



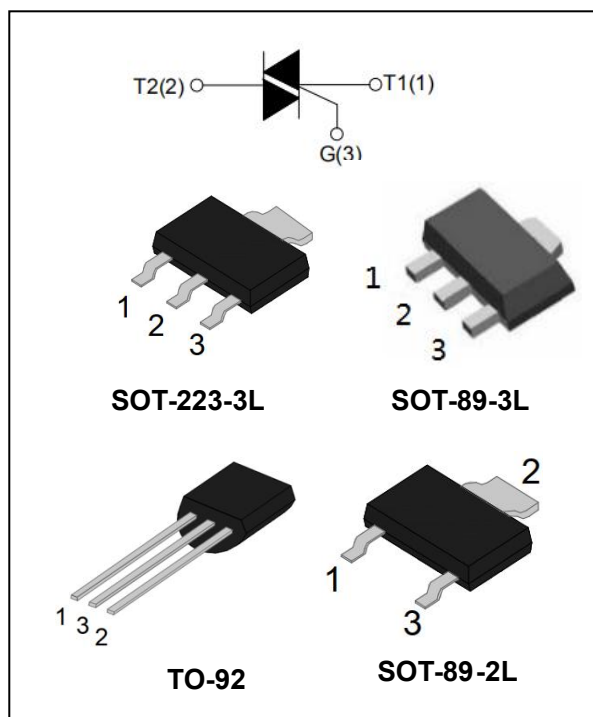
BT131 Series 1A Triacs

DESCRIPTION:

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

MAIN FEATURES:

symbol	value	unit
$I_{T(RMS)}$	1	A
V_{DRM}/V_{RRM}	600/800	V
V_{TM}	≤ 1.5	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}	600/800	V
Repetitive peak reverse voltage (T _j =25℃)		V _{RRM}	600/800	V
RMS on-state current		I _{T(RMS)}	1	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)		I _{TSM}	16	A
I ² t value for fusing (t _p =10ms)		I ² t	1.28	A ² s
Critical rate of rise of on-state current (I _G =2×I _{GT})	di/dt	I - II -III	50	A/μs
		IV	10	
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 ($T_j=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Test Condition	Quadrant		Value		Unit
				T	D	
I_{GT}	$V_D=12\text{V}$, $R_L=33\Omega$	I - II - III	MAX	3	5	mA
		IV		5	10	
V_{GT}		I - II - III - IV		1.3		V
V_{GD}	$V_D=V_{DRM}$	I - II - III - IV	MIN	0.2		V
I_H	$I_T=100\text{mA}$		MAX	5	7	mA
I_L	$I_G=1.2I_{GT}$	I - III - IV	MAX	5	5	mA
		II		10	20	
dV/dt	$V_D=0.66 \times V_{DRM}$ $T_j=125^{\circ}\text{C}$ Gate open		MIN	20	50	V/ μs

STATIC CHARACTERISTICS

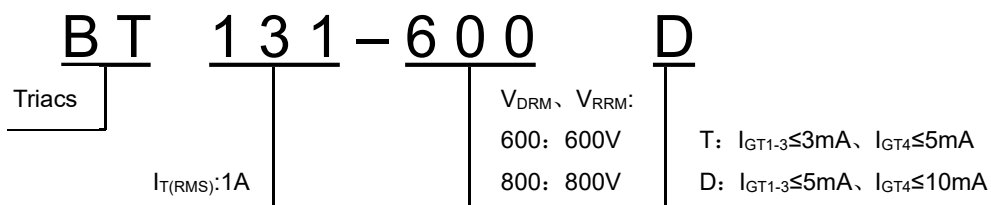
Symbol	Test Condition			Value	Unit
V_{TM}	$I_{TM}=1.4\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	MAX	1.5	V
I_{DRM} I_{RRM}	$V_{DRM}=V_{RRM}$	$T_j=25^{\circ}\text{C}$	MAX	5	μA
		$T_j=125^{\circ}\text{C}$		0.5	mA

THERMAL RESISTANCES

Symbol	Test Condition		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-92	60	$^{\circ}\text{C/W}$
		SOT-89/SOT-223 SOT-223-2L	31	$^{\circ}\text{C/W}$



ORDERING INFORMATION



Cycle Code

W D X Y

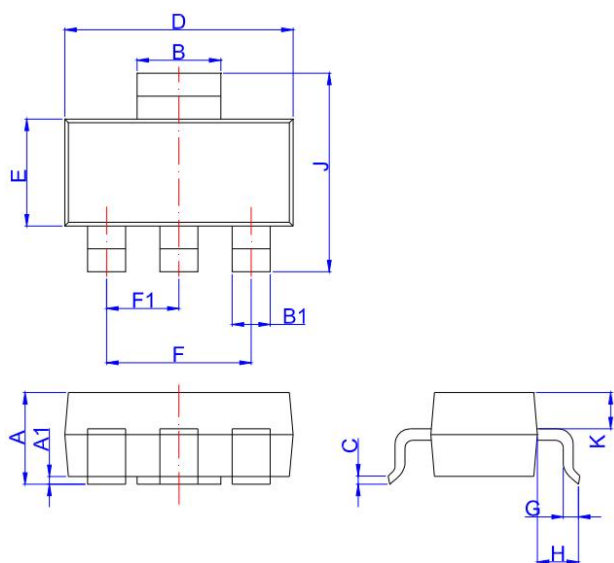
WD:WeiDa

X: year

ID	A	B	C	D	E	F	G	...
year	2018	2019	2020	2021	2022	2023	2024	...

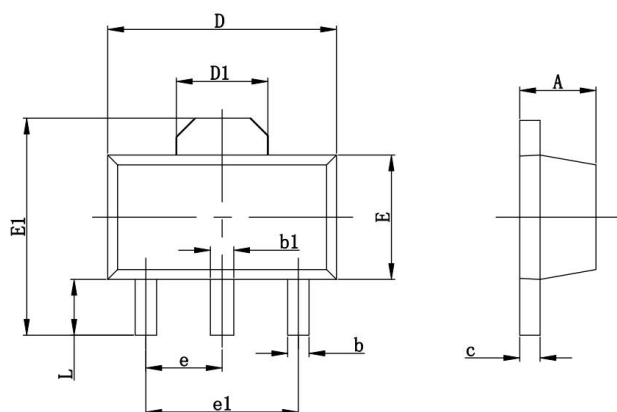
Y: Code

code	week		code	week		code	week		code	week
A	1		N	14		a	27		n	40
B	2		O	15		b	28		o	41
C	3		P	16		c	29		p	42
D	4		Q	17		d	30		q	43
E	5		R	18		e	31		r	44
F	6		S	19		f	32		s	45
G	7		T	20		g	33		t	46
H	8		U	21		h	34		u	47
I	9		V	22		i	35		v	48
J	10		W	23		j	36		w	49
K	11		X	24		k	37		x	50
L	12		Y	25		l	38		y	51
M	13		Z	26		m	39		z	52、53



SOT-223

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.5	1.6	1.8	0.059	0.063	0.071
A1	0.01	0.06	0.10	0.001	0.002	0.004
B	2.9	3.0	3.1	0.114	0.118	0.122
B1	0.6	0.7	0.8	0.024	0.028	0.031
C	0.22	0.25	0.32	0.009	0.010	0.013
D	6.3	6.5	6.7	0.248	0.256	0.264
E	3.3	3.5	3.7	0.130	0.138	0.146
F		4.6	6.8	0.252	0.181	
F1		2.3			0.091	
G	0.7	0.9	1.1	0.028	0.035	0.043
H	1.5	1.75	2.0	0.059	0.069	0.079
J	6.7	7.0	7.3	0.264	0.276	0.287
K	0.8	0.9	1.0	0.031	0.035	0.039



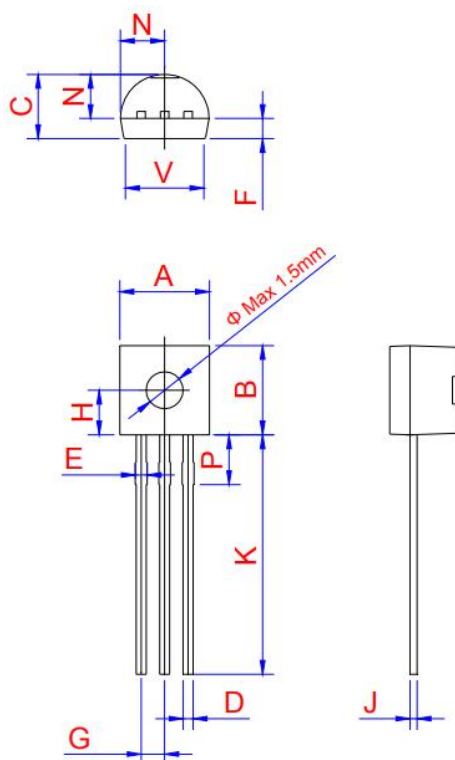
SOT-89-3L

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.4		1.6	0.055		0.063
b	0.35		0.52	0.013		0.197
b1	0.4		0.58	0.016		0.023
c	0.35		0.44	0.014		0.017
D	4.4		4.6	0.173		0.181
D1		1.55			0.061	
E	2.35		2.55	0.091		0.102
E1	3.94		4.25	0.155		0.167
e		1.500			0.060	
e1		3.000			0.118	
L	0.9		1.1	0.035		0.047



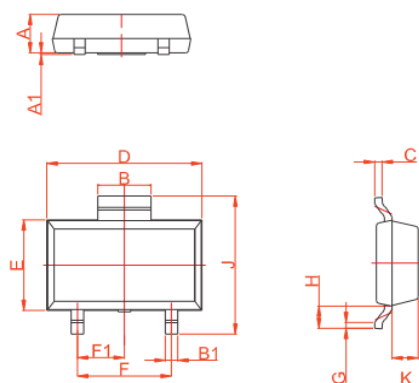
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BT131 Series 1A Triacs



TO-92

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.45	4.6	5.2	0.175	0.181	0.205
B	4.32	4.6	5.33	0.17	0.181	0.21
C	3.18	3.55	4.19	0.125	0.14	0.165
D	0.407		0.533	0.016		0.021
E	0.6		0.8	0.024	0	0.031
F	-	1.1	-	-	0.043	-
G	-	1.27	-	-	0.05	-
H	-	2.3	-	-	0.091	-
J	0.36	0.38	0.5	0.014	0.015	0.02
K	12.7		15	0.5		0.591
N	2.04	2.3	2.66	0.08	0.091	0.105
P	1.86		2.06	0.073		0.081
V	-		4.3	-		0.169



SOT-89-2L

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.3	1.4	1.5	0.051	0.055	0.059
A1	0.01	0.06	0.10	0.001	0.002	0.004
B	1.6	1.7	1.8	0.063	0.067	0.071
B1	0.3	0.4	0.5	0.012	0.016	0.020
C	0.22	0.254	0.32	0.009	0.010	0.013
D	4.75	4.95	5.15	0.187	0.195	0.203
E	2.75	2.95	3.15	0.108	0.116	0.124
F		3.0			0.118	
F1		1.5			0.059	
G	0.2	0.3	0.4	0.008	0.012	0.016
H	0.58	0.78	0.98	0.023	0.031	0.039
J	4.3	4.5	4.7	0.169	0.177	0.185
K		0.88			0.035	



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BT131 Series 1A Triacs

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

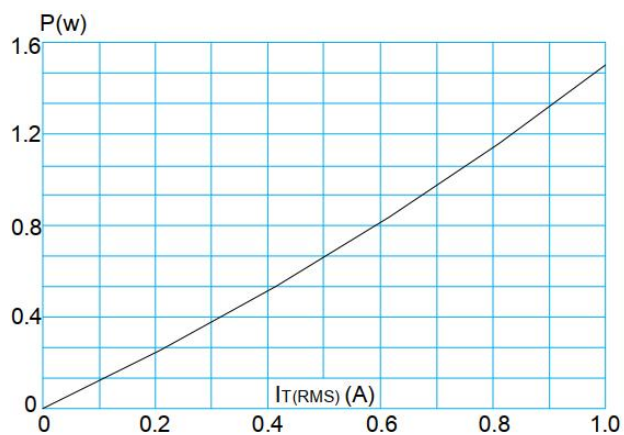


FIG.2: RMS on-state current versus case temperature

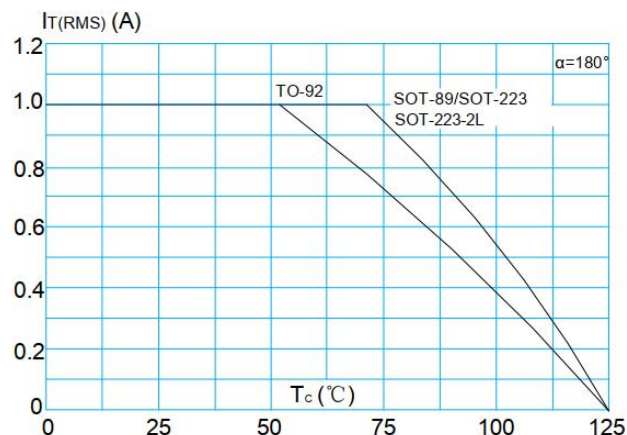


FIG.3: Surge peak on-state current versus number of cycles

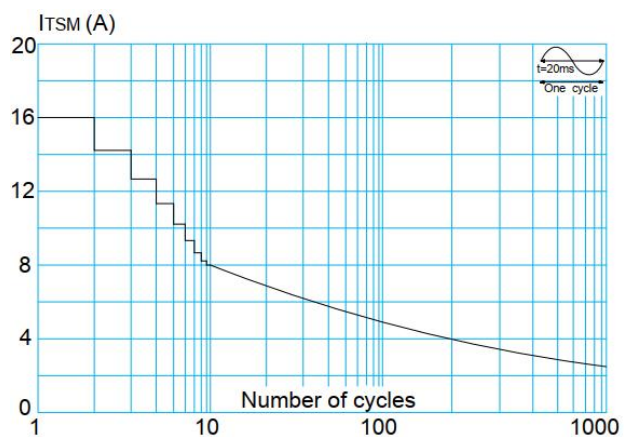


FIG.4: On-state characteristics (maximum values)

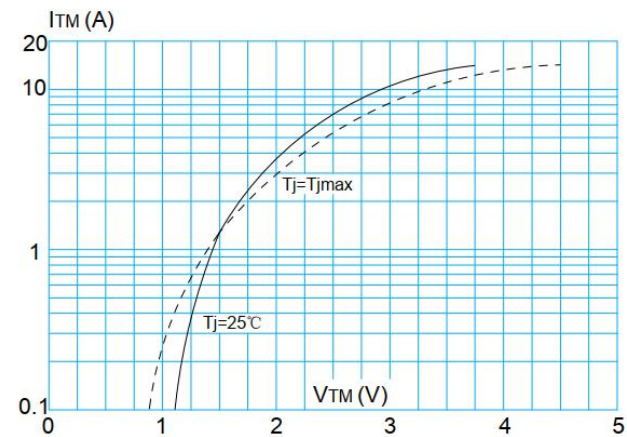


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of $I^2 t$ ($di/dt < 50A/\mu s$)

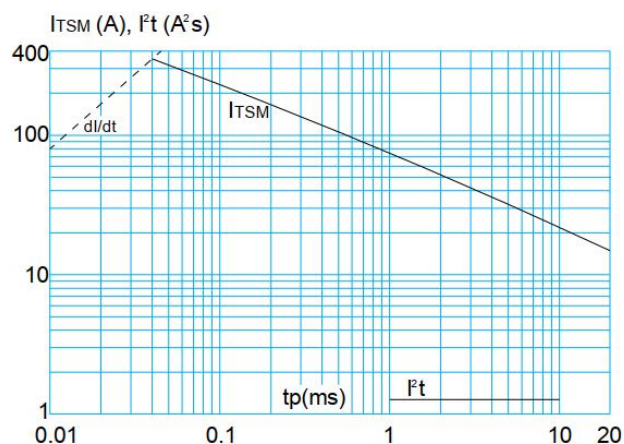
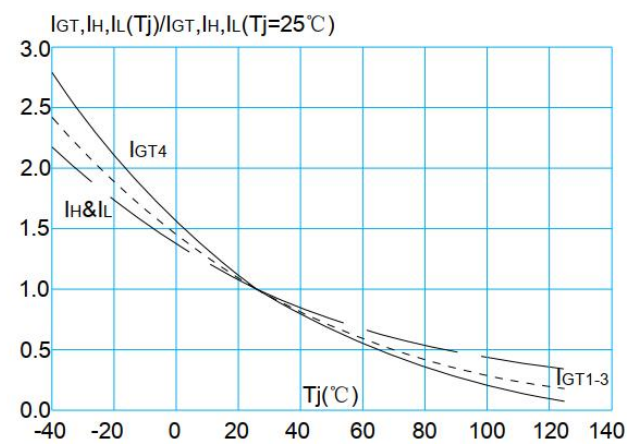


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature





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