

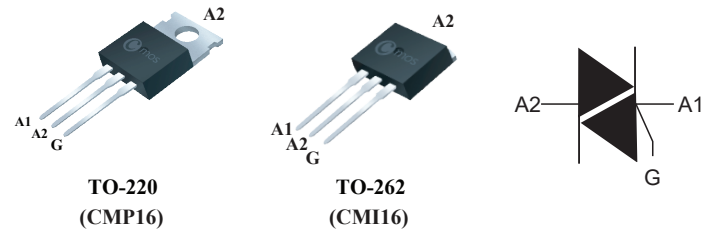
General Description

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) (Tc=90°C)	16	A
I_{TSM}	Non repetitive surge peak on-state current (Tj initial = 25°C)	tp=8.3ms	170
		tp=10ms	160
I_{2t}	I2t value	tp=10ms	128
dI/dt	Critical rate of rise of on-state current Gate supply: Ig =50mA diG/dt=0.1A/μs	Repetitive F = 50 Hz	10
		Non Repetitive	50
Tstg	Storage and operating junction temperature range	- 40 to + 150	°C
Tj		- 40 to + 125	°C
Tl	Maximum lead temperature for soldering during 10 s at 4.5 mm from case	260	°C

Symbol	Parameter	BTA16.../CMI16...				Unit
		400	600	700	800	
V_{DRM} V_{RRM}	Repetitive peak off-state voltage Tj = 110°C	400	600	700	800	V

Thermal resistances

Symbol	Parameter	Value	Unit
Rth (j-a)	Junction to ambient	60	°C/W
Rth (j-c) DC	Junction to case for DC	2.9	°C/W
Rth (j-c) AC	Junction to case for 360° conduction angle (F= 50 Hz)	2.2	°C/W

GATE CHARACTERISTICS (maximum values)

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

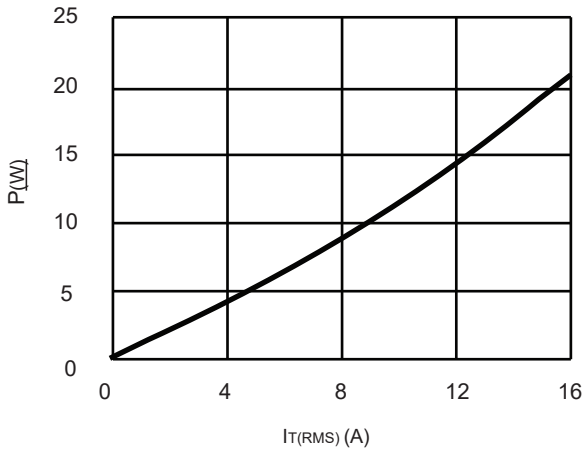
Electrical characteristics

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 _R 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

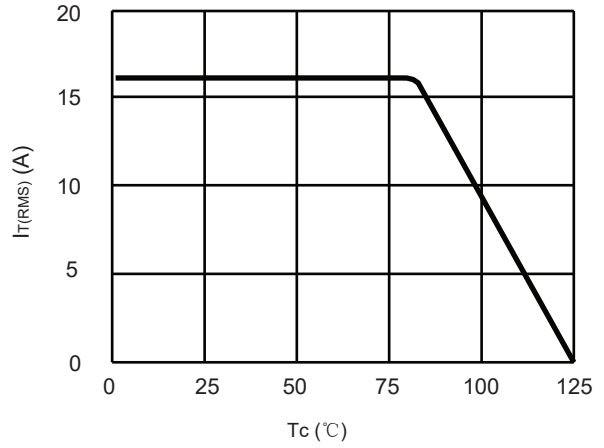
* For either polarity of electrode A2 voltage with reference to electrode A1.

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Cmos assumes no liability for customers' product design or applications.
Cmos reserves the right to improve product design, functions and reliability without notice.

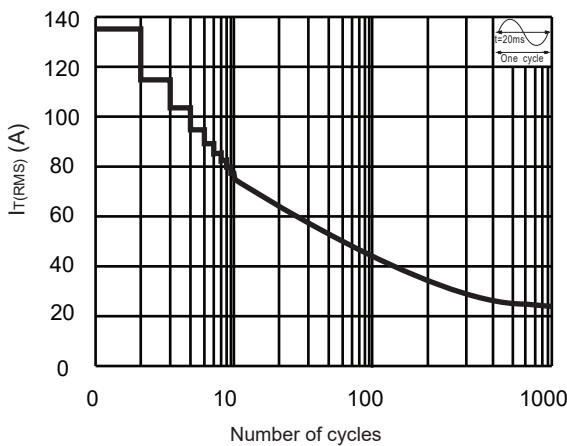
Typical Characteristics



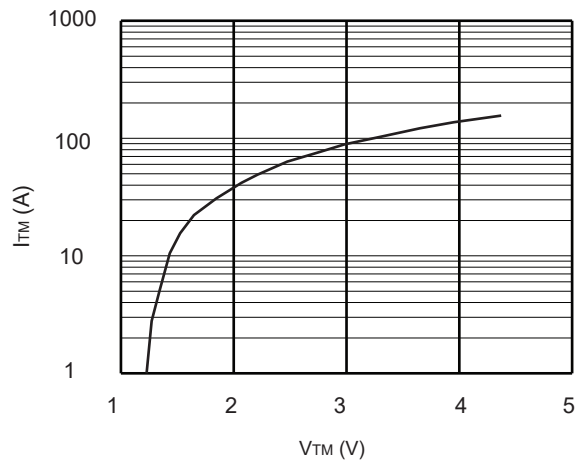
Maximum power dissipation versus RMS on-state current



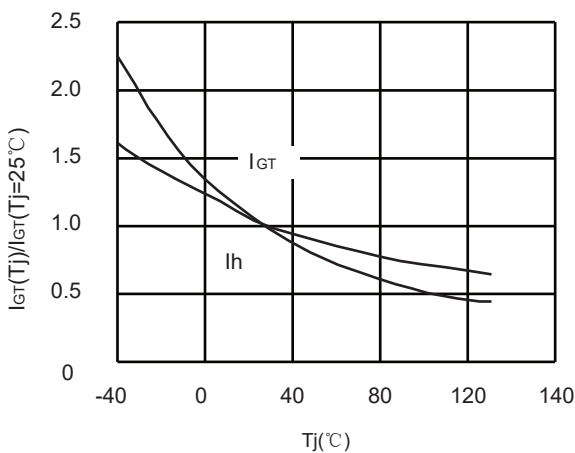
RMS on-state current versus case temperature



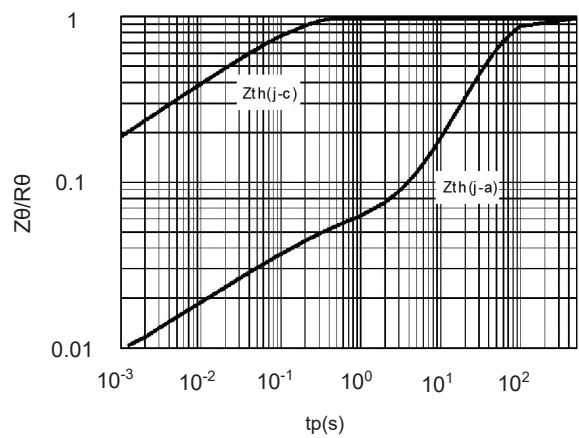
Non Repetitive surge peak on-state current versus number of cycles.



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.