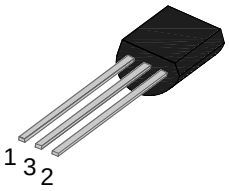
BT131 SERIES

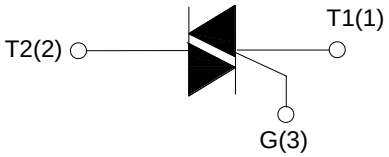
TO-92 Plastic-Encapsulate Thyristors

Description

BT131 series triacs with low holding and latching current are especially recommended for use on middle and small resistance type power load.

TO-92





MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	1	A
I_{TSM}	10	A
V_{TM}	1.6	V

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40 - 150	℃
Operating junction temperature range	T_j	-40 - 125	℃
Repetitive peak off-state voltage (T_j=25℃)	V_{DRM}	800	V
Repetitive peak reverse voltage (T_j=25℃)	V_{RRM}	800	V
Non repetitive surge peak Off-state voltage	V_{DSM}	V_{DRM} + 100	V
Non repetitive peak reverse voltage	V_{RSM}	V_{RRM} + 100	V
RMS on-state current (T_C=51℃)	$I_{T(RMS)}$	1	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	10	A
I^2t value for fusing (tp=10ms)	I^2t	1.28	A^2s
Critical rate of rise of on-state current (I_G=2×I_{GT})	dI/dt	10	A/μs
Peak gate current	I_{GM}	2	A
Average gate power dissipation	$P_{G(AV)}$	0.5	W

Peak gate power	P_{GM}	5	W

ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

Symbol	Test Condition	Quadrant		Value	Unit
I_{GT}	V_D=12V R_L=33Ω	Ⅰ-Ⅱ-Ⅲ	MAX	3	mA
		Ⅳ		7	
V_{GT}		ALL	MAX	1.5	V
V_{GD}	V_D=V_{DRM} T_j=125℃ R_L=3.3KΩ	ALL	MIN	0.2	V
I_L	I_G=1.2I_{GT}	Ⅰ-Ⅲ	MAX	5	mA
		Ⅱ-Ⅳ		8	
I_H	I_T=200mA		MAX	5	mA
dV/dt	V_D=2/3V_{DRM} Gate Open T_j=125℃		MIN	15	V/μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	I_{TM}=1.4A tp=380μs	T_j=25℃	1.6	V
I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}	T_j=25℃	10	μA
I_{RRM}		T_j=125℃	500	μA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-92	60	℃/W

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

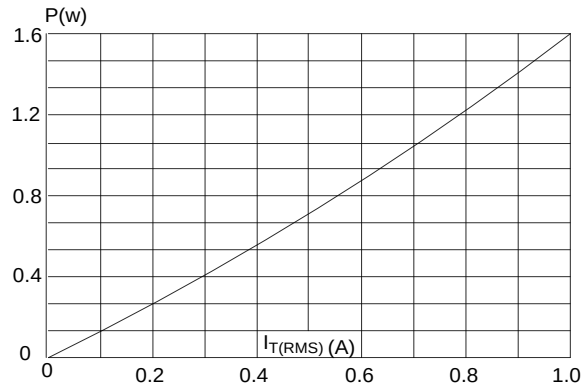


FIG.2: RMS on-state current versus case temperature

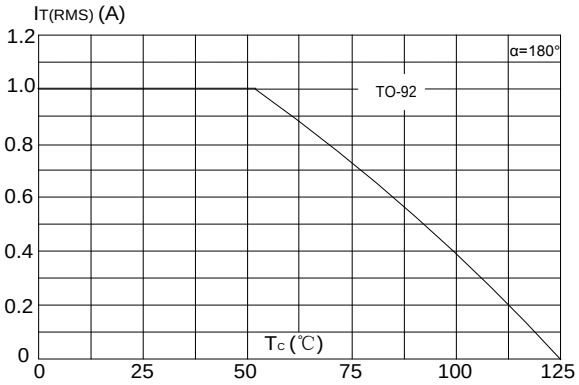


FIG.3: Surge peak on-state current versus number of cycles

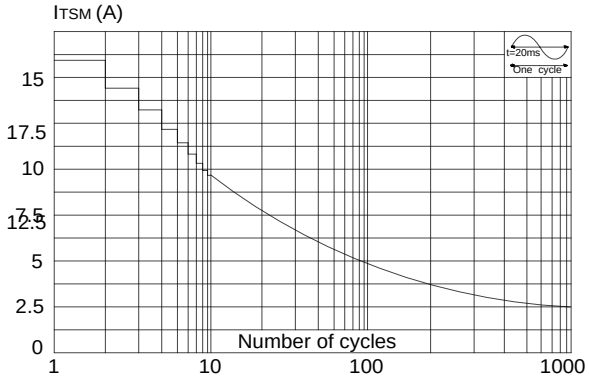


FIG.4: On-state characteristics (maximum values)

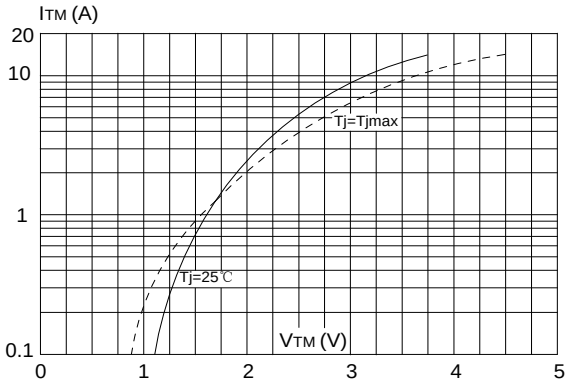


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<20ms and corresponding value of I^2t (dI/dt < 10A/μs)

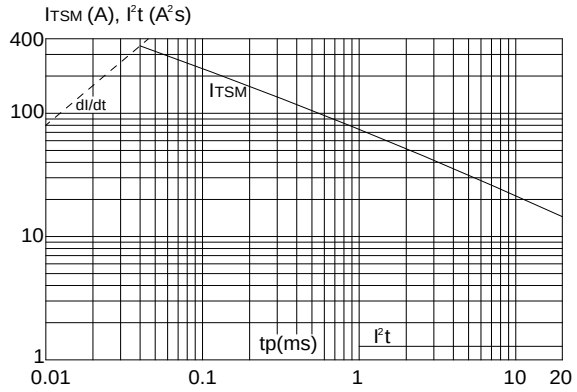
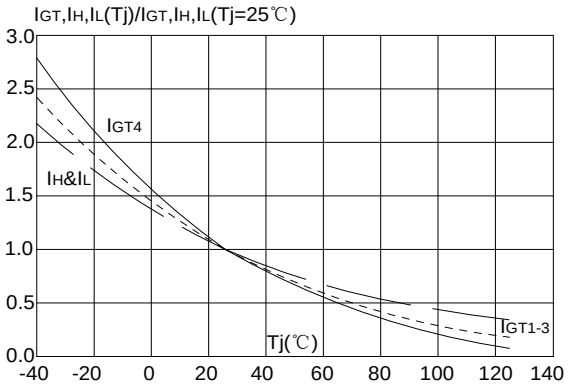
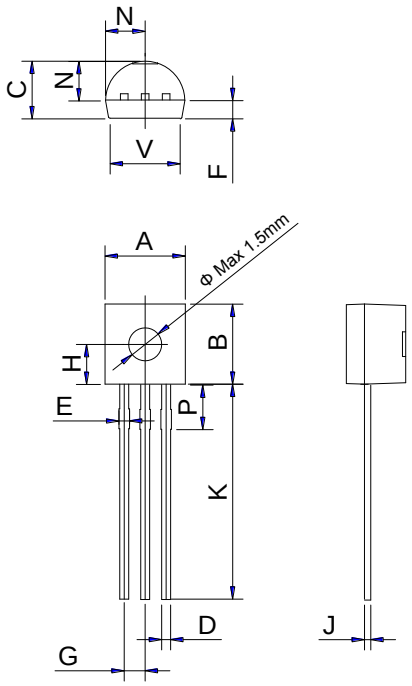


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



PACKAGE MECHANICAL DATA



TO-92

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.45		5.20	0.175		0.205
B	4.32		5.33	0.170		0.210
C	3.18		4.19	0.125		0.165
D	0.407		0.533	0.016		0.021
E	0.60		0.80	0.024		0.031
F	-	1.1	-	-	0.043	-
G	-	1.27	-	-	0.050	-
H	-	2.30	-	-	0.091	-
J	0.36		0.50	0.014		0.020
K	12.70		15.0	0.500		0.591
N	2.04		2.66	0.080		0.105
P	1.86		2.06	0.073		0.081
V	-		4.3	-		0.169