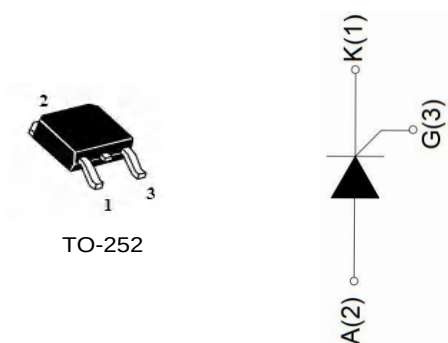


Features

- High current triac
- Low thermal resistance with clip bonding
- High commutation or very high

VOLTAGE 600/800 V
CURRENT 12.0 A



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

ELECTRICAL CHARACTERISTICS (T_j = 25°C, unless otherwise specified)

Symbol	Parameter	Conditions	Ratings	Unit
V _{DRM} V _{RRM}	Repetitive Peak Off-State Voltage	BT151S-600	600	V
		BT151S-800	800	
I _{T(RMS)}	R.M.S On-State Current	T _c =105°C	12	A
I _{T(AV)}	On-state average current	T _C =105°C	7.5	A
I _{TSM}	Surge On-State Current	T _p =10ms/t _p =8.3ms	120/132	A
I ² t	I ² t for fusing	T _p =10ms	75	A ² s
PGM	Peak Gate Power Dissipation	T _j =125°C	2	W
PG(AV)	Average Gate Power Dissipation	T _j =125°C	0.5	W
T _j	Operating Junction Temperature		~40~125	°C
TSTG	Storage Temperature		~40~150	°C

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

Symbol	Parameter	Test Conditions	Value	Unit
IDRM	Repetitive Peak Off-State Current	T _c =25°C	≤10	uA
		T _c =125°C	≤1	mA
IRRM	Repetitive Peak Reverse Current	T _c =25°C	≤10	uA
		T _c =125°C	≤1	mA
VTM	Forward "on" voltage	I _T =23A, t _p =380us	≤1.7	V
VGT	Gate trigger voltage	V _D =12V, R _L =30Ω	≤1.0	V
di/dt	Critical rate of rise of on-state current	T _j =125°C, I _G =2xI _{GT} , t _r ≤100ns	≥50	A/us
IGT	Gate trigger current	V _D =12V, I _T =0.1A	≤20	mA
IL	Latching current	I _G =1.2I _{GT}	≤40	mA
IH	Holding current	I _T =0.1A	≤30	mA
VGD	Gate non-trigger voltage	V _D =V _{DRM} , T _J =125°C, R _L =3.3KΩ, R _{GK} =1KΩ	≥0.25	V
dv/dt	Critical-rate of rise of commutation voltage	T _J =125°C, V _D =2/3V _{DRM} , Gate open circuit	≥200	V/us
Rth(j-c)	Thermal resistance	Junction to case	1	°C/W
Rth(j-a)	Thermal resistance	Junction to ambient	50	°C/W

RATING AND CHARACTERISTIC CURVES

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

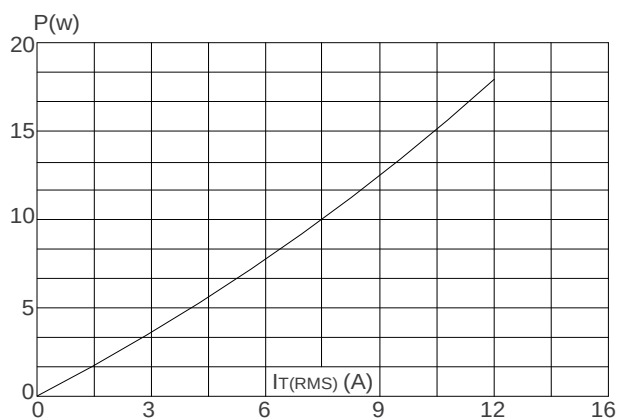


FIG.2: RMS on-state current versus case temperature

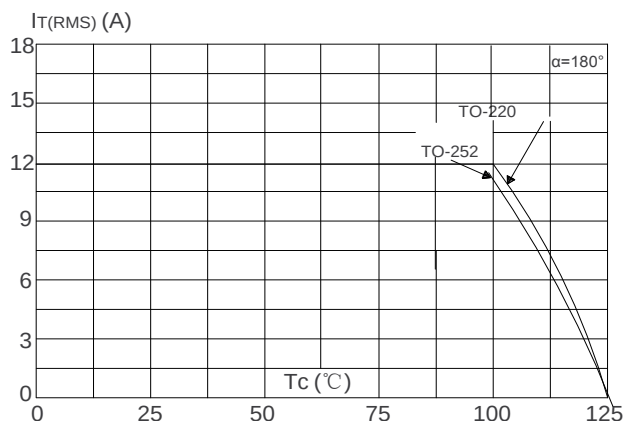


FIG.3: Surge peak on-state current versus number of cycles

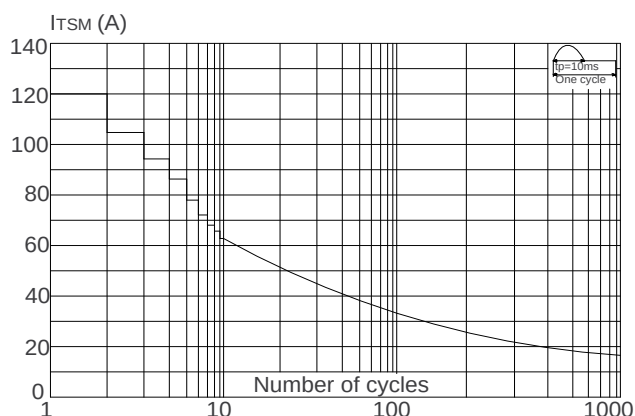


FIG.4: On-state characteristics (maximum values)

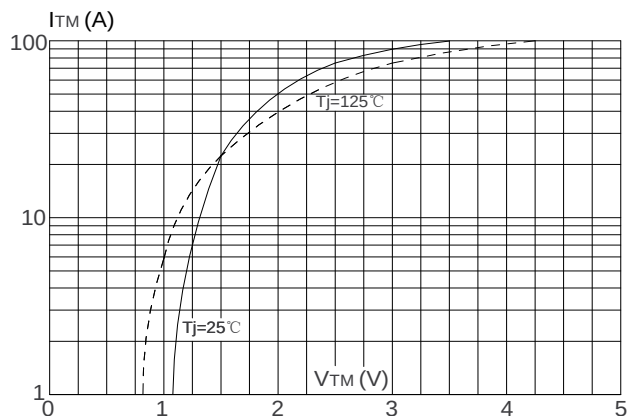


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of $I^2 t$ ($di/dt < 100A/\mu s$)

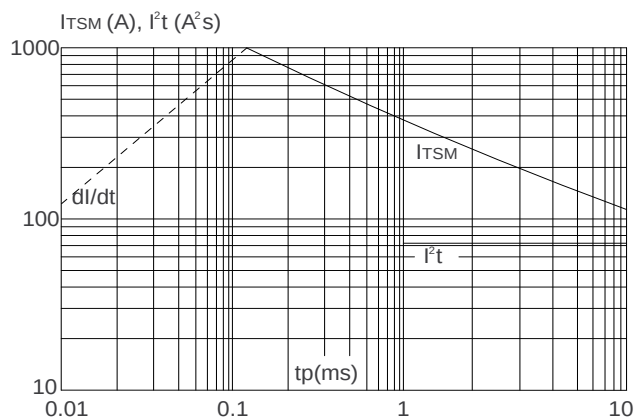
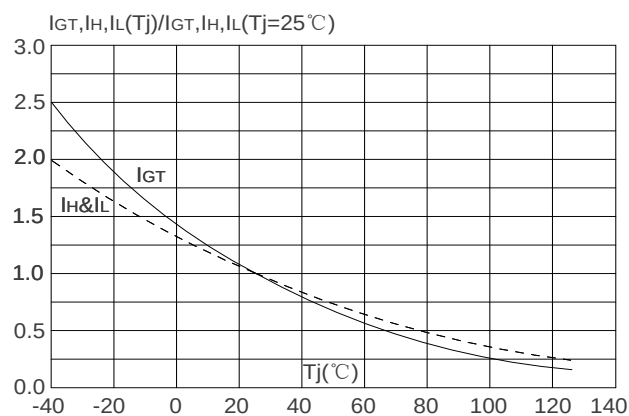
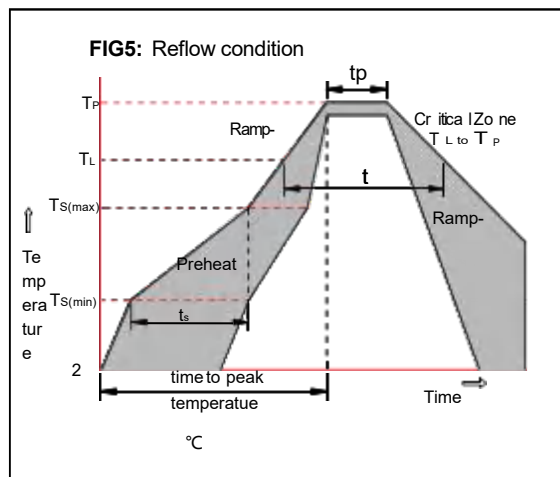


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



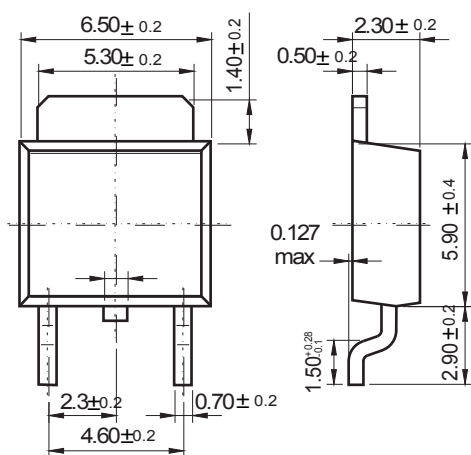
Soldering parameters

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

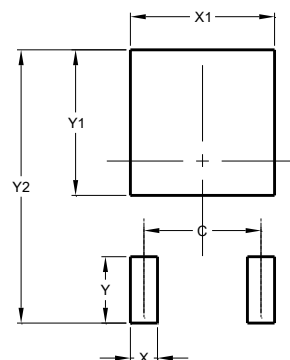


Package Dimensions & Suggested Pad Layout

TO-252

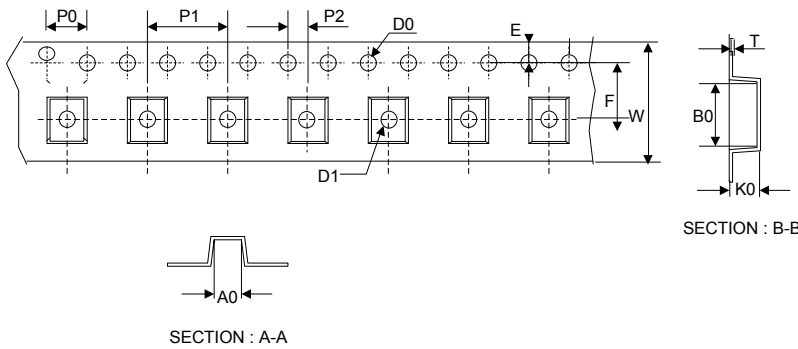
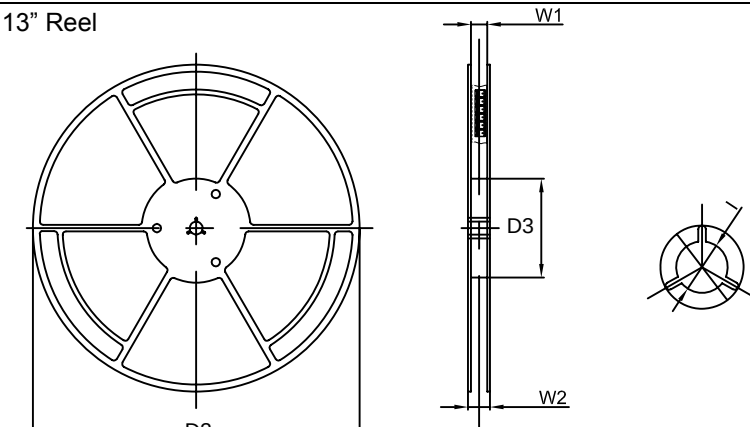


Dimensions in inches and (millimeters)



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)
		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	25.0±5.0
		I	13.0±2.0
		Quantity: 2500PCS	