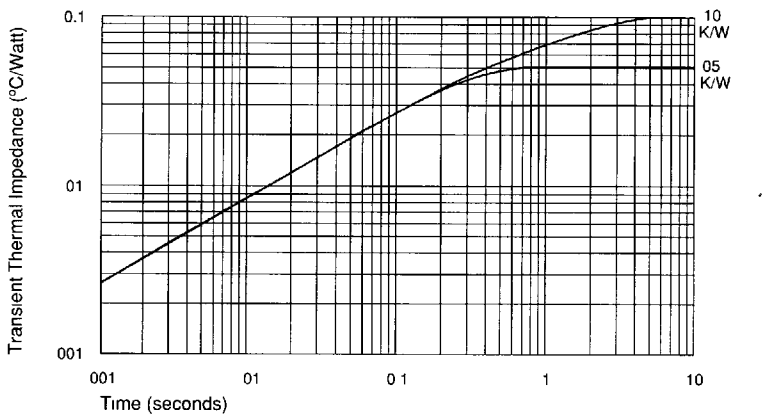
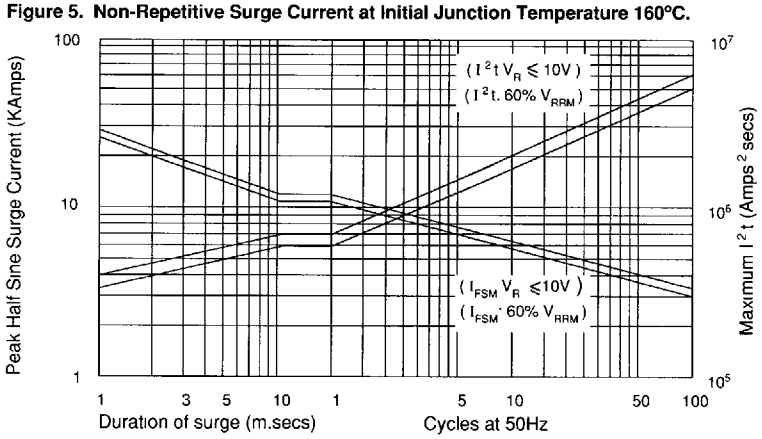



**Figure 5. Non-Repetitive Surge Current at Initial Junction Temperature 160°C.**



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