

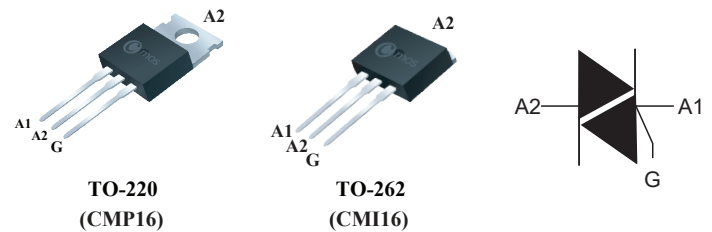
General Description

The CMP16/CMI16 triac family are high performance glass passivated PNPN devices. These parts are suitable for general purpose applications where gate high sensitivity is required.

Applications

- General purpose low power motor control
- Home appliances

TO-220/TO-262 Pin Configuration



ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Rating	Units
$I_{T(RMS)}$	RMS on-state current (360° conduction angle) ($T_c=90^\circ\text{C}$)		16	A
I_{TSM}	Non repetitive surge peak on-state current (T_j initial = 25°C)	$t_p=8.3\text{ms}$	170	A
		$t_p=10\text{ms}$	160	
I_{2t}	I_{2t} value	$t_p=10\text{ms}$	128	A2s
dI/dt	Critical rate of rise of on-state current Gate supply: $I_g=50\text{mA}$ $dI_g/dt=0.1\text{A}/\mu\text{s}$	Repetitive $F=50\text{Hz}$	10	$\text{A}/\mu\text{s}$
		Non Repetitive	50	
T_{stg}	Storage and operating junction temperature range		- 40 to + 150	$^\circ\text{C}$
T_j			- 40 to + 125	$^\circ\text{C}$
T_l	Maximum lead temperature for soldering during 10 s at 4.5 mm from case		260	$^\circ\text{C}$

Symbol	Parameter	CMP16.../CMI16...				Unit
		400	600	700	800	
V_{DRM} V_{RRM}	Repetitive peak off-state voltage $T_j = 110^\circ\text{C}$	400	600	700	800	V

Thermal resistances

Symbol	Parameter	Value	Unit
Rth (j-a)	Junction to ambient	60	°C/W
Rth (j-c) AC	Junction to case for 360° conduction angle (F= 50 Hz)	1.2	°C/W

GATE CHARACTERISTICS (maximum values)

$P_{G(AV)} = 1W$ $P_{GM} = 10W$ ($t_p = 20 \mu s$) $I_{GM} = 4A$ ($t_p = 20 \mu s$) $V_{GM} = 16V$ ($t_p = 20 \mu s$).

Electrical characteristics

Symbol	Test Conditions	Quadrant		Value	Unit
I _{GT}	V _D =12V (DC) R _L =100Ω, T _j =25°C	I	MAX	30	mA
		II	MAX	50	
		III	MAX	50	
		IV	MAX	70	
V _{GT}	V _D =12V (DC) R _L =33Ω, T _j =25°C	I-II-III-IV	MAX	1.5	V
V _{GD}	V _D =V _{DRM} R _L =3.3kΩ, T _j =125°C	I-II-III-IV	MIN	0.2	V
t _{gt}	V _D =V _{DRM} I _G =500mA dI _G /dt = 3A/μs, T _j =25°C	I-II-III-IV	TYP	2	μs
I _L	I _G =1.2 I _{GT} , T _j =25°C	I	MAX	50	mA
		II	MAX	100	
		III	MAX	50	
		IV	MAX	50	
I _H *	I _T = 100mA gate open, T _j =25°C		MAX	50	mA
V _{TM} *	I _{TM} = 22.5A, t _p = 380μs, T _j =25°C		MAX	1.7	V
I _{DRM}	V _{DRM} Rated, T _j =25°C		MAX	0.02	mA
I _{RRM}	V _{RRM} Rated, T _j =125°C		MAX	2	
dV/dt *	Linear slope up to V _D =67%V _{DRM} gate open, T _j =125°C		MIN	250	V/μs
(dV/dt) _c *	(dI/dt) _c =7A/ms, T _j =125°C		MIN	10	V/μs

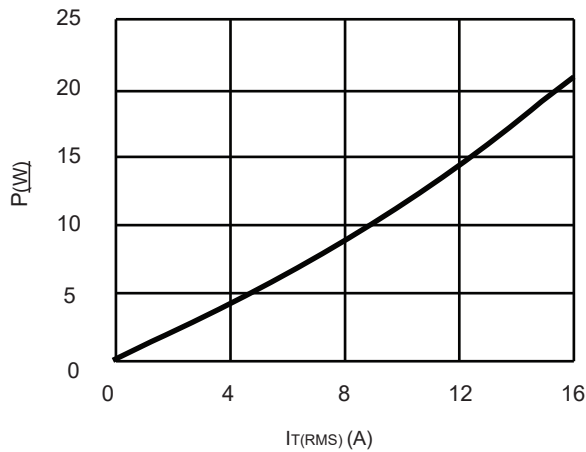
* For either polarity of electrode A2 voltage with reference to electrode A1.

This product has been designed and qualified for the consumer market.

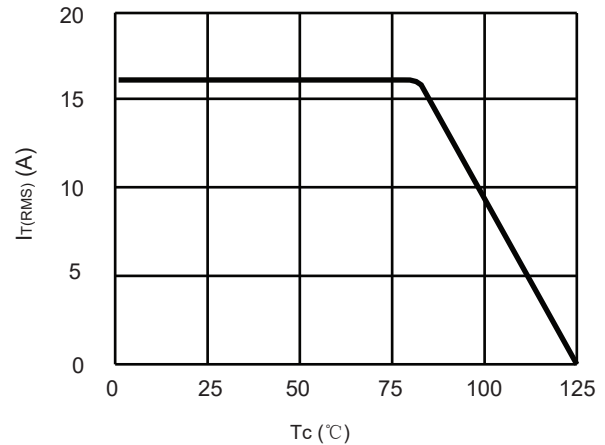
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Cmos reserves the right to improve product design, functions and reliability without notice.

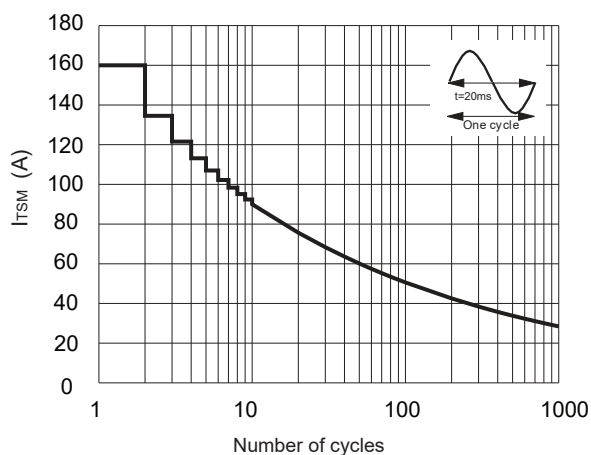
Typical Characteristics



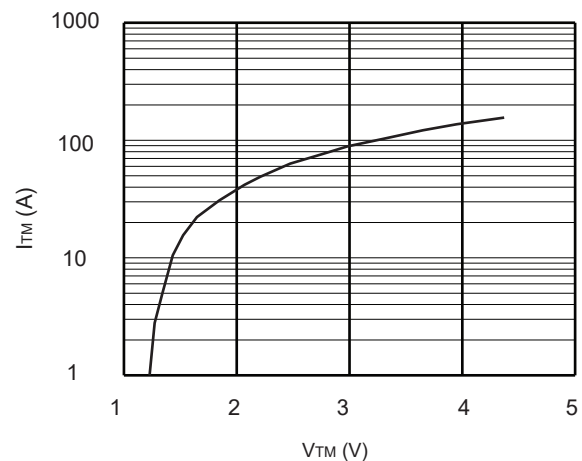
Maximum power dissipation versus RMS on-state current



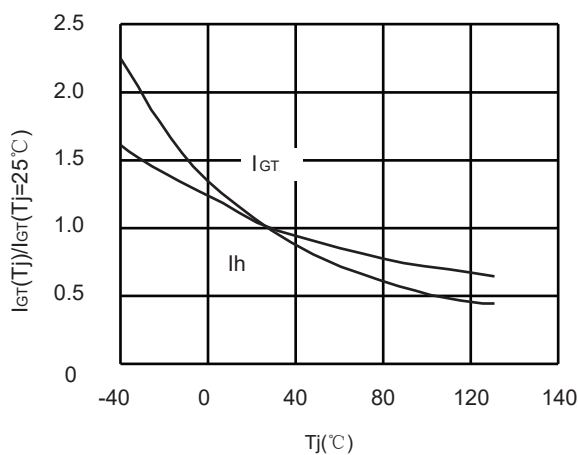
RMS on-state current versus case temperature



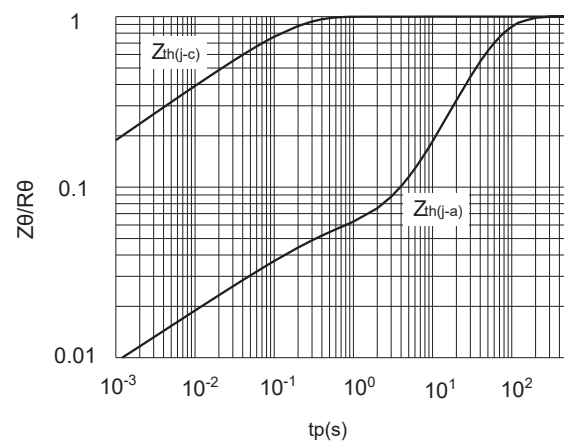
Surge peak on-state current versus number of cycles



On-state characteristics (maximum values).



Relative variation of gate trigger current and holding current versus junction temperature.



Relative variation of thermal impedance versus pulse duration.