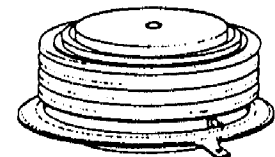


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**HIGH SPEED
 Silicon
 Controlled Rectifier**
 1200 Volts, 650 A RMS

C397/C398

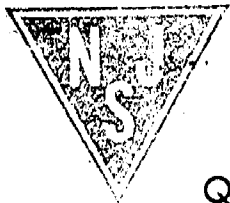


MAXIMUM ALLOWABLE RATINGS

TYPES	REPETITIVE PEAK OFF-STATE VOLTAGE, V_{DRM}^1 $T_J = -40^\circ\text{C to } +125^\circ\text{C}$	REPETITIVE PEAK REVERSE VOLTAGE, V_{RRM}^1 $T_J = -40^\circ\text{C to } +125^\circ\text{C}$	NON-REPETITIVE PEAK REVERSE VOLTAGE, V_{RSM}^1 $T_J = 125^\circ\text{C}$
C397/C398E	500 Volts	500 Volts	600 Volts
C397/C398M	600	600	720
C397/C398S	700	700	840
C397/C398N	800	800	960
C397/C398T	900	900	1080
C397/C398P	1000	1000	1200
C397/C398PA	1100	1100	1300
C397/C398PB	1200	1200	1400

¹ Half sinewave waveform, 10 ms max. pulse width.

Peak One Cycle Surge (Non-Repetitive) On-State Current, I_{TSM}	7500 Amperes
I^2t (for fusing) for times ≥ 1.5 milliseconds	95,000 (RMS Ampere) ² Seconds
I^2t (for fusing) for times ≥ 8.3 milliseconds	230,000 (RMS Ampere) ² Seconds
Critical Rate-of-Rise of On-State Current, Non-Repetitive	800 A/ μ s \uparrow
Critical Rate-of-Rise of On-State Current, Repetitive	500 A/ μ s \uparrow
Average Gate Power Dissipation, $P_{G(AV)}$	2 Watts
Storage Temperature, T_{stg}	$-40^\circ\text{C to } +150^\circ\text{C}$
Operating Temperature, T_J	$-40^\circ\text{C to } +125^\circ\text{C}$
Mounting Force Required	2000 Lb. $\pm 10\%$ 8.9 KN $\pm 10\%$



Quality Semi-Conductors

CHARACTERISTICS

TEST	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITION
Repetitive Peak Reverse and Off-State Current	I_{RRM} and I_{DRM}	--	5	20	mA	$T_J = +25^\circ\text{C}$ $V = V_{DRM} = V_{RRM}$
Repetitive Peak Reverse and Off-State Current	I_{RRM} and I_{DRM}	--	20	45	mA	$T_J = 125^\circ\text{C}$ $V = V_{DRM} = V_{RRM}$
Thermal Resistance	$R_{\theta JC}$	--	.05	.06	$^\circ\text{C}/\text{Watt}$	Junction-to-Case (DC) (Double-Side Cooled)
Critical Rate-of-Rise of Off-State Voltage (Higher values may cause device switching)	dv/dt	200	500	--	$\text{V}/\mu\text{sec}$	$T_J = 125^\circ\text{C}$, Gate Open. $V_{DRM} = \text{Rated}$, Linear or Exponential Rising Waveform. Exponential $dv/dt = \frac{V_{DRM}}{\tau}$ (.632)
Higher minimum dv/dt selections available -- consult factory.						
DC Gate Trigger Current	I_{GT}	--	50	150	mA dc	$T_C = +25^\circ\text{C}$, $V_D = 6 \text{ Vdc}$, $R_L = 3 \text{ Ohms}$
		--	75	300		$T_C = -40^\circ\text{C}$, $V_D = 6 \text{ Vdc}$, $R_L = 3 \text{ Ohms}$
		--	15	125		$T_C = +125^\circ\text{C}$, $V_D = 6 \text{ Vdc}$, $R_L = 3 \text{ Ohms}$
DC Gate Trigger Voltage	V_{GT}	--	3	5	Vdc	$T_C = -40^\circ\text{C}$ to 25°C , $V_D = 6 \text{ Vdc}$, $R_L = 3 \text{ Ohms}$
		--	1.25	3.0		$T_C = 25^\circ\text{C}$ to $+125^\circ\text{C}$, $V_D = 6 \text{ Vdc}$, $R_L = 3 \text{ Ohms}$
		0.15	--	--		$T_C = 125^\circ\text{C}$, V_{DRM} , $R_L = 1000 \text{ Ohms}$
Peak On-State Voltage	V_{TM}	--	2.7	3.0	Volts	$T_C = +25^\circ\text{C}$, $I_{TM} = 3000 \text{ Amps Peak}$. Duty Cycle $\leq .01\%$. Pulse Width = 1 ms.
Turn-On Delay Time	t_d	--	0.5	--	μsec	$T_C = +25^\circ\text{C}$, $I_{TM} = 50 \text{ A dc}$, V_{DRM} . Gate Supply: 20 volt open circuit, 20 ohms, 0.1 μsec max. rise time. ††, †††
Conventional Circuit Commutated Turn-Off Time (with Reverse Voltage)	t_q	--	20	†	μsec	(1) $T_C = +125^\circ\text{C}$ (2) $I_{TM} = 500 \text{ Amps}$. (3) $V_R = 50 \text{ Volts Min}$. (4) V_{DRM} (Reapplied) (5) Rate-of-rise of reapplied off-state voltage = $20 \text{ V}/\mu\text{sec}$ (linear) (6) Commutation $di/dt = 25 \text{ Amps}/\mu\text{sec}$ (7) Repetition rate = 1 pps. (8) Gate bias during turn-off interval = 0 volts, 100 ohms
			35	†		
		30	40	(1) $T_C = +125^\circ\text{C}$ (2) $I_{TM} = 500 \text{ Amps}$. (3) $V_R = 50 \text{ Volts Min}$. (4) V_{DRM} (Reapplied) (5) Rate-of-rise of reapplied off-state voltage = $200 \text{ V}/\mu\text{sec}$ (linear) (6) Commutation $di/dt = 25 \text{ Amps}/\mu\text{sec}$ (7) Repetition rate = 1 pps. (8) Gate bias during turn-off interval = 0 volts, 100 ohms		
		45	60			
Conventional Circuit Commutated Turn-Off Time (with Feedback Diode)	$t_q(\text{diode})$	--	40	†	μsec	(1) $T_C = +125^\circ\text{C}$ (2) $I_{TM} = 500 \text{ Amps}$ (3) $V_R = 1 \text{ Volt}$ (4) V_{DRM} (Reapplied) (5) Rate-of-rise of reapplied off-state voltage = $200 \text{ V}/\mu\text{sec}$ (linear) (6) Commutation $di/dt = 25 \text{ Amps}/\mu\text{sec}$ (7) Repetition rate = 1 pps. (8) Gate bias during turn-off interval = 0 volts, 100 ohms
			60	†		