




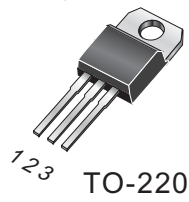
T16D6

Three quadrant triacs

HAOPIN MICROELECTRONICS CO.,LTD.

Description

Passivated high commutation triacs in a plastic envelope intended for use in circuits where high static and dynamic dV/dt and high dI/dt can occur. These devices will commute the full rated ms current at the maximum rated junction temperature without the aid of a snubber.

<p>Symbol</p> 		<p>Simplified outline</p>  <p>TO-220</p>	
Pin	Description		
1	Main terminal 1 (T1)		
2	Main terminal 2 (T2)		
3	gate (G)		
TAB	Main terminal 2 (T2)		

Applications:

- ◆ Motor control
- ◆ Industrial and domestic lighting
- ◆ Heating
- ◆ Static switching

Features

- ◆ Blocking voltage to 600 V
- ◆ On-state RMS current to 16A

SYMBOL	PARAMETER	Value	Unit
V_{DRM}	Repetitive peak off-state voltages	600	V
$I_T (RMS)$	RMS on-state current	16	A
I_{TSM}	Non-repetitive peak on-state current	140	A

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
R_{th-j-c}	Thermal resistance Junction to case		-	-	1.4	$^{\circ}C/W$
R_{th-j-a}	Thermal resistance Junction to ambient	in free air	-	-	-	K/W



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Limiting values in accordance with the Maximum system(IEC 134)

SYMBOL	PARAMETER	CONDITIONS	MIN	Value	UNIT
V_{DRM}	Repetitive peak off-state voltages		-	600	V
$I_{T(RMS)}$	RMS on-state current	Full sine wave; $T_{mb} \leq 99^\circ\text{C}$	-	16	A
I_{TSM}	Surge on-state current	one cycle, 50 Hz peak ,non-repetitive 60 Hz	-	155 170	A A
I^2t	I^2t for fusing	value for one cycle of surge current	-	120	A ² S
V_{GM}	Peak gate voltage		-	10	V
I_{GM}	Peak gate current		-	2	A
P_{GM}	Peak gate power dissipation		-	5	W
$P_{G(AV)}$	Average gate power dissipation		-	0.5	W
T_{stg}	Storage temperature		-40	125	°C
T_j	Operating junction temperature		-40	125	°C

$T_j=25^\circ\text{C}$ unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
I_{GT}	Gate trigger current	$V_D=6V; R_L=10\Omega$ $I_{GT1+} 1$ $I_{GT1-} 2$ $I_{GT3+} 3$ $I_{GT3-} 4$	-	-	30 30 - 30	mA mA mA mA
V_{GT}	Gate trigger voltage	$V_D=6V; R_L=10\Omega$ $V_{GT1+} 1$ $V_{GT1-} 2$ $V_{GT3+} 3$ $V_{GT3-} 4$	-	-	1.5 1.5 - 1.5	V V V V
V_{TM}	Peak on-state voltage	$I_T=20A$,Inst,measurement	-	-	1.4	V
I_{DRM}	Reptitive peak off-state current	$V_D=V_{DRM}$, single phase , half wave, $T_j=125^\circ\text{C}$	-	-	2	mA
V_{GD}	Non-trigger gate voltage	$T_j=125^\circ\text{C}$ $V_D=1/2 V_{DRM}$	0.2	-	-	V
I_H	Holding current		-	25	-	mA
$(dv/dt)_c$	critical rate of rise off-state voltage at commutation	$T_j=125^\circ\text{C}$, $(di/dt)_c=-8A/ms$, $V_D=2/3V_{DRM}$	10	-	-	V/ μ s

Note 1 : Although not recommended, off-state voltages up to 800V may be applied without damage ,but the triac may switch to the on-state .the rate of current should not exceed 15A/us.

Note 2 : Device does not trigger in the T2-, G+ quadrant.

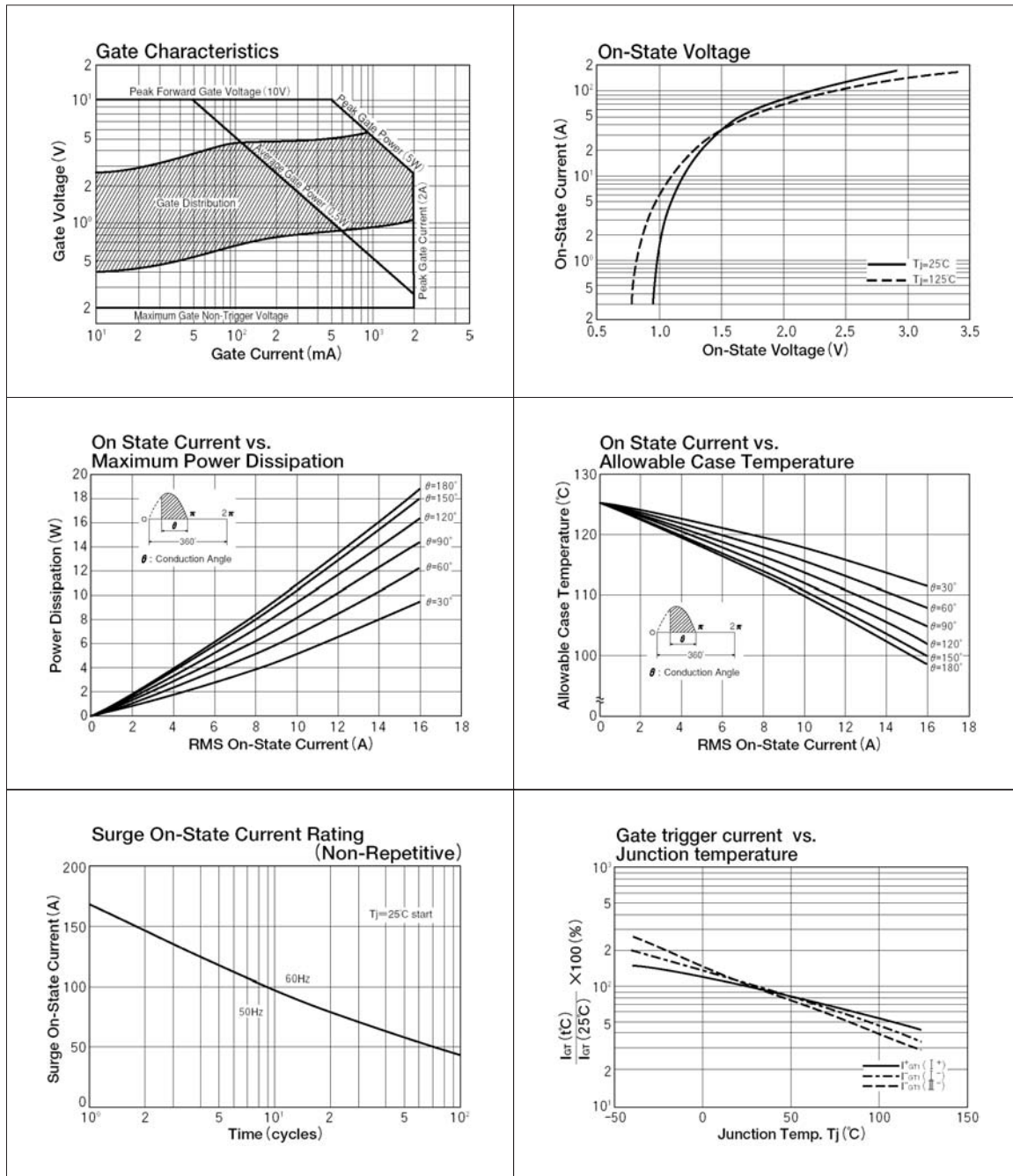


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Description



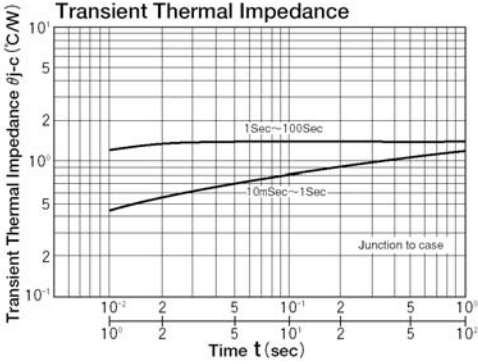
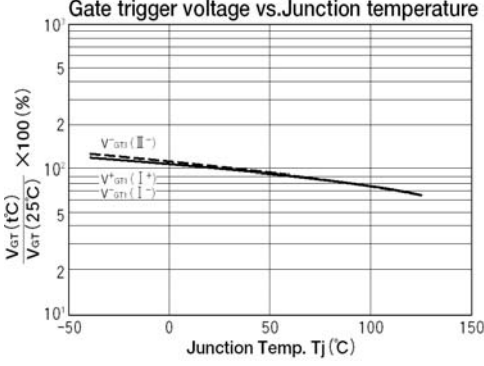


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Description

 <p>Transient Thermal Impedance</p> <p>Y-axis: Transient Thermal Impedance θ_{j-c} (C/W)</p> <p>X-axis: Time t (sec)</p> <p>Curves: 1Sec~100Sec, 10mSec~1Sec</p> <p>Label: Junction to case</p>	 <p>Gate trigger voltage vs. Junction temperature</p> <p>Y-axis: $\frac{V_{GT}(T_C)}{V_{GT}(25C)} \times 100$ (%)</p> <p>X-axis: Junction Temp. T_j (°C)</p> <p>Curves: $V_{GT}^-(II^-)$, $V_{GT}^+(I^+)$, $V_{GT}^-(I^-)$</p>



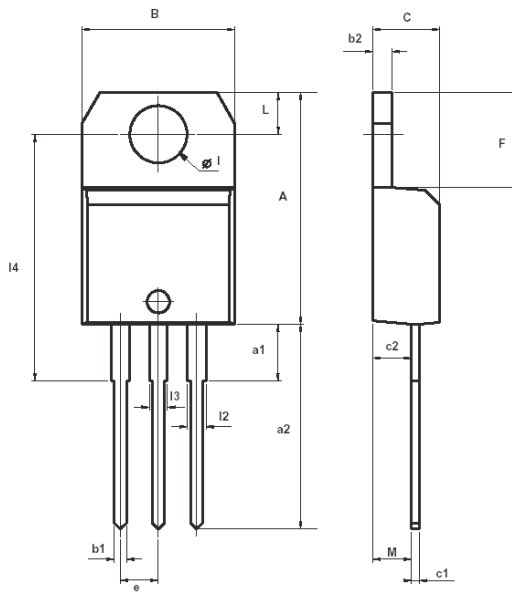
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MECHANICAL DATA

Dimensions in mm
 Net Mass: 2 g
 TO-220



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.20		15.90	0.598		0.625
a1		3.75			0.147	
a2	13.00		14.00	0.511		0.551
B	10.00		10.40	0.393		0.409
b1	0.61		0.88	0.024		0.034
b2	1.23		1.32	0.048		0.051
C	4.40		4.60	0.173		0.181
c1	0.49		0.70	0.019		0.027
c2	2.40		2.72	0.094		0.107
e	2.40		2.70	0.094		0.106
F	6.20		6.60	0.244		0.259
I	3.75		3.85	0.147		0.151
I4	15.80	16.40	16.80	0.622	0.646	0.661
L	2.65		2.95	0.104		0.116
I2	1.14		1.70	0.044		0.066
I3	1.14		1.70	0.044		0.066
M		2.60			0.102	