

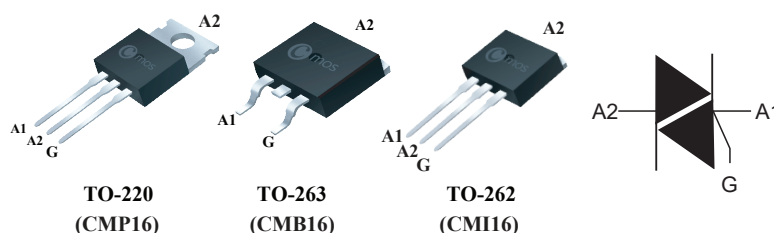
General Description

The CMP16/CMB16/CMI16 triac family are high performance glass passivated PNP 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-220/263/262 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: $I_g=50\text{mA}$ $diG/dt=0.1\text{A}/\mu\text{s}$	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.../CMB16.../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) $R_L=100\Omega$, $T_j=25^\circ C$	I	MAX	30	mA
		II	MAX	50	
		III	MAX	50	
		IV	MAX	70	
V_{GT}	$V_D=12V$ (DC) $R_L=33\Omega$, $T_j=25^\circ C$	I-II-III-IV	MAX	1.5	V
V_{GD}	$V_D=V_{DRM}$ $R_L=3.3k\Omega$, $T_j=125^\circ C$	I-II-III-IV	MIN	0.2	V
tgt	$V_D=V_{DRM}$ $I_G=500mA$ $dI_G/dt = 3A/\mu s$, $T_j=25^\circ C$	I-II-III-IV	TYP	2	μs
I_L	$I_G=1.2 I_{GT}$, $T_j=25^\circ C$	I	MAX	50	mA
		II	MAX	100	
		III	MAX	50	
		IV	MAX	50	
I_H^*	$I_T= 100mA$ gate open, $T_j=25^\circ C$		MAX	50	mA
V_{TM}^*	$I_{TM}= 22.5A$, $t_p= 380\mu s$, $T_j=25^\circ C$		MAX	1.7	V
I_{DRM}	V_{DRM} Rated, $T_j=25^\circ C$		MAX	0.02	mA
I_{RRM}	V_{RRM} Rated, $T_j=125^\circ C$		MAX	2	
dV/dt *	Linear slope up to $V_D=67\%V_{DRM}$ gate open, $T_j=125^\circ C$		MIN	250	V/ μs
(dV/dt)c*	(dI/dt)c = 7A/ms, $T_j=125^\circ C$		MIN	10	V/ μs

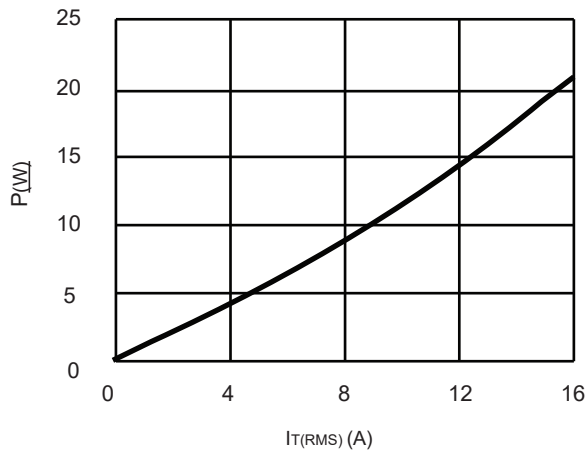
* For either polarity of electrode A2 voltage with reference to electrode A1.

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

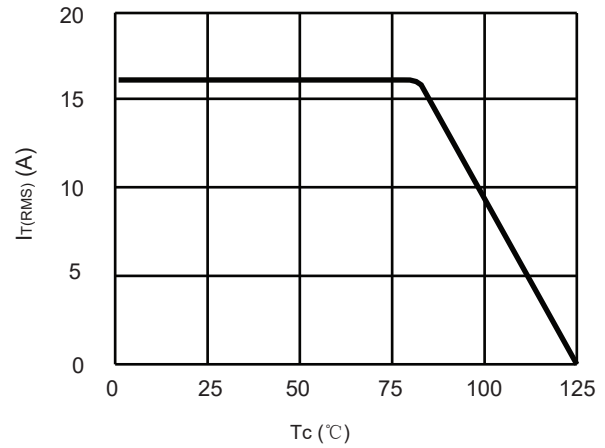
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Cmos reserves the right to improve product design, functions and reliability without notice.

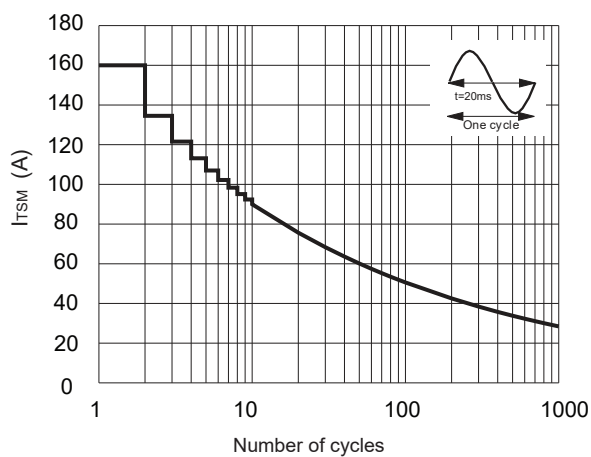
Typical Characteristics



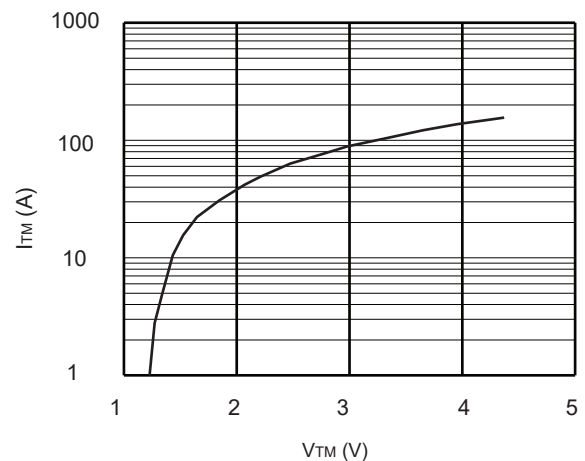
Maximum power dissipation versus RMS on-state current



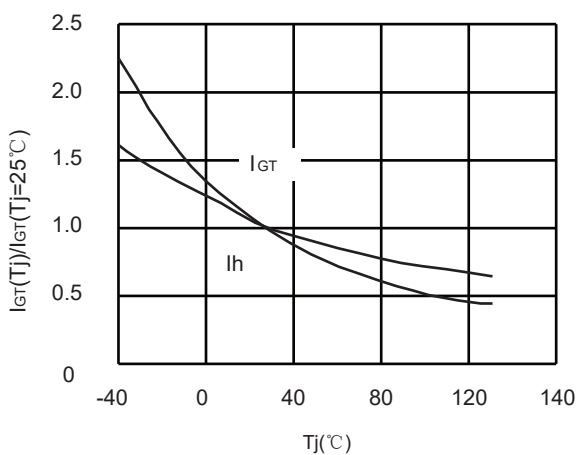
RMS on-state current versus case temperature



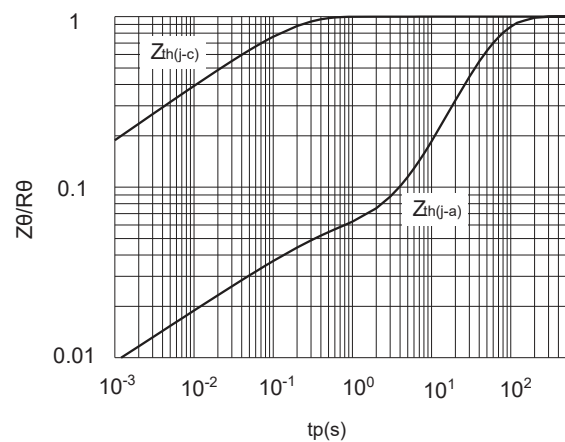
Surge peak on-state current versus number of cycles



On-state characteristics (maximum values).



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

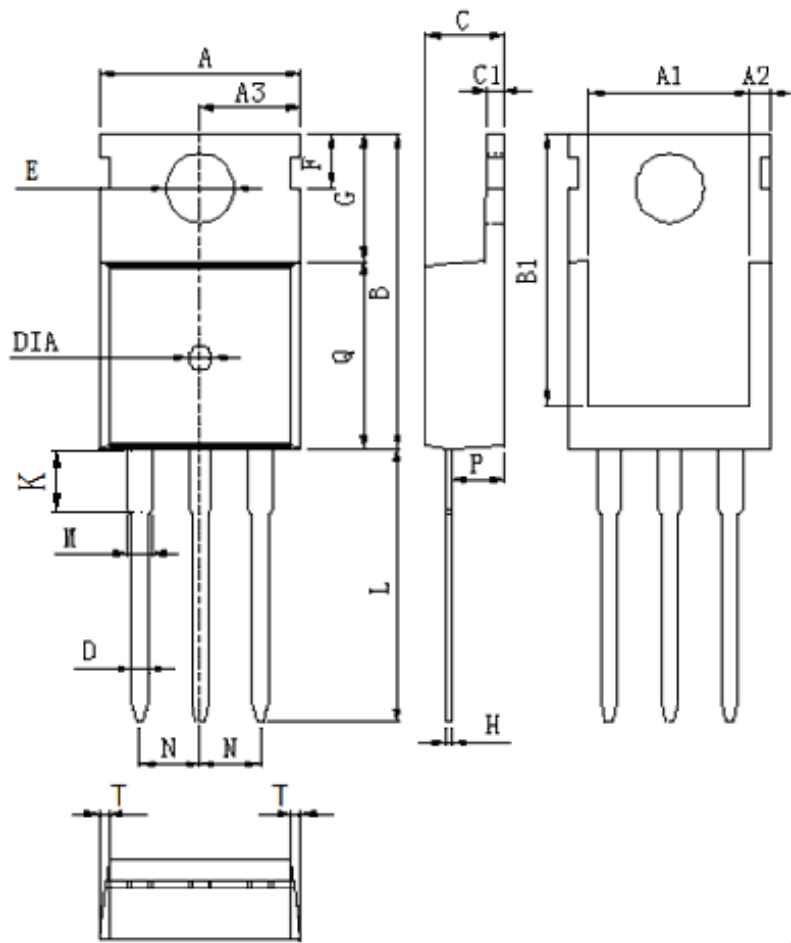


Relative variation of thermal impedance versus pulse duration.

Package Dimension

TO-220

Unit :mm

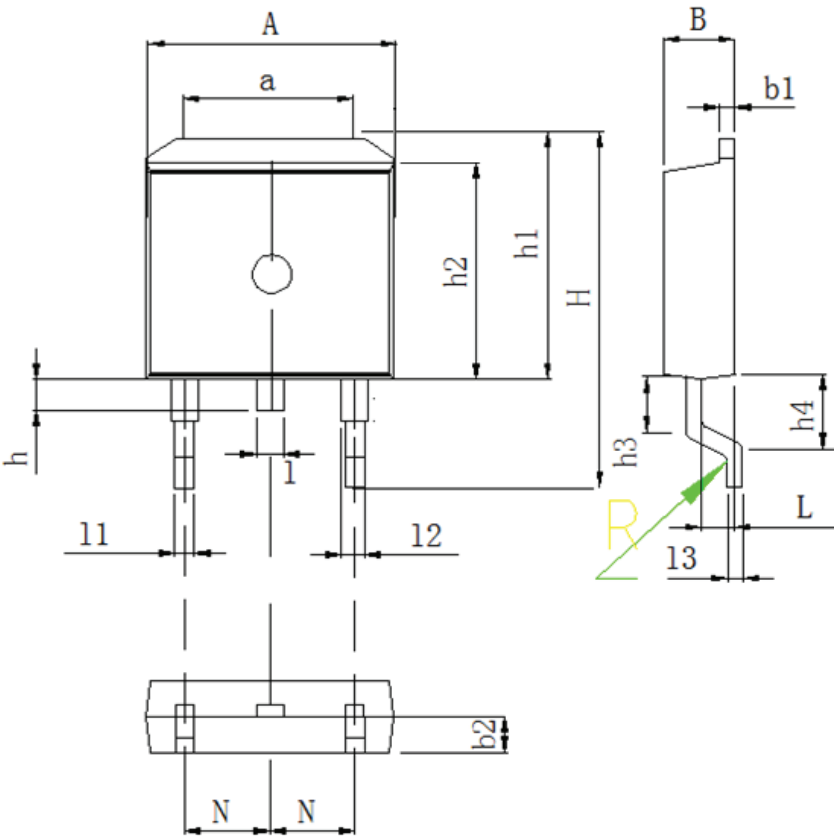


DIM	MILLIMETERS
A	10.0±0.3
A1	8.64±0.2
A2	1.15±0.1
A3	5.0±0.2
B	15.8±0.4
B1	13.2±0.3
C	4.56±0.1
C1	1.3±0.2
D	0.8±0.2
E	3.6±0.2
F	2.95±0.3
G	6.5±0.3
H	0.5±0.1
K	3.1±0.2
L	13.2±0.4
M	1.25±0.1
N	2.54±0.1
P	2.4±0.3
Q	9.0±0.3
T	W:0.35
DIA	⊙1.5 (deep 0.2)

Package Dimension

TO-263

Unit :mm

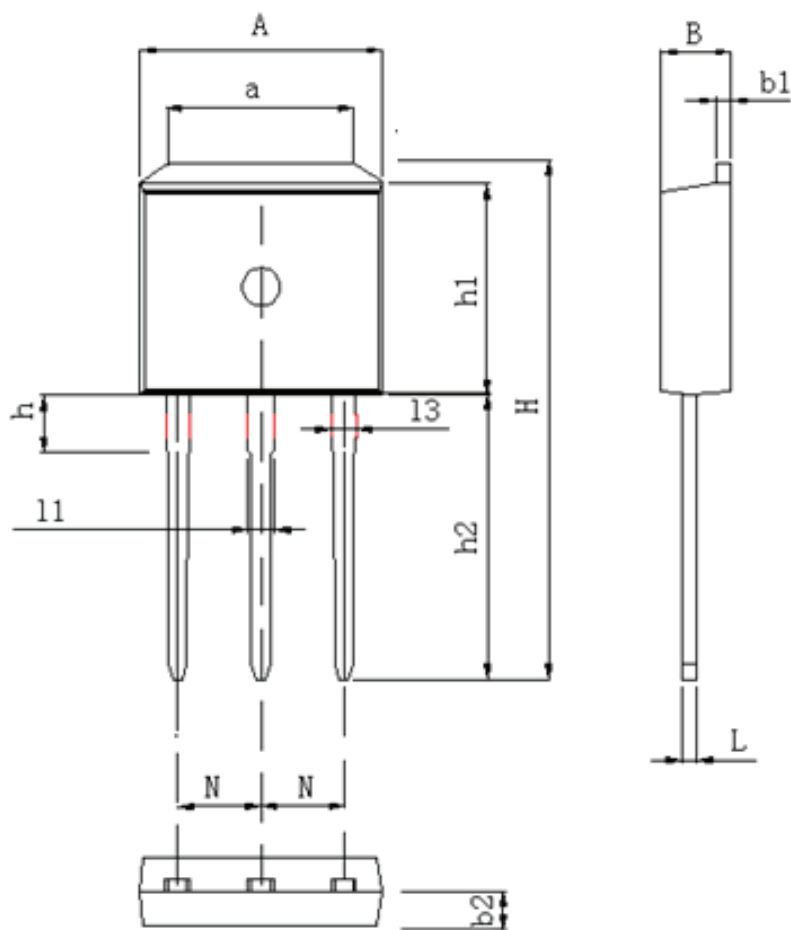


DIM	MILLIMETERS
A	9.8 ± 0.2
a	7.4 ± 0.4
B	4.5 ± 0.2
b1	1.3 ± 0.05
b2	2.4 ± 0.2
H	15.5 ± 0.3
h	1.54 ± 0.2
h1	10.5 ± 0.2
h2	9.2 ± 0.1
h3	1.54 ± 0.2
h4	2.7 ± 0.2
L	2.4 ± 0.2
1	1.3 ± 0.1
11	0.8 ± 0.1
12	1.3 ± 0.1
13	0.5 ± 0.1
N	2.54 ± 0.1
R	$0.5R \pm 0.05$

Package Dimension

TO-262

Unit :mm



DIM	MILLIMETERS
A	9.98 ± 0.2
a	7.4 ± 0.4
B	4.5 ± 0.2
b1	1.3 ± 0.05
b2	2.4 ± 0.2
H	23.9 ± 0.3
h	3.1 ± 0.2
h1	9.16 ± 0.2
h2	13.2 ± 0.2
L	0.5 ± 0.1
l1	1.3 ± 0.1
l2	0.8 ± 0.1
N	2.45 ± 0.1