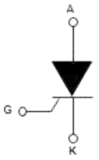
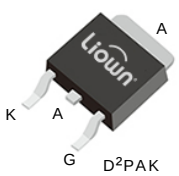
$I_{T(AV)}$	16 A
V_{DRM}/V_{RRM}	800 V
I_{GT}	15 mA
T_J	-40°C to +125°C

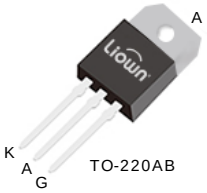
LCR816
Standard 16A SCRs

Features

- On-state rms current, $I_{T(RMS)}$ 24A
- Repetitive peak off-state voltage, V_{DRM}/V_{RRM} 800V
- Triggering gate current, I_{GT} 15 mA
- Insulated package TO-220AB ins
  - Insulating voltage 2500 V rms







Description

These standard 16A SCRs are suitable for general purpose applications.

Using clip assembly technology, they provide a superior performance in surge current capabilities.

Absolute ratings (limiting values)

Symbol	Parameter			Value	Unit
$I_{T(RMS)}$	On-state rms current (180 °Conduction angle)	TO-220AB, D2PAK	T_c = 100 °C	24	A
		TO-220AB ins	T_c = 83 °C		
$I_{T(AV)}$	Average on-state current (180 °Conduction angle)		T_c = 100 °C	16	A
I_{TSM}	Non repetitive surge peak on-state current	t_p = 8.3 ms	T_j = 25 °C	240	A
		t_p = 10 ms		300	
I^2t	I^2t Value for fusing	t_p = 10 ms	T_j = 25 °C	450	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
I_{GM}	Peak gate current	t_p = 20 µs	T_j = 125 °C	4	A
$P_{G(AV)}$	Average gate power dissipation		T_j = 125 °C	1	W
T_{stg} T_j	Storage junction temperature range Operating junction temperature range			- 40 to + 150 - 40 to + 125	°C
V_{RGM}	Maximum peak reverse gate voltage			5	V

Electrical Characteristics (T_j = 25 °C, unless otherwise specified)

Symbol	Test conditions			Value	Unit
I_{GT}	V_D = 12 V R_L = 33 Ω		MIN.	4	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.	50	mA
I_L	$I_G = 1.2 \times I_{GT}$		MAX.	90	mA
dV/dt	V_D = 67% V_{DRM} Gate open	T_j = 125 °C	MIN.	1500	V/µs
V_{TM}	I_{TM} = 50 A tp = 380 µs	T_j = 25 °C	MAX.	1.35	V
V_{t0}	Threshold voltage	T_j = 125 °C	MAX.	0.77	V
R_d	Dynamic resistance	T_j = 125 °C	MAX.	14	mΩ
I_{DRM} I_{RRM}	$V_{DRM} = V_{RRM}$	T_j = 25 °C	MAX.	5	µA
		T_j = 125 °C		4	mA

Thermal resistances

Symbol	Parameter			Value	Unit
$R_{th(j-c)}$	Junction to case (DC)		D^2PAK, TO-220AB	1.0	°C/W
			TO-220AB ins	2.0	
$R_{th(j-a)}$	Junction to ambient (DC)	$S^{(1)}$ = 1 cm^2	D^2PAK	45	°C/W
			TO-220AB, TO-220AB ins	60	

(1) S = Copper surface under tab.

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

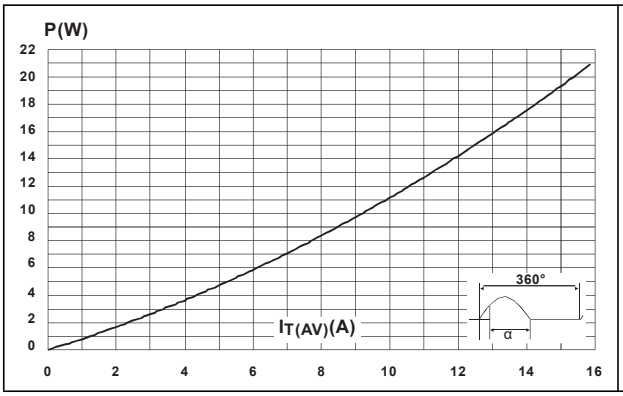


Figure 2. Average and DC on-state current versus case temperature

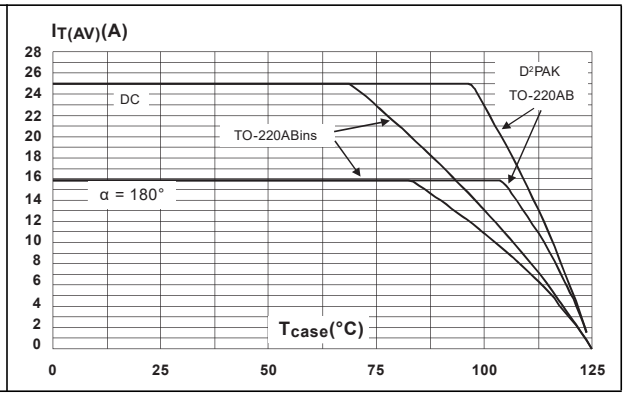


Figure 3. Average and DC on-state current versus ambient temperature

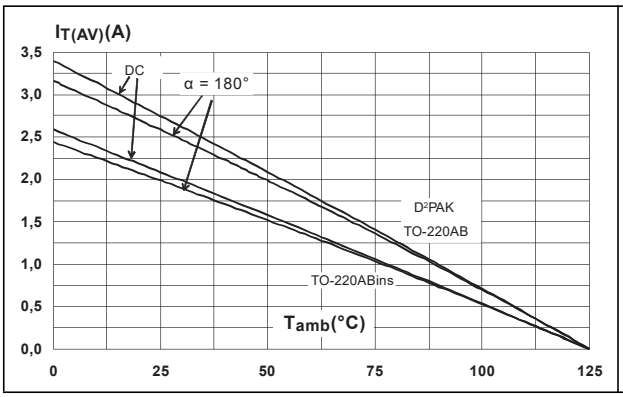


Figure 4. Relative variation of thermal impedance versus pulse duration (D^2PAK, and TO-220AB)

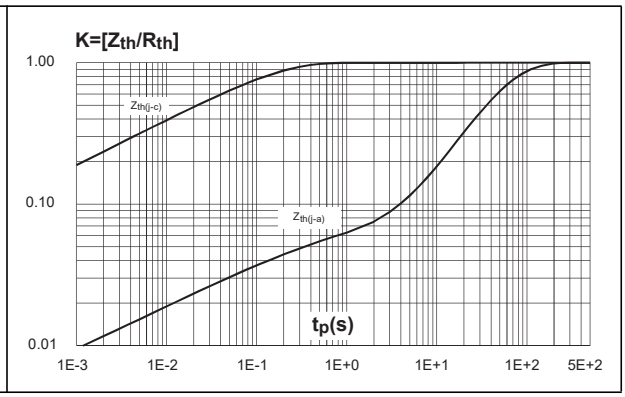


Figure 5. Relative variation of thermal impedance versus pulse duration (TO-220AB ins)

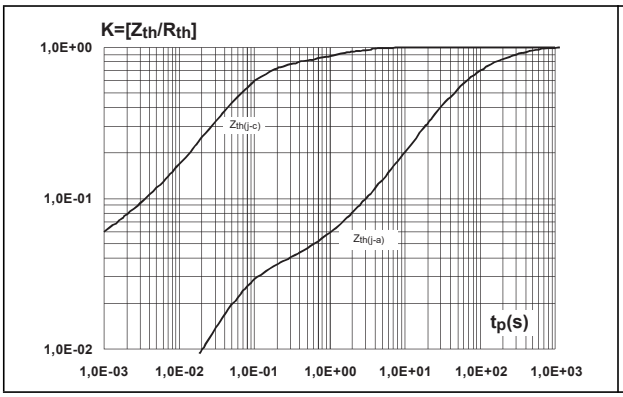


Figure 6. Relative variation of gate trigger, holding, and latching currents versus junction temperature

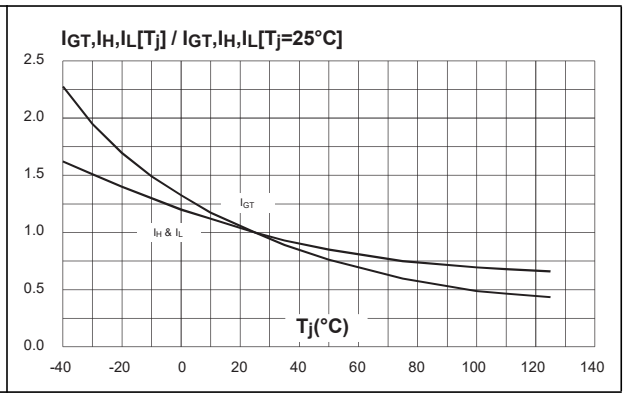


Figure 7. Surge peak on-state current versus number of cycles

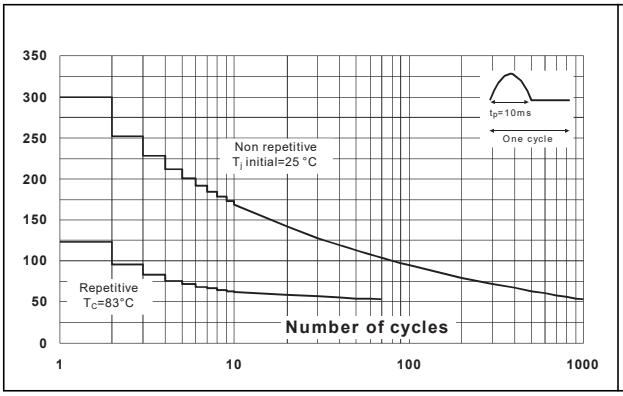


Figure 8. Non-repetitive surge peak on-state current, and corresponding values of I^2t

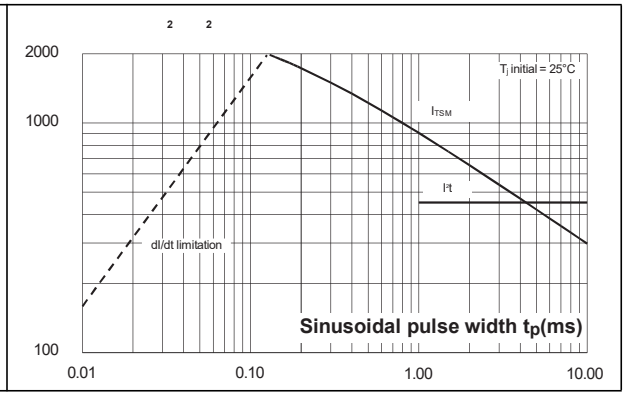


Figure 9. On-state characteristics (maximum values)

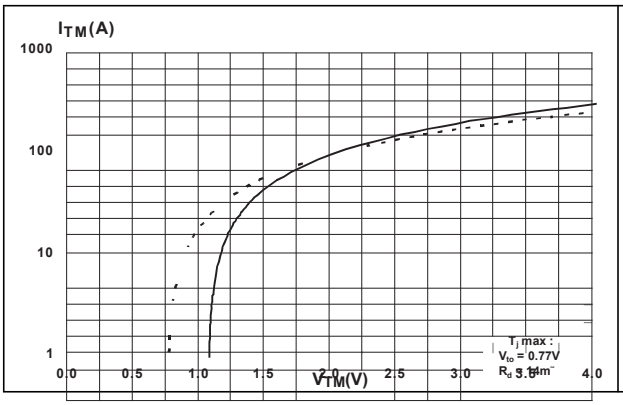


Figure 10. Thermal resistance junction to ambient versus copper surface under tab (D^2PAK)