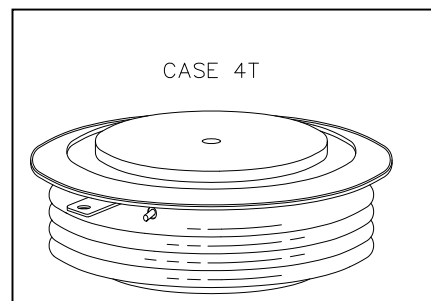


CSR772 Reverse-conducting Thyristor**2700 V_{DRM}; 1740 A rms**

RCT FOR INVERTER AND CHOPPER APPLICATIONS**Features:**

- . All Diffused Structure
- . Interdigitated Amplifying Gate Configuration
- . Blocking capability up to 2700 volts
- . Guaranteed Maximum Turn-Off Time
- . High dV/dt Capability
- . Pressure Assembled Device

**ELECTRICAL CHARACTERISTICS AND RATINGS****Blocking - Off State**

Device Type	V _{DRM} (1)	V _{DSM} (1)
CSR772-25	2500	2500
CSR772-27	2700	2700

V_{DRM} = Repetitive peak off state voltage

Repetitive peak off state leakage	I _{DRM}	20 mA 100mA (3)
Critical rate of voltage rise	dV/dt (4)	700 V/μsec

Notes:All ratings are specified for T_j=25 °C unless otherwise stated.

- (1) All voltage ratings are specified for an applied 50Hz/60Hz sinusoidal waveform over the temperature range -40 to +125 °C.
- (2) 10 msec. max. pulse width
- (3) Maximum value for T_j = 125 °C.
- (4) Minimum value for linear and exponential waveshape to 80% rated V_{DRM}. Gate open. T_j = 125 °C.
- (5) Non-repetitive value.

Conducting - on state

Parameter	Symbol	Min	Max.	Typ.	Units	Conditions
RMS value of on-state current	I _{TRMS}		1740		A	Nominal value T _C =50 °C
Average on-state current	I _{T(AV)}		675		A	Continuous single-phase, half sine wave, 180° conduction T _C =85 °C
Peak one cycle surge (non repetitive) current	I _{TSM}		15000		A	8.3 msec (60Hz), sinusoidal wave-shape, 180° conduction, T _j = 125 °C
I _T square t	I _T ² t		9.28x10 ⁵		A ² s	8.3 msec
RMS reverse current	I _{R(RMS)}		460		A	T _C =50 °C
Average reverse current	I _{R(AV)}		175		A	Continuous single-phase, half sine wave, 180° conduction T _C =85 °C
Peak one cycle surge (non repetitive) current	I _{FSM}		4270		A	8.3 msec (60Hz), sinusoidal wave-shape, 180° conduction, T _j = 125 °C
I _R square t	I _R ² t		75800		A ² s	8.3 msec
Peak on-state voltage	V _{TM}		2.6		V	I _{TM} =2000A T _j = 125 °C
Peak reverse voltage	V _{RM}		3.3		V	I _{RM} =1200A, T _j = 125 °C
Critical rate of rise of on-state current (5)	di/dt		300		A/μs	V _D =2/3V _{DRM} , I _{TM} =2000A f=60Hz, T _j =125 °C

ELECTRICAL CHARACTERISTICS AND RATINGS (cont.)

Gating

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Peak gate power dissipation	P_{GM}		16		W	$t_p = 40 \text{ us}$
Average gate power dissipation	$P_{G(AV)}$		5		W	
Peak gate current	I_{GM}		10		A	
Gate current required to trigger all units	I_{GT}	30	500		mA	$V_D = 12 \text{ V}; T_j = +25^\circ\text{C}$
Gate voltage required to trigger all units	V_{GT}		4		V	$V_D = 12 \text{ V}; T_j = 25^\circ\text{C}$
Peak non- trigger voltage	V_{GD}		0.2		V	$T_j = 125^\circ\text{C}; V_D = 1/2 V_{DRM}$

Dynamic

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Turn-off time	t_q	30	50	35	μs	$I_{TM} = 675 \text{ A}; di_1/dt = -50 \text{ A}/\mu\text{s};$ $di_2/dt = 50 \text{ A}/\mu\text{s}; I_{RM} = 500 \text{ A}; dV/dt = 50 \text{ V}/\mu\text{s}$ $V_{DR} = 3/4 V_{DRM}$ $T_j = 125^\circ\text{C}; tw = 60 \mu\text{s}$
Reverse recovery time	t_{rr}		5.6		μs	$I_{FM} = 320 \text{ A}; di_1/dt = -50 \text{ A}/\mu\text{s}; V_D = 100 \text{ V}$ $T_j = 125^\circ\text{C};$

* For guaranteed max. value, contact factory.

THERMAL AND MECHANICAL CHARACTERISTICS AND RATINGS

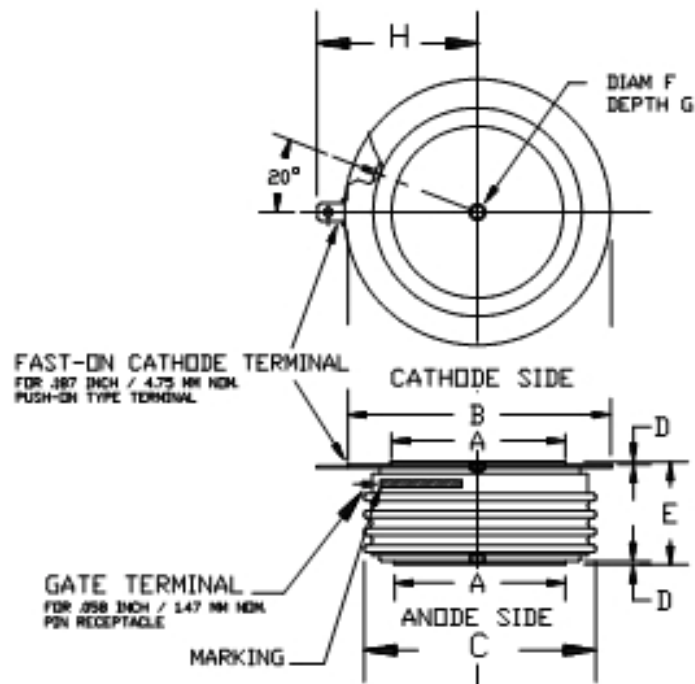
Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Operating temperature	T_j	-40	+125		$^\circ\text{C}$	
Storage temperature	T_{stg}	-40	+150		$^\circ\text{C}$	
Thyristor part thermal resistance - junction to case	$R_{\Theta I(j-c)}$		0.03		$^\circ\text{C}/\text{W}$	Double sided cooled
Diode part thermal resistance – junction to fin	$R_{\Theta M(j-f)}$		0.10		$^\circ\text{C}/\text{W}$	Double sided cooled
Mounting force	P	5500 24.5	6000 26.7		lb. kN	
Weight	W			460	g	

* Mounting surfaces smooth, flat and greased

Note : for case outline and dimensions, see case outline drawing in page 4 of this Technical Data

CASE OUTLINE AND DIMENSIONS.

CSR772 Reverse-conducting Thyristor



STROKE DISTANCE = .58 INCH / 14.7 MM MIN.
CREEPAGE DISTANCE = 180 INCH / 25.4 MM MIN.

OUTLINE DIMENSIONS - CASE 4T				
DIMENSIONS	Min. mm	Max. mm	Min. In.	Max. In.
DIAM A	43.18	48.26	1.70	1.90
DIAM B	63.50	75.18	2.50	2.96
DIAM C	--	67.31	--	2.65
D	0.76	--	0.03	--
E	25.4(20)	27(21)	1(0.79)	1.07(0.83)
F	3.30	3.81	0.13	0.15
G	1.78	2.03	0.07	0.08
H	--	44.20	--	1.74