

HIGH SPEED
Silicon Controlled Rectifier

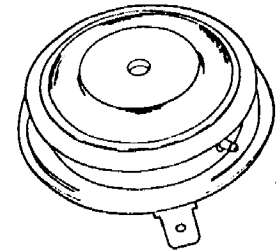
C364/C365

600 Volts

275 A RMS



C364 and C365 Silicon Controlled Rectifiers are designed for power switching at high frequencies. These are all-diffused Press-Pak devices employing the field-proven amplifying gate.



FEATURES:

- Fully characterized for operation in inverter and chopper applications.
- High di/dt ratings.
- High dv/dt capability with selections available.
- Rugged hermetic glazed ceramic package.

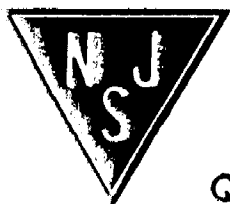
MAXIMUM ALLOWABLE RATINGS

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 $T_J = +125^\circ\text{C}$
C364/C365A	100 Volts	100 Volts	200 Volts
C364/C365B	200	200	300
C364/C365C	300	300	400
C364/C365D	400	400	500
C364/C365E	500	500	600
C364/C365M	600	600	720
C365S	700	700	840
C365N	800	800	960

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

RMS On-State Current, $I_{T(RMS)}$	275 Amperes
Peak One Cycle Surge (Non-Repetitive) On-State Current, I_{TSM} (60 Hz)	1800 Amperes
Peak One Cycle Surge (Non-Repetitive) On-State Current, I_{TSM} (50 Hz)	1700 Amperes
I^2t (for fusing) for times ≥ 1.5 milliseconds	9,500 (RMS Ampere) ² Seconds
I^2t (for fusing) for times ≥ 8.3 milliseconds	13,500 (RMS Ampere) ² Seconds
Critical Rate-of-Rise of On-State Current, Non-Repetitive	800 A/ μ s †
Critical Rate-of-Rise of On-State Current, Repetitive	500 A/ μ s †
Average Gate Power, Dissipation, $P_{G(AV)}$	2 Watts
Storage Temperature, T_{stg}	-40°C to +150°C
Operating Temperature, T_J	-40°C to +125°C
Mounting Force Required	1.5 ± 10%
	1.5 ± 10%

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CHARACTERISTICS

TEST	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITION
Repetitive Peak Reverse and Off-State Current	I_{RRM} and I_{DRM}	--	5	12	mA	$T_J = +25^\circ\text{C}$ $V = V_{DRM} = V_{RRM}$
Repetitive Peak Reverse and Off-State Current	I_{RRM} and I_{DRM}	--	12	17	mA	$T_J = 125^\circ\text{C}$ $V = V_{DRM} = V_{RRM}$
Thermal Resistance	$R_{\theta JC}$	--	.12	.135	$^\circ\text{C/Watt}$	Junction-to-Case (Double-Side Cooled)
		--	.15	.26		Junction-to-Case (Single-Side Cooled)
Critical Rate-of-Rise of Off-State Voltage (Higher values may cause device switching)	dv/dt	200	500		$V/\mu\text{sec}$	$T_J = +125^\circ\text{C}$, Gate Open, $V_{DRM} = \text{Rated}$ Linear or Exponential Rising Waveform. Exponential $dv/dt = V_{DRM} (.632)/\tau$
Higher minimum dv/dt selections available - consult factory.						
Holding Current	I_H	--	40	1000	mAde	$T_C = +25^\circ\text{C}$, Anode Supply = 24 Vdc, Initial On-State Current = 2 Amps.
DC Gate Trigger Current	I_{GT}		70	250	mAde	$T_C = +25^\circ\text{C}$, $V_D = 6 \text{ Vdc}$, $R_L = 3 \text{ Ohms}$
		--	100	400		$T_C = -40^\circ\text{C}$, $V_D = 6 \text{ Vdc}$, $R_L = 3 \text{ Ohms}$
			25	175		$T_C = +125^\circ\text{C}$, $V_D = 6 \text{ Vdc}$, $R_L = 3 \text{ Ohms}$
DC Gate Trigger Voltage	V_{GT}	--	3	5	Vdc	$T_C = -40^\circ\text{C}$ to 0°C , $V_D = 6 \text{ Vdc}$, $R_L = 3 \text{ Ohms}$
		--	1.25	3.0		$T_C = 0^\circ\text{C}$ 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}	--	1.9	2.6	Volts	$T_C = +25^\circ\text{C}$, $I_{TM} = 500 \text{ Amps}$, Peak Duty Cycle $\leq .01\%$
Turn-On Delay Time	t_d	--	0.5		μsec	$T_C = +25^\circ\text{C}$, $I_T = 50 \text{ Ade}$, V_{DRM} , Gate Supply: 20 Volt Open Circuit, 20 Ohm, 0.1 μsec max. rise time. ††, †††
Conventional Circuit Commutated Turn-Off Time (with Reverse Voltage) Faster Maximum Turn-Off Times Available, Consult Factory	t_q				μsec	(1) $T_C = +125^\circ\text{C}$ (2) $I_{TM} = 150 \text{ Amps}$. (3) $V_R = 50 \text{ Volts Min}$. (4) V_{DRM} (Reapplied) (5) Rate-of-Rise of Reapplied Off-State Voltage = 200 $V/\mu\text{sec}$ (linear) (6) Commutation $di/dt = 5 \text{ Amps}/\mu\text{sec}$. (7) Repetition Rate = 1 pps. (8) Gate Bias During Turn-Off Interval = 0 Volts, 100 Ohms
	C364		8	10		
	C365		15	20		
Conventional Circuit Commutated Turn-Off Time (with Feedback Diode)	$t_q(\text{diode})$				μsec	(1) $T_C = +125^\circ\text{C}$ (2) $I_{TM} = 150 \text{ Amps}$. (3) $V_R = 1 \text{ Volt}$ (4) V_{DRM} (Reapplied) (5) Rate-of-Rise of Reapplied Forward Blocking Voltage = 200 $V/\mu\text{sec}$ (linear) (6) Commutation $di/dt = 5 \text{ Amps}/\mu\text{sec}$ (7) Repetition Rate = 1 pps. (8) Gate Bias During Turn-Off Interval = 0 Volts, 100 Ohms.
	C364	--	15	†		
	C365	--	20	†		

† Consult factory for specified maximum Turn-Off Time.

†† Delay time may increase significantly as the gate drive approaches the I_{GT} of the Device Under Test.

††† Current risetime as measured with a current probe, or voltage risetime across a non-inductive resistor.