

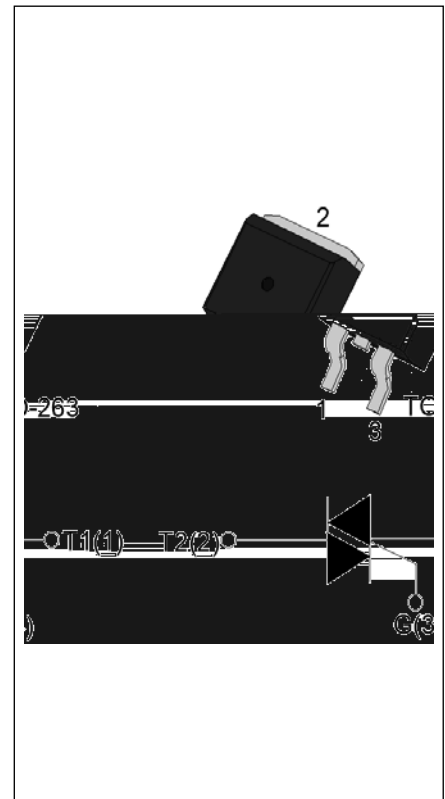


## T0610H-6E 6A TRIAC

Rev.A.1.0

### DESCRIPTION:

The T0610H-6E triac is suitable for general purpose AC switching. It can be used as an ON/OFF function in applications such as heating regulation, induction motor starting circuits, for phase control operation in light dimmers, motor speed controllers. Compared to traditional triacs, T0610H-6E provides a very high switching capability up to junction temperatures of 150°C. It can be driven directly through the MCU I/O port. Package TO-263 is RoHS compliant.



### MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	6	A
$V_{DRM}/V_{RRM}$	600	V
$I_{GT} / /$	10/10/10	mA

### ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	$T_{stg}$	-40-150	
Operating junction temperature range	$T_j$	-40-150	
Repetitive peak off-state voltage ( $T_j=25^\circ\text{C}$ )	$V_{DRM}$	600	V
Repetitive peak reverse voltage ( $T_j=25^\circ\text{C}$ )	$V_{RRM}$	600	V
RMS on-state current ( $T_c = 132^\circ\text{C}$ )	$I_{T(RMS)}$	6	A
Non repetitive surge peak on-state current (full cycle, $t_p=20\text{ms}$ , $T_j=25^\circ\text{C}$ )	$I_{TSM}$	60	A
Non repetitive surge peak on-state current (full cycle, $t_p=16.6\text{ms}$ , $T_j=25^\circ\text{C}$ )		66	
$I^2t$ value for fusing ( $t_p=10\text{ms}$ , $T_j=25^\circ\text{C}$ )	$I^2t$	18	$\text{A}^2\text{s}$
Critical rate of rise of on-state current ( $I_G=2 I_{GT}$ , $f=100\text{Hz}$ , $T_j=150^\circ\text{C}$ )	$di/dt$	50	$\text{A}/\mu\text{s}$
Peak gate current ( $t_p=20\mu\text{s}$ , $T_j=150^\circ\text{C}$ )	$I_{GM}$	4	A
Average gate power dissipation ( $T_j=150^\circ\text{C}$ )	$P_{G(AV)}$	1	W

Peak gate power	$P_{GM}$	10	W
Peak pulse voltage ( $T_j=25$ ; non-repetitive, off-state; FIG.8)	$V_{pp}$	3	kV

**ELECTRICAL CHARACTERISTICS** ( $T_j=25$  unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
$I_{GT}$	$V_D=12V$ $R_L=33\Omega$	- -	MAX.	10	mA
$V_{GT}$		- -	MAX.	1	V
$V_{GD}$	$V_D=V_{DRM}$ $T_j=150$ $R_L=3.3K\Omega$	- -	MIN.	0.2	V
$I_L$	$I_G=1.2I_{GT}$	-	MAX.	20	mA
				35	
$I_H$	$I_T=100mA$		MAX.	20	mA
dV/dt	$V_D=400V$ Gate Open $T_j=150$		MIN.	200	V/ $\mu s$
(dI/dt) <sub>c</sub>	(dV/dt) <sub>c</sub> =20V/ $\mu s$ , $T_j=150$		MIN.	1.5	A/ms
$t_{on}$	$I_G=20mA$ $I_A=200mA$ $I_R=20mA$ $T_j=25$		TYP.	2.5	$\mu s$
$t_{off}$				25	

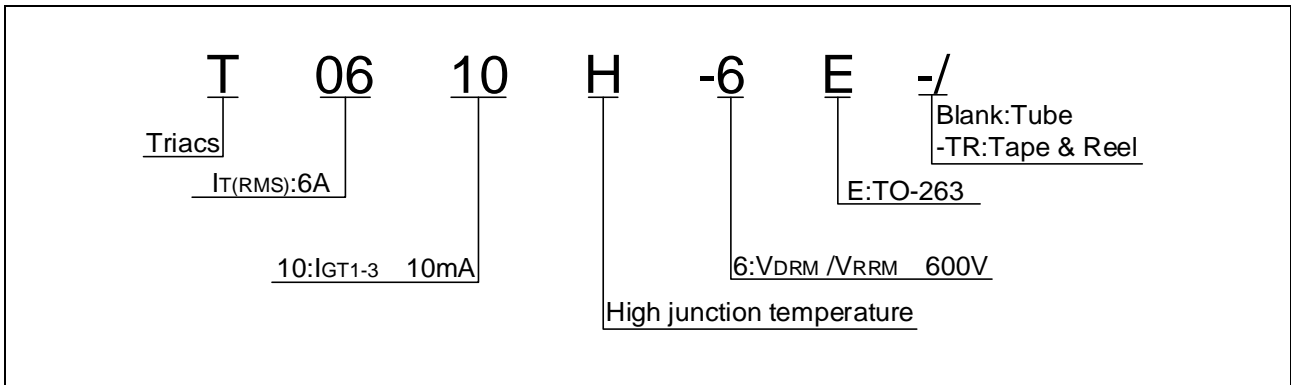
**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX.)	Unit
$V_{TM}$	$I_{TM}=8.5A$ $t_p=380\mu s$	$T_j=25$	1.4	V
$V_{TO}$	Threshold voltage	$T_j=150$	0.8	V
$R_D$	Dynamic resistance	$T_j=150$	63	m $\Omega$
$I_{DRM}$	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25$	5	$\mu A$
$I_{RRM}$		$T_j=150$	0.8	mA

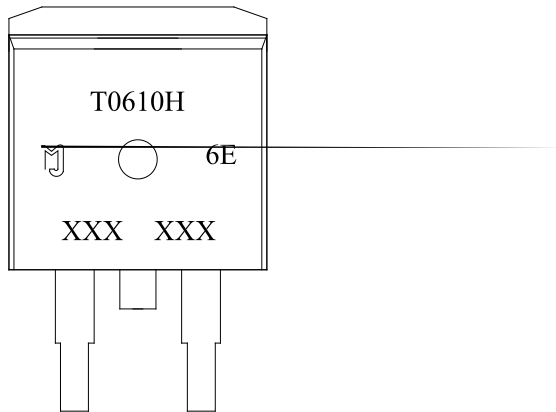
**THERMAL RESISTANCES**

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	2.3	$\text{W}$

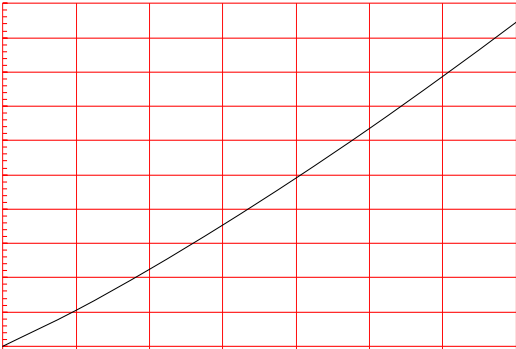
ORDERING INFORMATION



MARKING



**FIG.1** Maximum power dissipation versus RMS on-state current



**FIG.2:** RMS on-state current versus case temperature

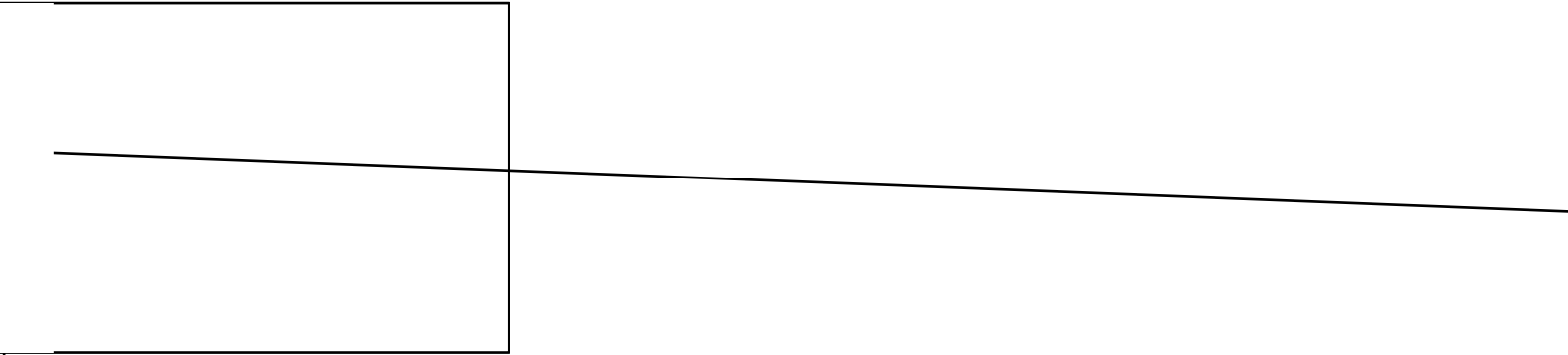
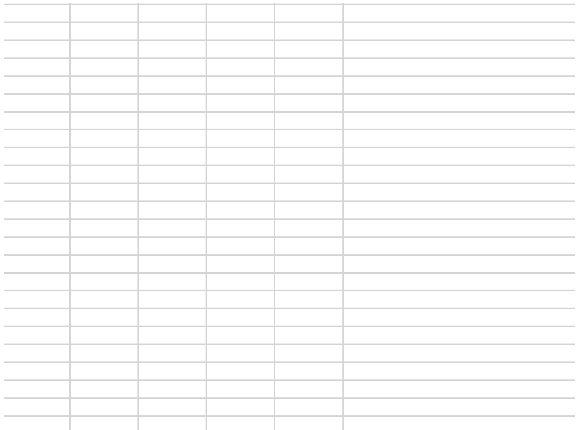


FIG.7: Relative variations of gate trigger current, holding current and latching current versus junction temperature

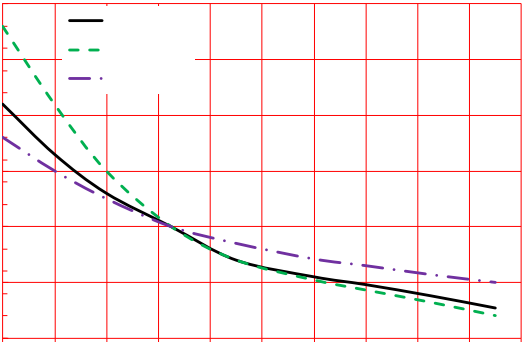
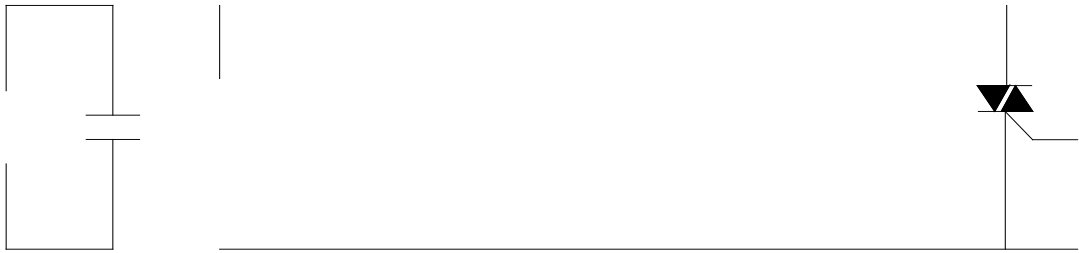


FIG.8 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



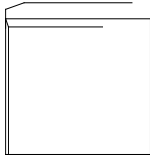
## ORDERING INFORMATION

Order code	Voltage $V_{DRM}/V_{RRM}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
		- -			
T0610H-6E	600	10	TO-263	50	Tube
T0610H-6E-TR				800	Tape & Reel

## Document Revision History

Date	Revision	Changes
Apr.10, 2023	A.1.0	Last updated

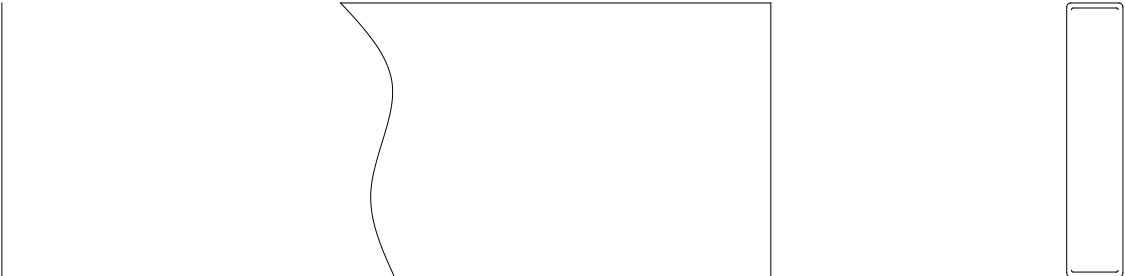
PACKAGE MECHANICAL DATA 015894SCS 0127 015894SCS 0127 015894SCS 0127



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.90		10.20	0.390		0.402
B	14.70		15.80	0.579		0.622
C	9.40		9.60	0.37		0.378
D	2.40			0.094		
E	1.20		1.50	0.047		0.059
F	0.75		0.85	0.029		0.033
G			1.50			
H	4.40		4.70	0.173		0.185
J	2.30		2.70	0.091		0.106
K	0.38		0.55	0.015		0.022
L	0		0.25			
M	1.25		1.35			




DELIVERY MODE



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