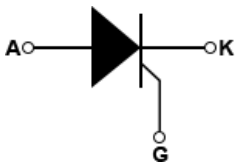
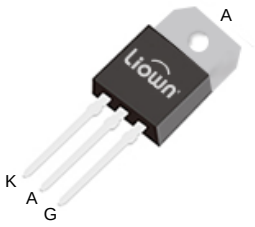
$I_{T(AV)}$	8 A
V_{DRM}/V_{RRM}	800 V
I_{GT}	15 mA
T_J	-40 °C to +125 °C

LCR808
Standard 8A SCRs

Features

- On-state RMS current, $I_{T(RMS)}$ 12A
- Repetitive peak off-state voltage, V_{DRM} and V_{RRM} 800V
- Triggering gate current, I_{GT} : 15 mA





Description

The standard 12A SCR series is suitable to fit all modes of control, found in applications such as overvoltage crowbar protection, motor control circuits in power tools and kitchen aids, inrush current limiting circuits, capacitive discharge ignition and voltage regulation circuits.

Available in through-hole or surface-mount packages, they provide an optimized performance in a limited space.

Absolute ratings (limiting values)

Symbol	Parameter			Value	Unit
IT(RMS)	On-state RMS current (180° conduction angle)	TO-220AB ins. D²PAK DPAK	T_c = 110 °C	12	A
IT(AV)	Average on-state current (180° conduction angle)	IPAK		8	
ITSM	Non repetitive surge peak on-state current	t_p = 8.3 ms	T_j = 25 °C	120	A
		t_p = 10 ms		110	
I2t	I^2t value for fusing		T_j = 25 °C	60	A^2S
dI/dt	Critical rate of rise of on- state current I_G = 2 x I_{GT}, t_r ≤ 100 ns	F = 60 Hz	T_j = 125 °C	50	A/µs
IGM	Peak gate current	t_p = 20 µs	T_j = 125 °C	4	A
PG(AV)	Average gate power dissipation		T_j = 125 °C	1	W
Tstg Tj	Storage junction temperature range Operating junction temperature range			- 40 to + 150 - 40 to + 125	°C
VRGM	Maximum peak reverse gate voltage			5	V

Standard electrical characteristics (T_j = 25 °C, unless otherwise specified)

Symbol	Test conditions							Unit
I_{GT}	V_D = 12 V, R_L = 33 Ω		Min.	2				mA
			Max.	15				
V_{GT}			Max.	1.3				V
V_{GD}	V_D = $V_{DRM,}$ R_L = 3.3 kΩ	T_j = 125 °C	Min.	0.2				V
I_H	I_T = 500 mA, gate open		Max.	40	30	15	30	mA
I_L	I_G = 1.2 I_{GT}		Max.	80	60	30	60	mA
dV/dt	V_D = 67% $V_{DRM,}$ gate open	T_j =125 °C	Min.	200		40	200	V/µs
V_{TM}	I_{TM} = 24 A t_p = 380 µs	T_j = 25 °C	Max.	1.35				V
V_{to}	Threshold voltage	T_j = 125 °C	Max.	0.85				V
R_d	Dynamic resistance	T_j = 125 °C	Max.	30				mΩ
I_{DRM} I_{RRM}	V = V = V = V	T_j = 25 °C	Max.	5				µA
		T_j = 125 °C		2				mA

Symbol	Parameter			Value	Unit
$R_{th(j-c)}$	Junction to case (DC)	D^2PAK, DPAK, IPAK, TO-220AB		1.3	°C/W
$R_{th(j-a)}$	Junction to ambient (DC)	$S^{(1)}$ = 0.5 cm^2	DPAK	70	°C/W
		$S^{(1)}$ = 1.0 cm^2	D^2PAK	45	
			IPAK	100	
			TO-220AB	60	

Figure 1. Maximum average power dissipation versus average on-state current

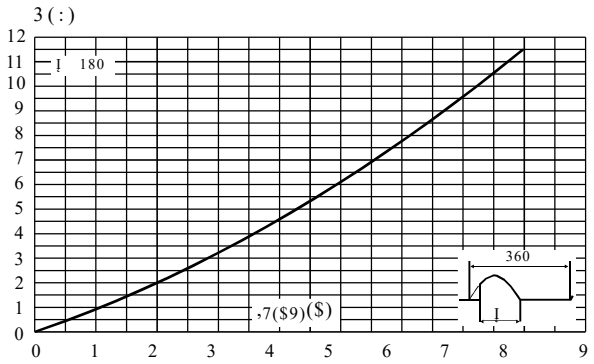


Figure 2. Average and DC on-state current versus case temperature

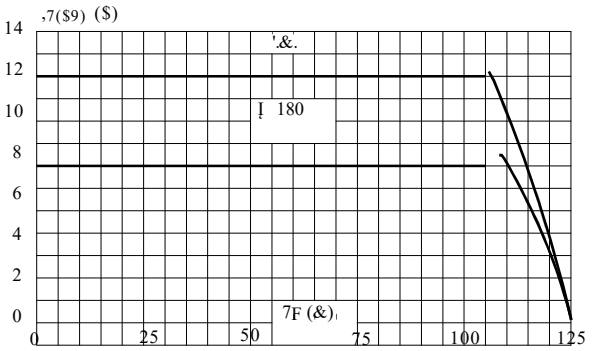


Figure 3. Average and DC on-state current versus ambient temperature (DPAK, D²PAK)

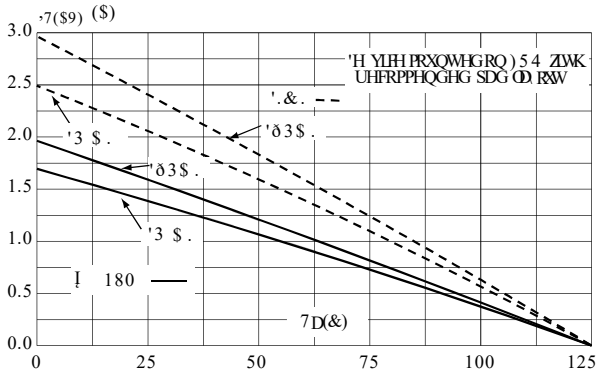


Figure 4. Relative variation of thermal impedance junction to case versus pulse duration

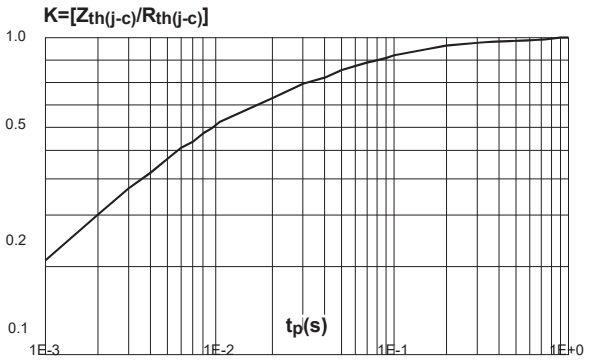


Figure 5. Relative variation of thermal impedance junction to ambient versus pulse duration

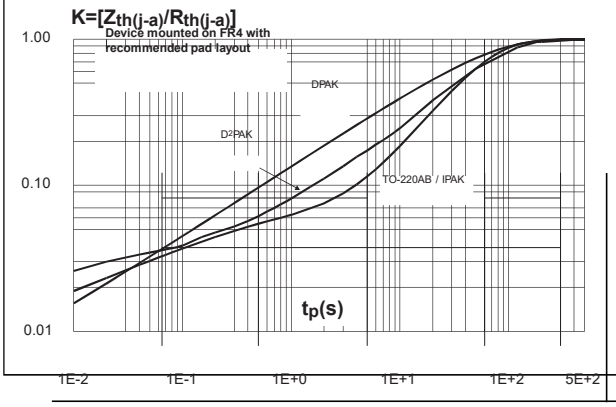


Figure 6. Relative variation of gate trigger, latching and holding current versus junction temperature

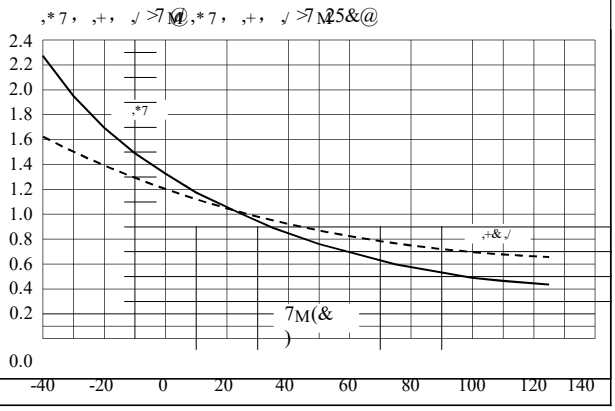


Figure 7. Surge peak on-state current versus number of cycles

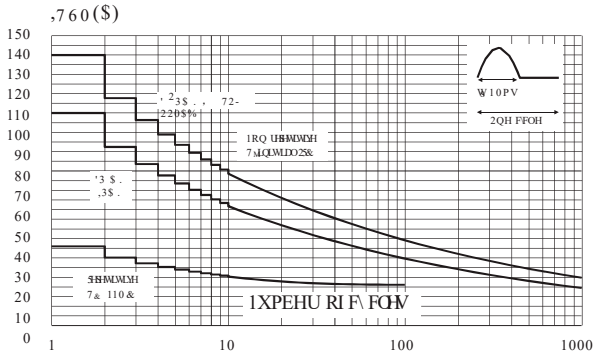


Figure 8. Non repetitive surge peak on-state current for a sinusoidal pulse with width tp<10 ms

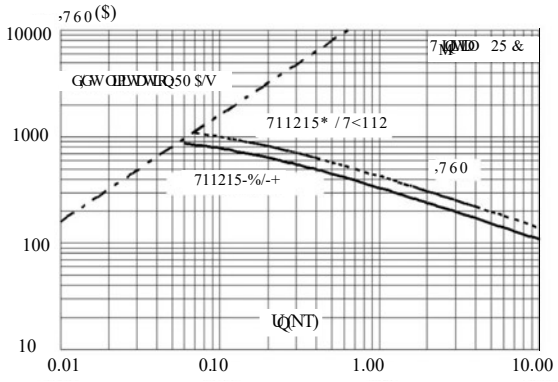


Figure 9. On-state characteristics (maximum values)

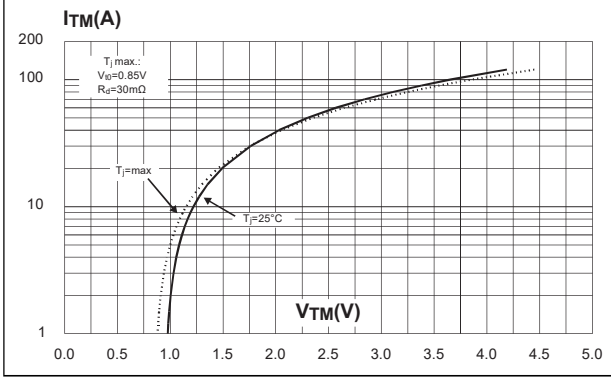


Figure 10. Thermal resistance junction to ambient versus copper surface under tab (DPAK and D²PAK)