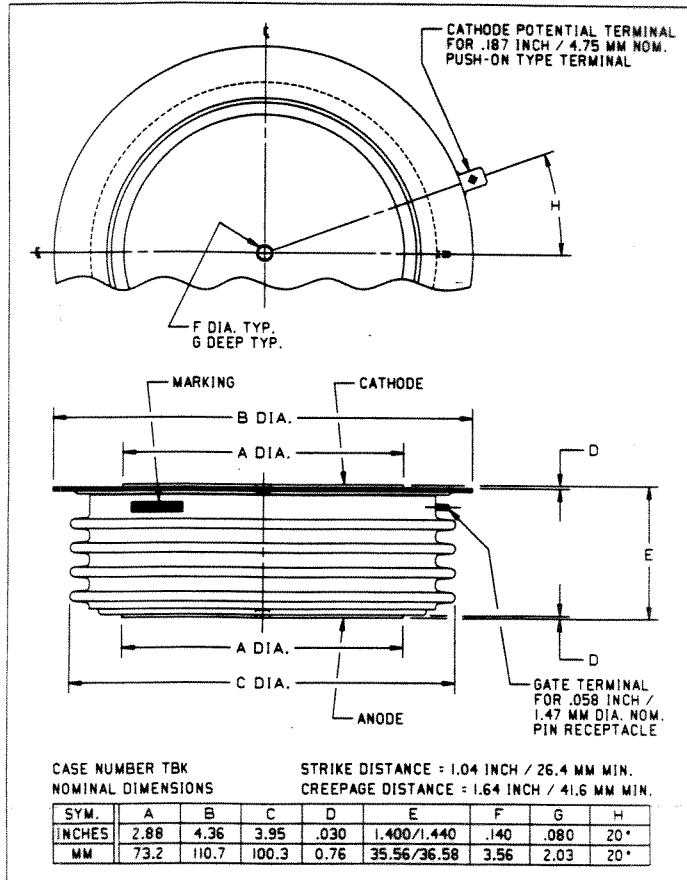


Powerex, Inc., Hillis Street, Youngwood, Pennsylvania 15697 (412)925-7272
 Powerex Europe, S.A., 428 Avenue G. Durand, BP107, 72003 Le Mans, France(43) 72.75.15



Also available in thin package - 26mm

Fast Switching Thyristor

2100 Amperes/Up to 2000 Volts

Description:

Powerex Silicon Controlled Rectifiers (SCR) are designed for high current, fast switching applications. The involute, interdigitated gate pattern optimizes the turn-on area for high di/dt capability.

Features:

- Fast Turn Off Times
- Low Recovered Charge
- High dv/dt Capability
- Low Forward Voltage
- Also Available in Thin Pack (26mm) for Higher Current Capability

Applications:

- Induction Heating
- UPS Systems
- AC Motor Controls

Ordering Information

Select the complete five or six digit device part number from the table below.

Type	Voltage Code	V _{DRM} V _{RRM}
C770	L	2000 V
	PN	1800 V
	PM	1600 V
	PD	1400 V
	PB	1200 V



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C770

Fast Switching SCR

2100 Amperes Avg / Up to 2000 Volts

Absolute Maximum Ratings

Characteristics	Symbol		Units
RMS On-State Current	$I_{T(RMS)}$	3300	A
Average Current	$I_{T(AV)}$	2100	A
Peak One Cycle Surge On-State Current (Non-Repetitive) 60Hz	I_{TSM}	38,000	A
Peak One Cycle Surge On-State Current (Non-Repetitive) 50Hz	I_{TSM}	35,000	A
Critical Rate-of-Rise of On-State Current (Non-Repetitive)	di/dt	800	A/ μ s
Critical Rate-of-Rise of On-State Current (Repetitive)	di/dt	300	A/ μ s
I^2t for Fusing for One Cycle	I^2t	6.0×10^6	A ² s
Peak Gate Power Dissipation	P_{GM}	16	W
Average Gate Power Dissipation	$P_{G(av)}$	3	W
Operating Temperature	T_{STG}	-40 to 125°C	°C
Storage Temperature	T_J	-40 to 150°C	°C
Mounting Force		8000 to 9000 35.5 - 40.0	lb. kN



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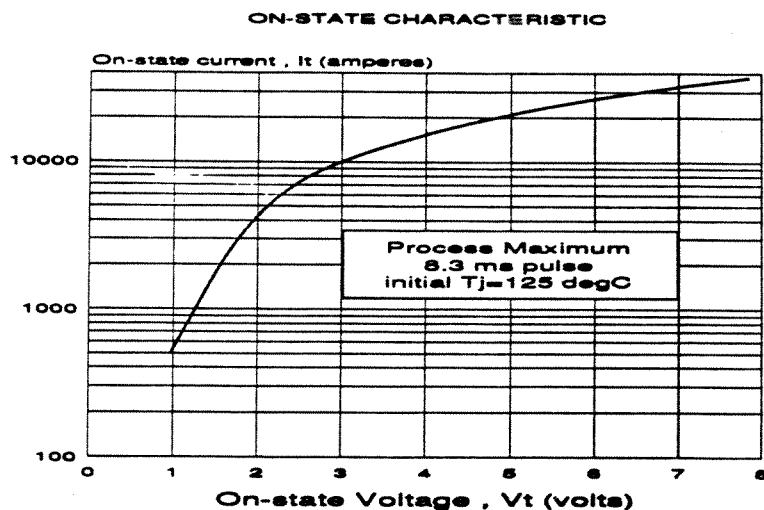
2100 Amperes Avg / Up to 2000 Volts

Electrical Characteristics, $T_J = 25^\circ\text{C}$ unless otherwise specified

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Repetitive Peak Reverse Leakage Current	I_{RRM}	$T_J = 125^\circ\text{C}$, $V_R = V_{RRM}$			100	mA
Repetitive Peak Forward Leakage Current	I_{DRM}	$T_J = 125^\circ\text{C}$, $V_D = V_{DRM}$			100	mA
Peak On-State Voltage	V_{TM}	$T_J = 125^\circ\text{C}$, $I_{TM} = 2000\text{A}$ $t_p = 8.3\text{ms}$			1.55	V
Typical Delay Time	t_d	$V_D = 67\% V_{DRM}$			2	μs
Maximum Turn-Off Time	t_q	$T_J = 125^\circ\text{C}$, $I_T = 500\text{A}$ $V_R = 1.5\text{V}$, $di/dt = 25\text{A}/\mu\text{s}$ $V_D = 50\% V_{DRM}$ $dv/dt = 400\text{V}/\mu\text{s}$ linear to $67\% V_{DRM}$			100	μs
Minimum Critical dv/dt - Linear to V_{DRM}	dv/dt	$T_J = 125^\circ\text{C}$, $V_{DRM} = 80\%$ rated	500			$\text{V}/\mu\text{s}$
Gate Trigger Current	I_{GT}	$V_D = 12\text{V}$			300	mA
Gate Trigger Voltage	V_{GT}	$V_D = 12\text{V}$			3.0	V
Peak Reverse Gate Voltage	V_{GRM}				5.0	V

Thermal Characteristics

Characteristics	Symbol	Min.	Typ.	Max.	Units
Maximum Thermal Resistance, Double Sided Cooling					
Junction to Case	$R_{\theta JC}$			.012	$^\circ\text{C}/\text{W}$
Junction to Sink	$R_{\theta JS}$				$^\circ\text{C}/\text{W}$





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