

FEATURES

High current triac
Low thermal resistance with clip bonding
High commutation (4 quadrant) or very high
commutation (3 quadrant) capability

VOLTAGE RANGE

600/800 Volts

CURRENT

8 Ampere

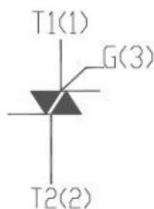
GK xxx
BT137S 600/800x

LOGO

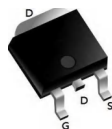
GK

xxx

CODE



Schematic Diagram



TO-252 top view

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings

Symbol	Parameter	Conditions	Ratings	Unit
VDRM VRRM	Repetitive Peak Off-State Voltage	BT137-600	600	V
		BT137-800	800	V
IT(RMS)	R.M.S On-State Current	Tc=110°C	8	A
ITSM	Surge On-State Current	tp=16.7ms/tp=10ms	80/84	A
I ² t	I ² t for fusing	Tp=10ms	30	A ² s
PG(AV)	Average Gate Power Dissipation	Tj=125°C	1	W
IGM	Peak Gate Current	Tj=125°C	4	A
Tj	Operating Junction Temperature		~40~125	°C
TSTG	Storage Temperature		~40~150	°C

Electrical characteristics ($T_J=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Test Conditions	Value				Unit
			D	E	F	G	
IDRM	Repetitive Peak Off-State Current	$T_J=25^{\circ}\text{C}$	≤ 5				μA
		$T_J=125^{\circ}\text{C}$	≤ 1				mA
IRRM	Repetitive Peak Reverse Current	$T_J=25^{\circ}\text{C}$	≤ 5				μA
		$T_J=125^{\circ}\text{C}$	≤ 1				mA
VTM	Forward "on" voltage	$I_T=12\text{A}$ $t_p=380\mu\text{s}$	≤ 1.55				V
VGT	Gate trigger voltage	$V_D=12\text{V}$, $R_L=30\Omega$	≤ 1.3				V
di/dt	Critical-rate of rise of commutation current.	$V_D=12\text{V}$ $I_{GT}=0.1\text{A}$	≥ 50				$\text{A}/\mu\text{s}$
			≥ 10				$\text{A}/\mu\text{s}$
IGT	Gate trigger current	$V_D=12\text{V}$ $R_L=30\Omega$	≤ 5	≤ 10	≤ 25	≤ 50	mA
			≤ 10	≤ 25	≤ 70	≤ 100	mA
IH	Holding current	$I_T=0.2\text{A}$	≤ 10	≤ 25	≤ 30	≤ 60	mA
VGD	Gate non-trigger voltage	$V_D=V_{DRM}$ $T_J=125^{\circ}\text{C}$, $R_L=3.3\text{K}\Omega$	≥ 0.2				V
dv/dt	Critical-rate of rise of commutation voltage	$T_J=125^{\circ}\text{C}$ $V_D=2/3V_{DRM}$ Gate	≥ 5	≥ 10	≥ 50	≥ 200	$\text{V}/\mu\text{s}$

RATING AND CHARACTERISTIC CURVES

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

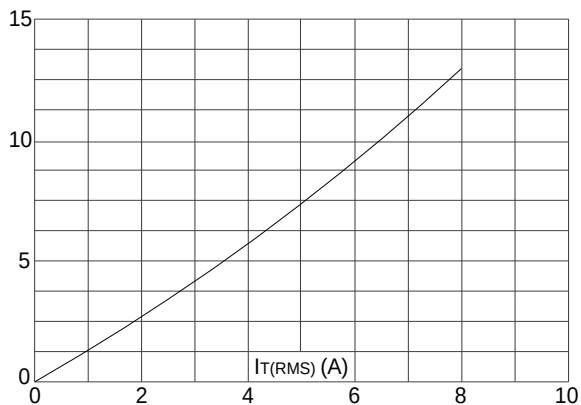


FIG.2: RMS on-state current versus case temperature

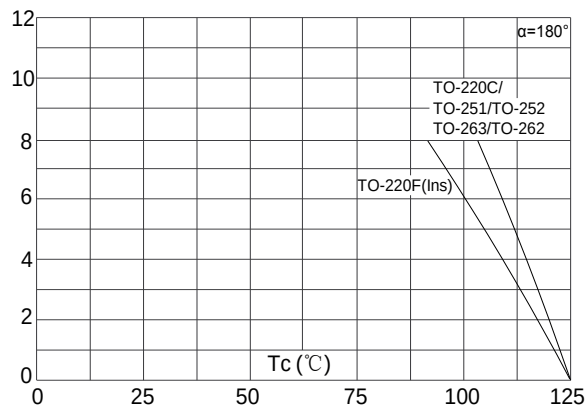


FIG.3: Surge peak on-state current versus number of cycles

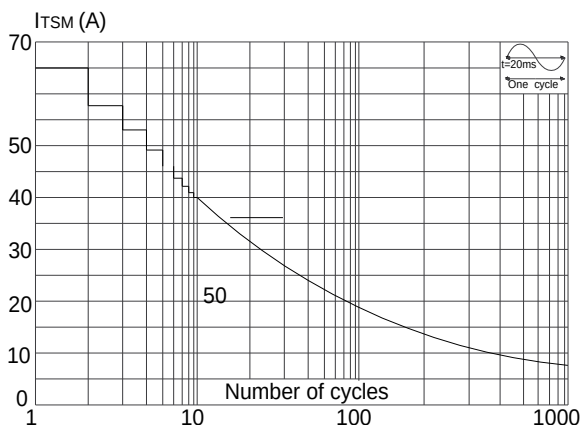


FIG.4: On-state characteristics (maximum values)

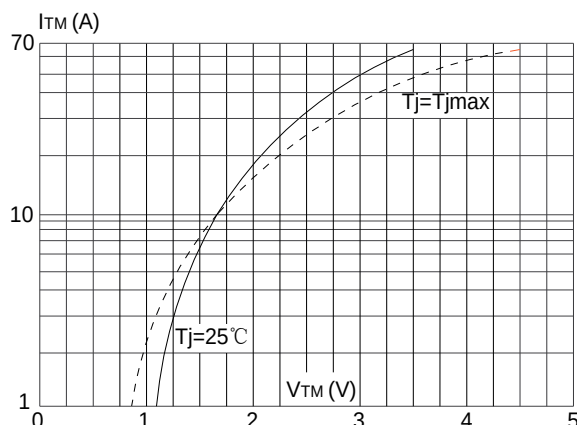


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t ($di/dt < 100\text{A}/\mu\text{s}$)

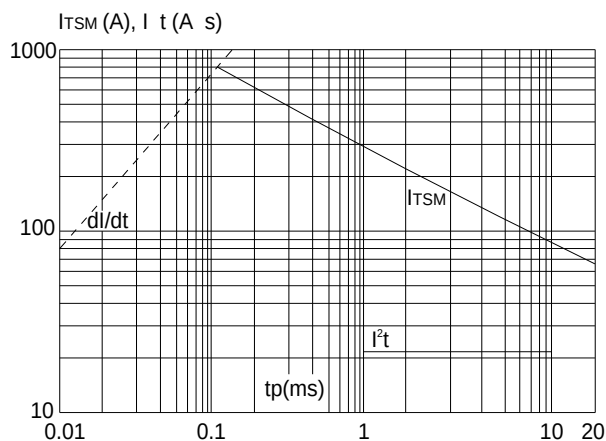
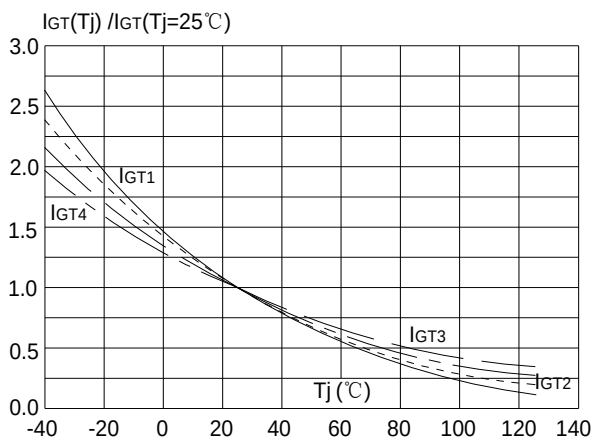


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



RATING AND CHARACTERISTIC CURVES

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

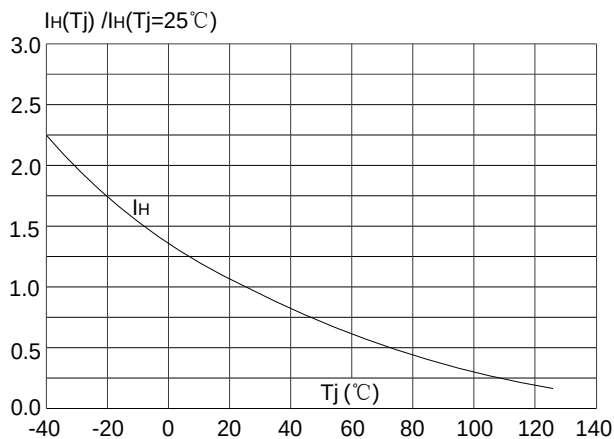
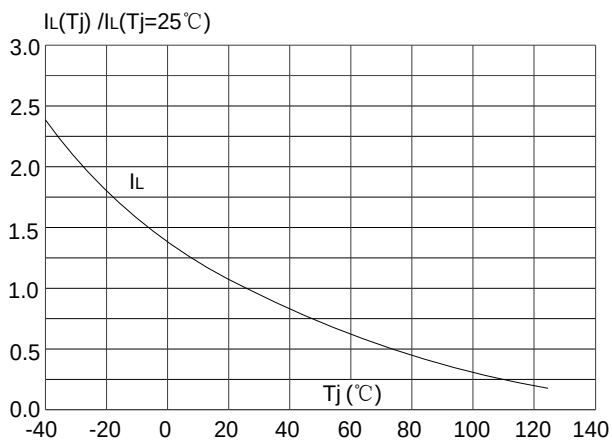
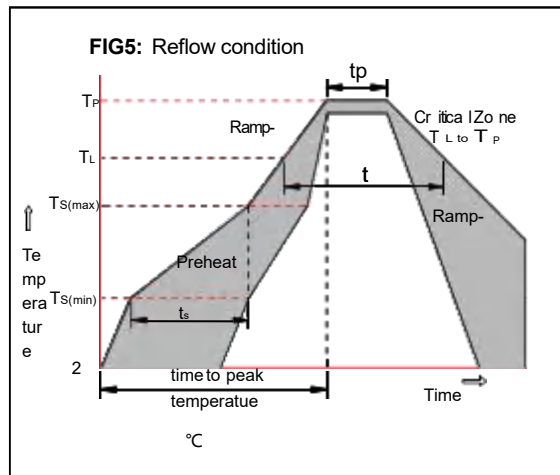


FIG.8: Relative variations of latching current versus junction temperature



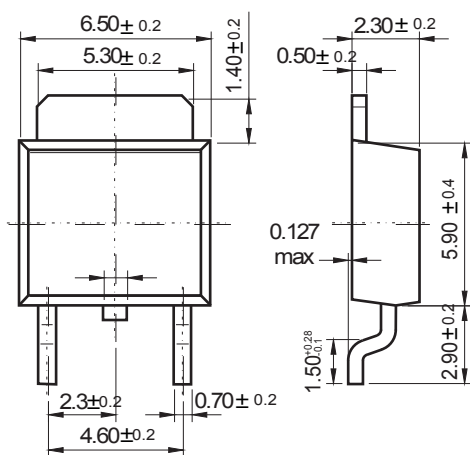
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150 °C
	-Temperature Max ($T_{s(max)}$)	+200 °C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3 °C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3 °C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217 °C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5) °C
Time within 5 °C of actual Peak Temp (t_P)		30 secs. Max
Ramp-down Rate		6 °C/sec. Max
Time 25 °C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260 °C

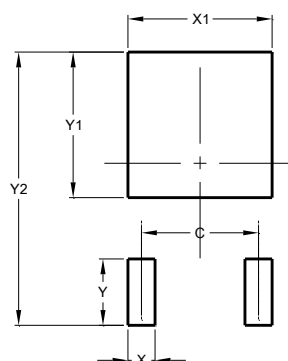


Package Dimensions & Suggested Pad Layout

TO-252

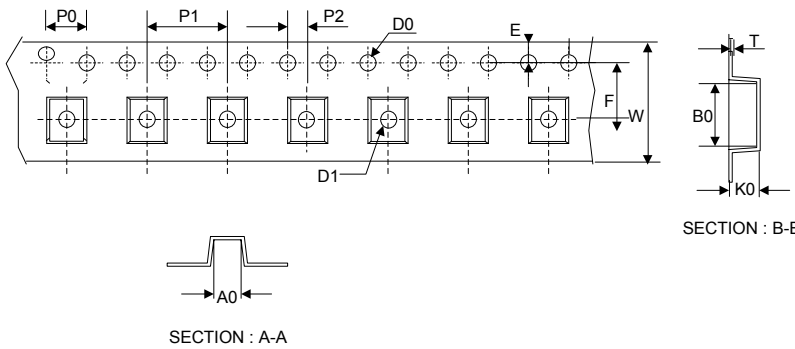
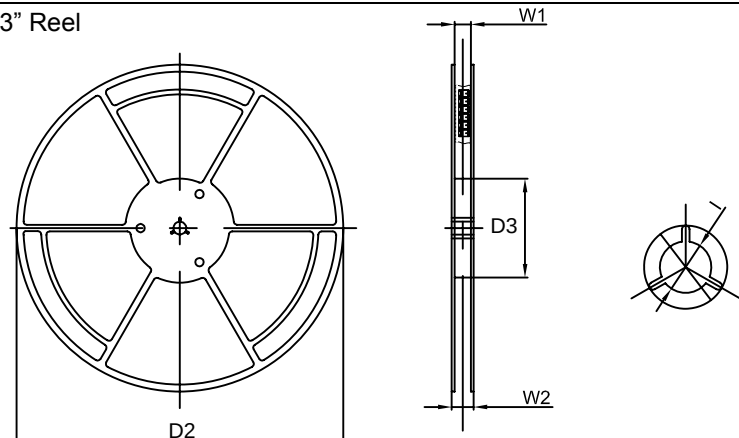


Dimensions in inches and (millimeters)



Dimensions	Value (in mm)
C	4.55
X	1.50
X1	5.80
Y	2.70
Y1	6.00
Y2	10.90

Tape & reel specification

Tape		Symbol	Dimension (mm)
 SECTION : A-A SECTION : B-B		P0	4.00±0.20
		P1	8.00±0.20
		P2	2.00±0.20
		D0	1.55±0.15
		D1	1.55±0.20
		E	1.75±0.20
		F	7.50±0.20
		W	16.00±0.20
		A0	7.10±0.20
		B0	10.50±0.20
		K0	2.70±0.20
		T	0.30±0.10
		D2	330.0±5.0
		D3	100.0±4.0
		W1	20.0±5.0
13" Reel		W2	I
		W2	25.0±5.0
		I	13.0±2.0
		Quantity: 2500PCS	