



WESTCODE SEMICONDUCTORS

 Technical
Publication

DC805

 Issue 1
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Ceramic Capsule Silicon Diodes Type CXC805

 1625 amperes average: up to 2200 volts V_{RRM}

RATINGS Maximum values at 175°C, T_j , unless stated otherwise

RATING	CONDITIONS	SYMBOL	
Average forward current	Half sine wave $\left\{ \begin{array}{l} 55^\circ\text{C heatsink temperature} \\ \text{(double side cooled)} \\ 100^\circ\text{C heatsink temperature} \\ \text{(single side cooled)} \end{array} \right.$	$I_{F(AV)}$	1625A 800A
R.M.S current	25°C heatsink temperature, double side cooled	$I_F(RMS)$	2950A
DC forward current	25°C heatsink temperature, double side cooled	I_F	2760A
Peak one-cycle surge (non-repetitive) of forward current	8.3ms duration $\left\{ \begin{array}{l} 60\% V_{RRM} \text{ re-applied} \\ V_R \leq 10 \text{ volts} \end{array} \right.$	$I_{FSM}(1)$ $I_{FSM}(2)$	16320A 18760A
Maximum permissible surge energy	8.3ms duration $\left\{ \begin{array}{l} 60\% V_{RRM} \text{ re-applied} \\ V_R \leq 10 \text{ volts} \end{array} \right.$ 3ms duration $V_R \leq 10 \text{ volts}$	$I^2t(1)$ $I^2t(2)$	1144000A ² s 1513000A ² s 1160000A ² s
Operating temperature range		T_{hs}	-30 +175°C
Storage temperature		T_{stg}	-40 +200°C

CHARACTERISTICS Maximum values at 175°C, T_j , unless stated otherwise

CHARACTERISTIC	CONDITIONS	SYMBOL	
Peak forward voltage drop	At 3770A, I_{FM}	V_{FM}	1.93V
Forward conduction threshold voltage		V_O	0.87V
Forward conduction slope resistance		r	0.28mΩ
Peak reverse current	At V_{RRM}	I_{RRM}	30mA
Thermal resistance, junction to heat sink for a device with a maximum forward volt-drop characteristic	Capsule Single side cooled Double side cooled	$R_{th(j-hs)}$	0.065°C/W 0.033°C/W

VOLTAGE CODE →	02	04	06	08	10	12	14	16	18	20	22
Repetitive voltage V_{RRM}	200	400	600	800	1000	1200	1400	1600	1800	2000	2200
Non-repetitive voltage V_{RSM}	300	500	700	900	1100	1300	1500	1700	1900	2100	2300

ORDERING INFORMATION

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

S	W	●	●	C	X	C	8	0	5
Fixed basic code	Voltage Code (see above)	Fixed outline code DO-200AB cold weld capsule				Fixed type code			

 Typical code: SW12CXC805 = 1200V_{RRM} type CXC805 diode

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

DC805

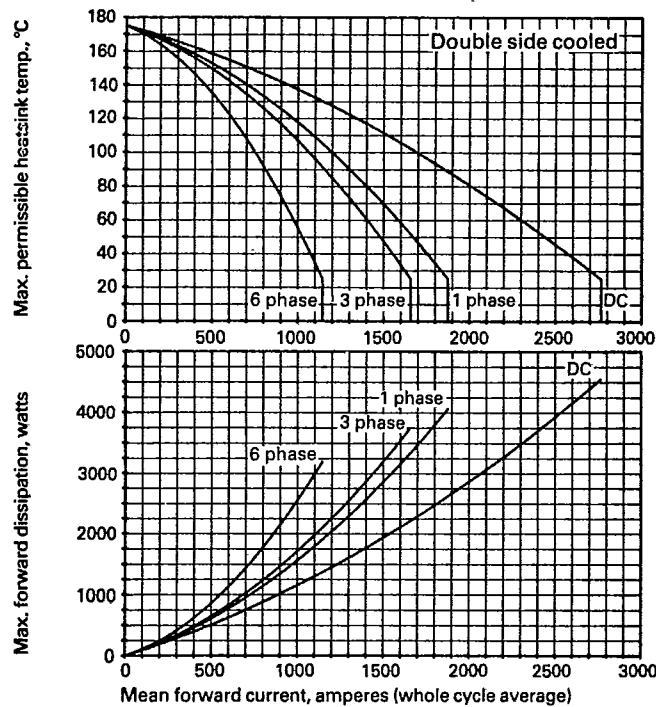


Figure 1 Dissipation/sink temperature v. mean forward current

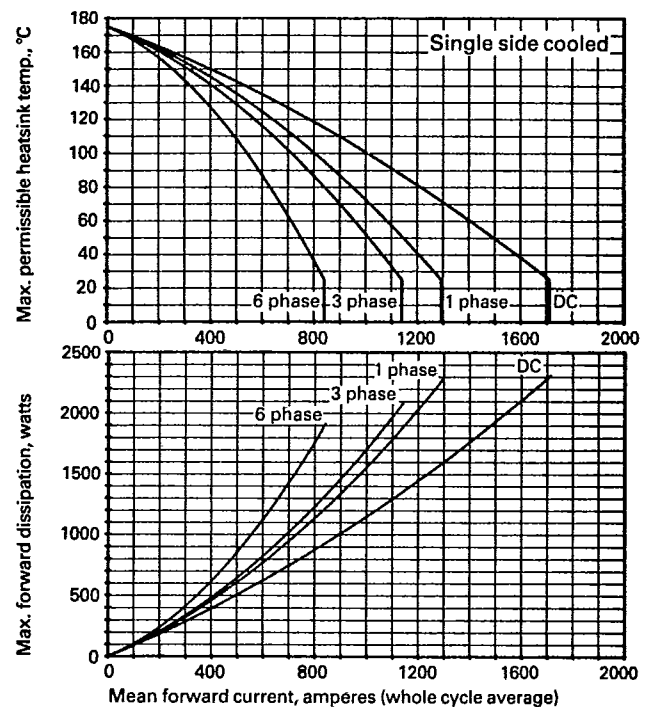


Figure 2 Dissipation/sink temperature v. mean forward current

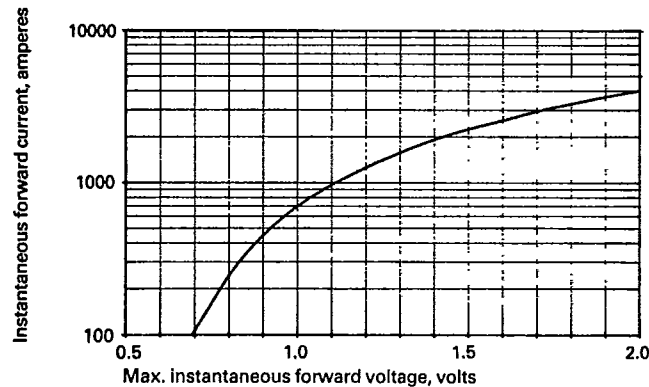


Figure 3 Forward voltage characteristic

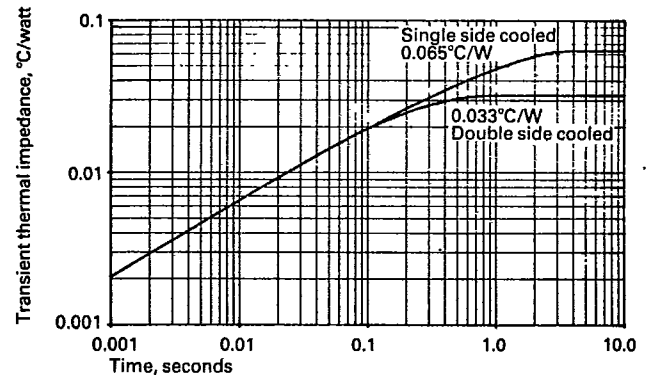


Figure 4 Transient thermal impedance, junction to heatsink

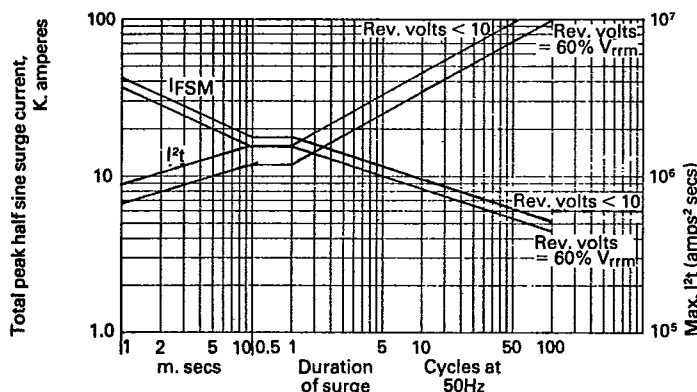
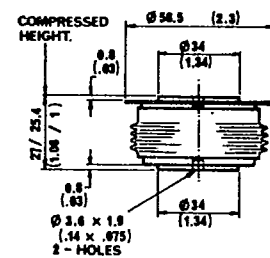


Figure 5 Max. non repetitive surge current at initial junction temperature 175°C



DO-200 AB

Dimensions in mm (inches)

Mounting force: 1000 - 2000 Kg

Weight: 340 grams

WESTCODE SEMICONDUCTORS

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