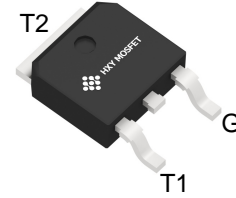




General Description

Glass passivated triacs in a plastic envelope, intended for use in applications requiring high bidirectional transient and blocking voltage capability and high thermal cycling performance.

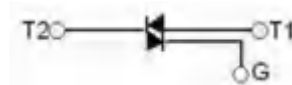
Typical applications include motor control, industrial and domestic lighting, heating and static switching.



TO-252-2L

Package Marking and Ordering Information

Product ID	Pack	Qty(PCS)
BT137-800E	TO-252-2L	2500



Maximum Ratings (Ta=25°C unless otherwise noted)

symbol	parameter	value	unit	
V_{DRM}	Repetitive peak off-state voltage($T_j=25^\circ\text{C}$)	800	V	
V_{RRM}	Repetitive peak reverse voltage($T_j=25^\circ\text{C}$)	800	V	
$I_{T(RMS)}$	RMS on-state current (full sine wave)	$T_C=103^\circ\text{C}$ 8	A	
I_{TSM}	Non repetitive surge peak on-state current (full cycle, $F=25\text{Hz}$)	65	A	
I_{GM}	Peak gate current	2	A	
$P_{G(AV)}$	Average gate power dissipation	$T_j=125^\circ\text{C}$ 0.5	W	
T_{stg}	Storage junction temperature range	-40 to +150	°C	
T_j	Operating junction temperature range	-40 to +125		
I^2t	I^2t value for fusing ($t_p=10\text{ms}$)	21	A^2s	
di/dt	Critical rate of rise of on-state current($I_G = 2 \times I_{GT}$)	I-II-III	50	$\text{A}/\mu\text{s}$
		IV	10	
$R_{th(j-c)}$	junction to case(AC)	2.1	°C/W	
$R_{th(j-a)}$	junction to ambient	70	°C/W	



Electrical Characteristics(Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Non-triggering gate voltage	V_{GD}	$V_D=V_{DRM}$ $T_j=125^\circ\text{C}$ $R_L=3.3\text{K}\Omega$	0.2		V
latching current	I - III	$I_G=1.2I_{GT}$		20	mA
	II - IV			30	
Gate trigger current	I	$T_2(+), G(+)$	$V_D=12\text{V}$ $R_L=100\Omega$	10	mA
	II	$T_2(+), G(-)$		10	
	III	$T_2(-), G(-)$		10	
	IV	$T_2(-), G(+)$		25	
Gate trigger voltage	V_{GT}	$V_D=12\text{V}$ $R_L=100\Omega$		1.3	V
Holding current	I_H	$I_T=100\text{mA}$ $I_G=20\text{mA}$		15	mA
Critical rise rate of off-state coltage	dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ\text{C}$	50		V/ μs
Peak gate current	$T_j=25^\circ\text{C}$ V_{TM}	$I_{TM}=10\text{A}$ $t_p=380\mu\text{s}$		1.6	V
Repetitive Peak Off-State Current	$T_j=25^\circ\text{C}$ I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$		5	μA
Repetitive Peak Reverse Current	$T_j=125^\circ\text{C}$ I_{RRM}			1	mA

Typical Characteristics

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

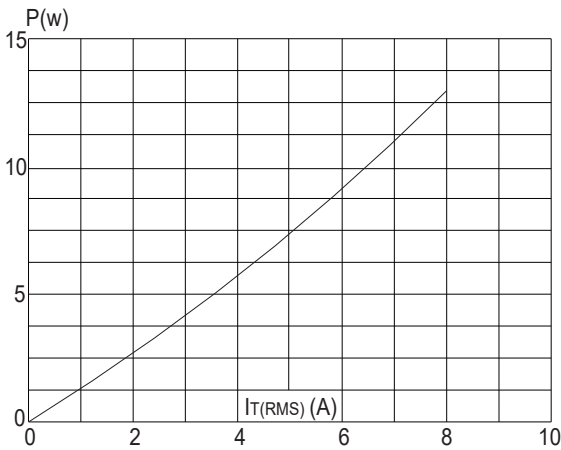


FIG.2: RMS on-state current versus ambient temperature (printed circuit board FR4,copper thickness:35 μm)(full cycle)

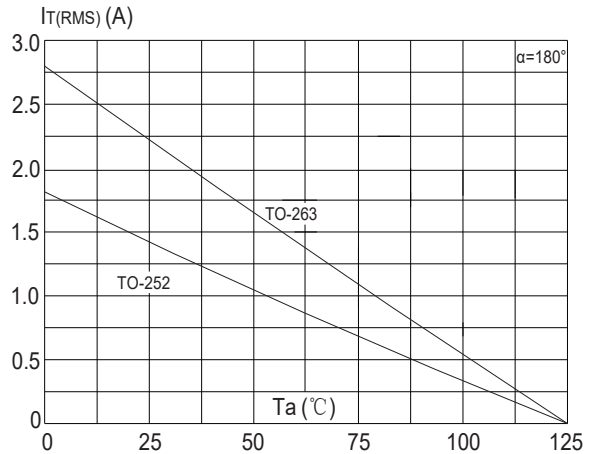




FIG.3: Surge peak on-state current versus number of cycles

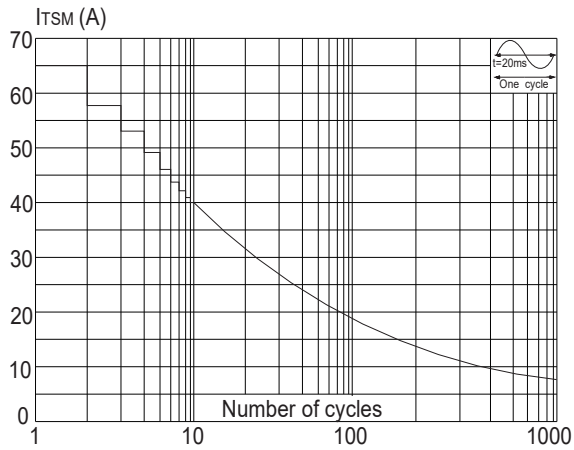


FIG.4: On-state characteristics (maximum values)

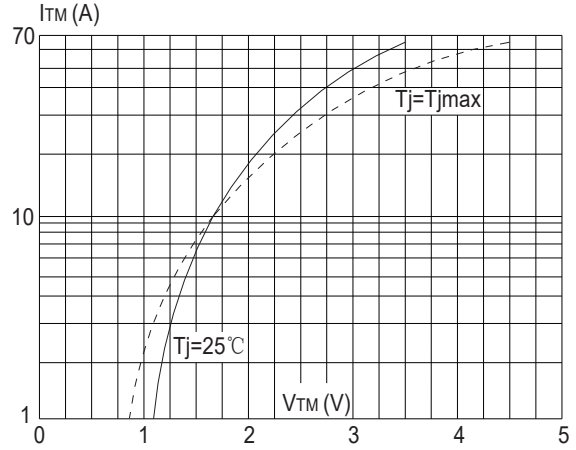


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t (I - II - III: $dI/dt < 50\text{A}/\mu\text{s}$; IV: $dI/dt < 10\text{A}/\mu\text{s}$)

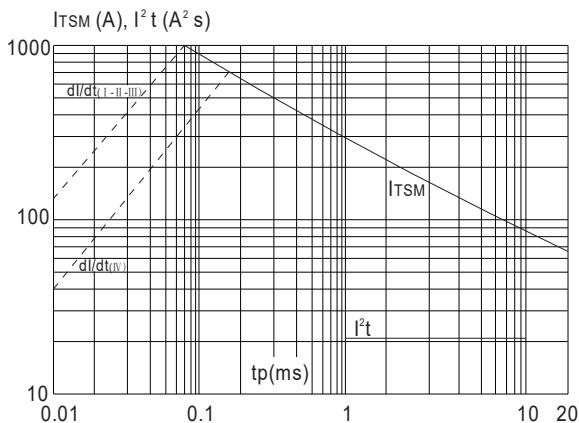


FIG.6: Relative variations of gate trigger current versus junction temperature

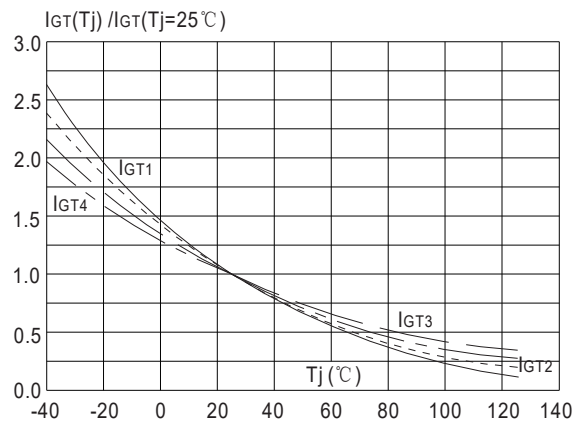


FIG.7: Relative variations of holding current versus junction temperature

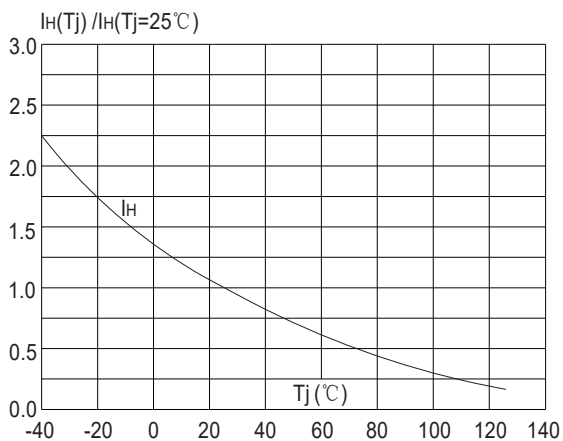
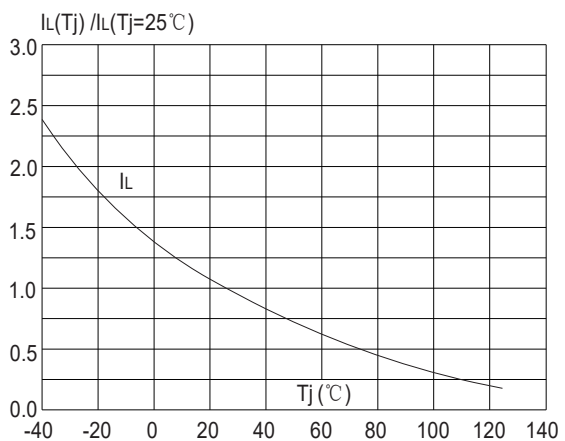
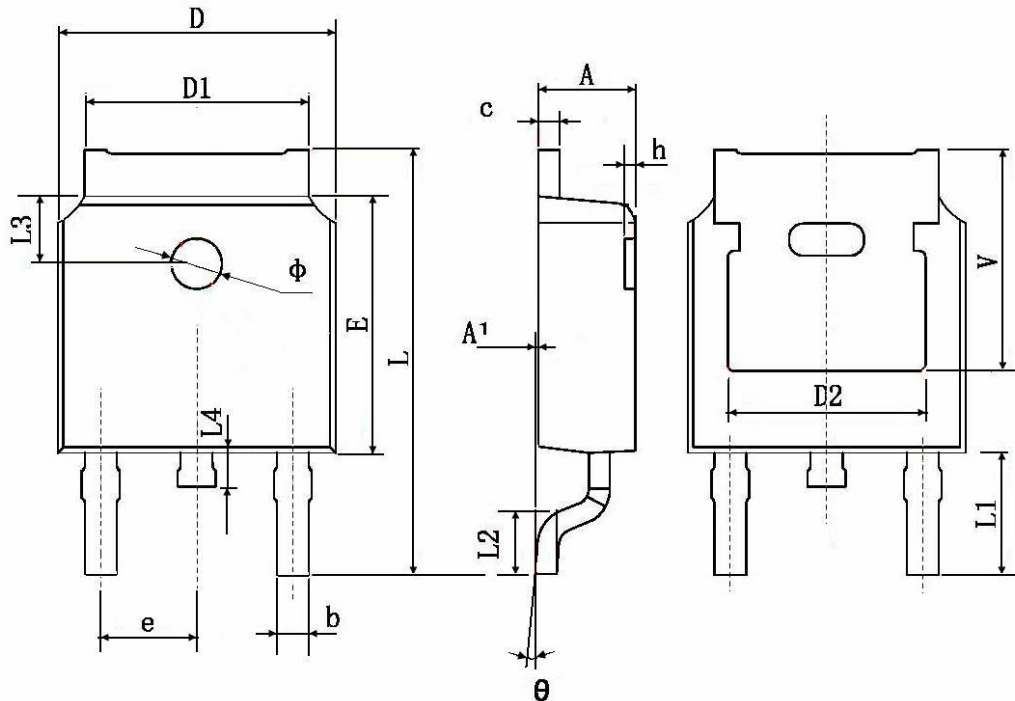


FIG.8: Relative variations of latching current versus junction temperature





TO-252-2L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	0.483 TYP.		0.190 TYP.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 TYP.		0.114 TYP.	
L2	1.400	1.700	0.055	0.067
L3	1.600 TYP.		0.063 TYP.	
L4	0.600	1.000	0.024	0.039
φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 TYP.		0.211 TYP.	



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