



BT131 TRIACs

●Product features

P⁺ on the through diffusion isolation,
Single mesa structure (Single Mesa),
Table glass passivation process,
Gate logic level trigger
Application of IC drive directly
The applicable model : BT131

●The main purposes

Fan speed control
The dimming circuit
Small power AC phase controlled circuit

●Package

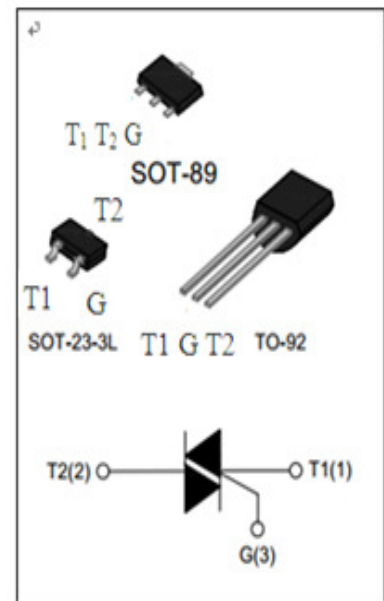
TO-92/SOT-23

●Main Feature (T_j=25℃)

Symbol	Value	Unit
I _T (RMS)	1.0	A
V _{DRM} / V _{R_{RM}}	600/800	V
V _{TM}	1.5	V

●Absolute ratings (Limiting Values)

Symbol	Parameter		Value	Unit
I _{TSM}	Non repetitive surge peak on-state Current (tp=10ms)		12	A
I ² t	(tp=10ms)		1.3	A ² S
di/dt	I _G =2IGT, tr≤100ns, T _j =125℃	I	50	A/μs
		II	50	
		III	50	
		IV	10	
I _{GM}	Peak gate current(tp=20us)		1.2	A
P _{GM}	Peak gate power		3	W
P _{G(AV)}	Average gate power		0.3	W
T _{stg}	Storage temperature		-40--+150	℃
T _j	Operating junction temperature		-40--+125	





●Thermai Resistances

Symbol	Parameter		Value	Unit
Rth (j-c)	Junction to case	TO-92	60	°C/W
		SOT-23	23	

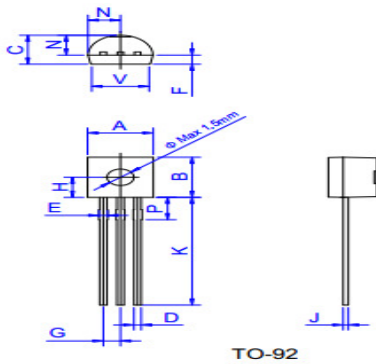
●Electrical characteristics (Tj=25°C unless otherwise stated)

Symbol	Test Conditions		Value			Unit
			Min	Type	Max	
IGT	VD=12V, IGT=0.1A	I II III	-----	-----	3	mA
		IV	-----	-----	5	
IDRM	VD=VDRM	Tj=25°C	-----	-----	10	μ A
		Tj=125°C	-----	-----	0.2	mA
IRRM	VD=VRRM	Tj=25°C	-----	-----	10	μ A
		Tj=125°C	-----	-----	0.2	mA
IL	VD=12V, IGT=0.1A	I II III	-----	-----	7	mA
		IV	-----	-----	15	
VGT	VD=12V		-----	-----	1.2	V
VGD	VD=VDRM, Tj=125°C		0.2	-----	-----	V
IH	VD=12V, IT=100mA		-----	-----	5	mA
VTM	ITM=1.6A, tp=380 μ s		-----	-----	1.6	V
dV/dt	VD=67% VDRM, GateOpen, Tj=125°C		30	-----	-----	v/ μ s



● Measure of package

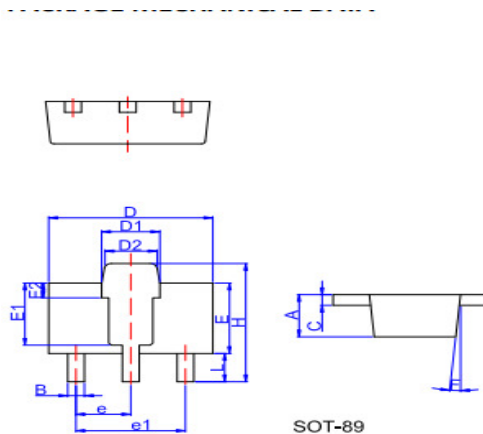
TO-92



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

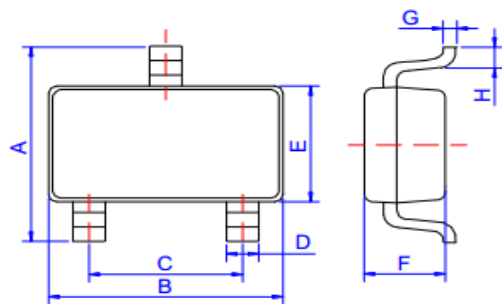
SOT-89



SOT-89

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.40		1.60	0.055		0.063
B	0.35		0.52	0.014		0.020
C	0.35		0.46	0.014		0.018
D	4.30		4.70	0.169		0.185
D1	1.50		1.70	0.059		0.067
D2	1.30		1.50	0.051		0.059
E	2.30		2.70	0.091		0.106
E1		2.20			0.087	
E2		0.52			0.020	
e		1.50			0.059	
e1		3.00			0.118	
F		5°			5°	
H	3.94		4.0	0.155		0.157
L	0.80		1.20	0.031		0.047

SOT-23



SOT-23-3L

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.65		2.95	0.104		0.116
B		2.92			0.115	
C		1.90			0.075	
D	0.34		0.36	0.013		0.014
E		1.60			0.063	
F		1.17			0.046	
G		0.15			0.006	
H	0.25		0.55	0.010		0.022



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

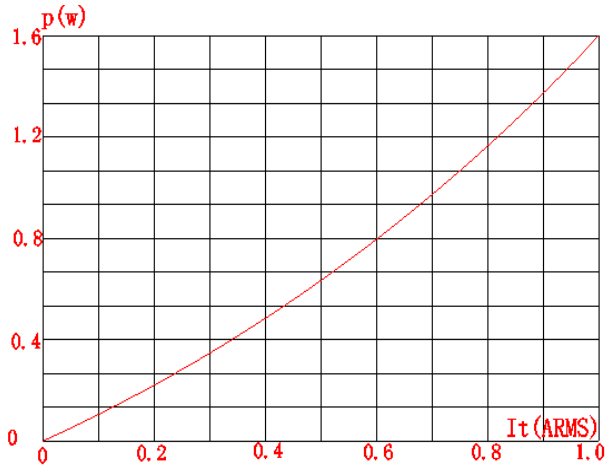


FIG. 3: Surge peak on-state current
versus number of cycles

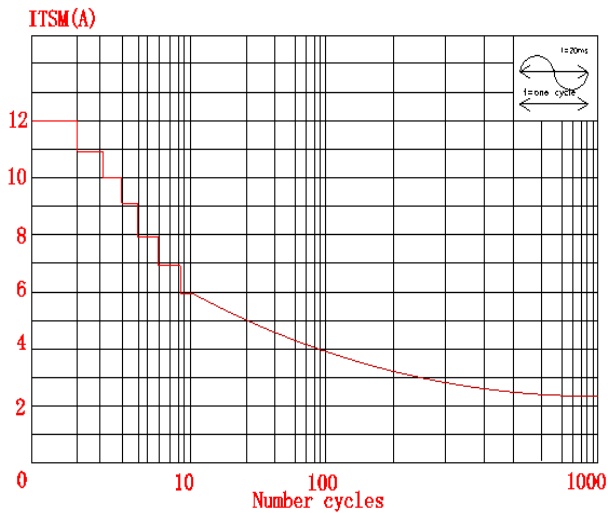


FIG. 5: Non-repetitive surge peak on-state
current for a sinusoidal pulse with width
 $t_p < 20\text{ms}$, and corresponding value of
 $I^2 t$

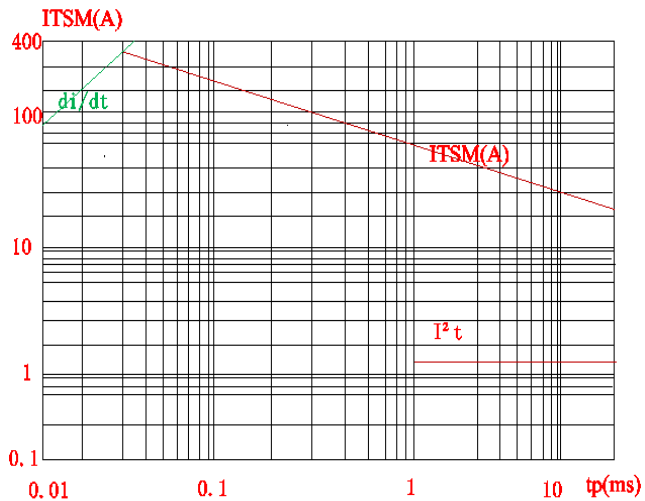


FIG. 2: RMS on-state current versus
case temperature

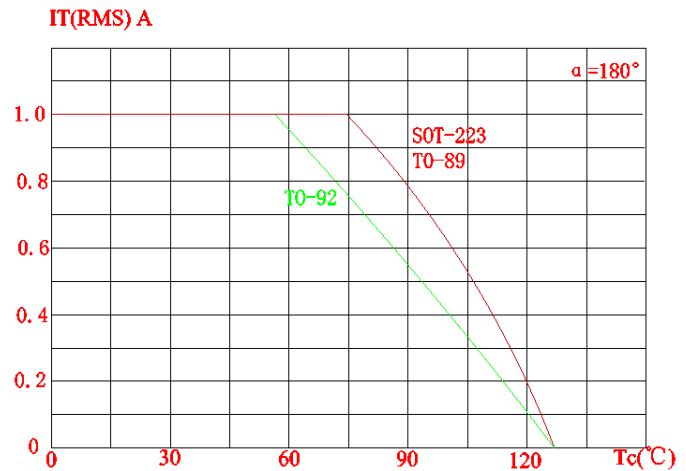


FIG. 4: On-state characteristics
(maximum values)

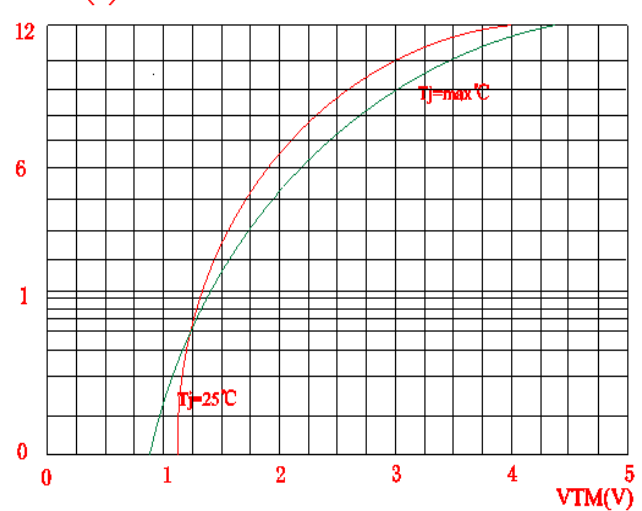


FIG. 6: Relative variations of gate
trigger current, holding current and
latching current versus junction
temperature

