



绍兴怡华电子科技有限公司

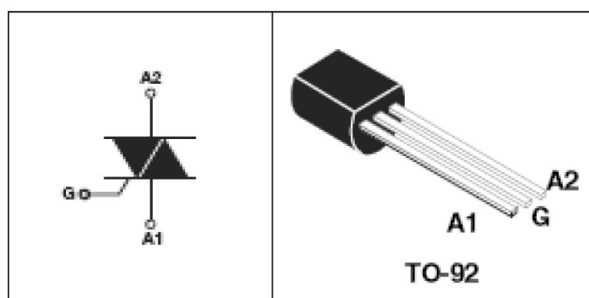
PART NAME: BT131

ISSUE DATE: 2010-01-08

Establishment: Carolyn

■ 主要特点:

符号	数值	单位
I_T (RMS)	1	A
V_{DRM}/V_{RRM}	600	V
I_{TSM}	16	A



■ 用途:

BT131 双向可控硅系列适用于一般交流开关电路,如:固态继电器,感应马达启动控制,调温控制,调光控制,调速控制...等.

■ 极限值:

符号	参数		数值	单位
$I_{T(RMS)}$	RMS 通态电流	$T_C=50^\circ C$	1	A
I_{TSM}	通态峰值浪涌电流	$F=50Hz, t=20ms$	16	A
I^2t	I^2t 耗散值	$T_P=10ms$	1.28	A^2s
di/dt	通态电流上升值	$I_{TM}=1.5A; I_G=0.2A$ $di_G/dt=0.2A/\mu s$	50	$A/\mu s$
I_{GM}	门极峰值电流	$TP=20\mu s, T_j=125^\circ C$	2	A
$P_{G(AV)}$	平均门极耗散功率	$T_j=125^\circ C$	0.5	W

Tstg	贮存结温范围	-40-+150	℃
Tj	工作结温范围	-40-+125	℃

■ 电特性

参数名称	符号	规范值	单位	测试条件	
触发电流	I_{GT}	≤ 3	mA	$V_D=12V, I_T=0.1A$	T2+G+
		≤ 3	mA		T2+G-
		≤ 3	mA		T2-G-
		≤ 7	mA		T2-G+
触发电压	V_{GT}	≤ 1.5	V	$V_D=12V, I_T=0.1A$	
维持电流	I_H	≤ 5	mA	$V_D=12V, I_T=0.1A$	
电压上升率	dv/dt	≥ 5	V/ μ S	$V_D=67\%V_{DRM}$	
通态压降	V_{TM}	≤ 1.5	V	$I_T=1.4A$	
断态漏电流	I_{DRM}	≤ 0.5	mA	$V_D=V_{DRM}, T_j=125^\circ C$	

■ 热阻:

符号	参数	数值	单位
Rth(j-c)	Junction to case(AC) full cycle	60	℃/W
Rth(j-a)	Junction to ambient pcb mounted; lead length=4mm	150	℃/W

■ 特性曲线:

Figure 1. Maximum power dissipation versus RMS on-state current (full cycle)

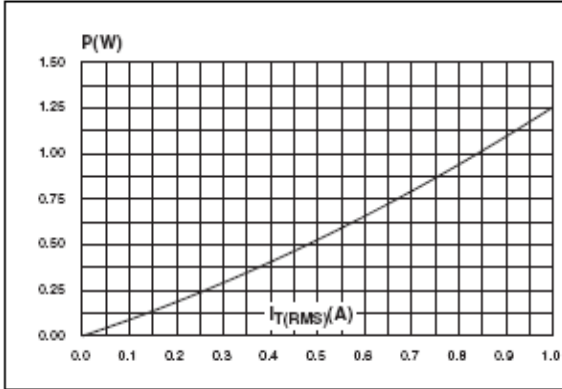


Figure 2. RMS on-state current versus ambient temperature (full cycle)

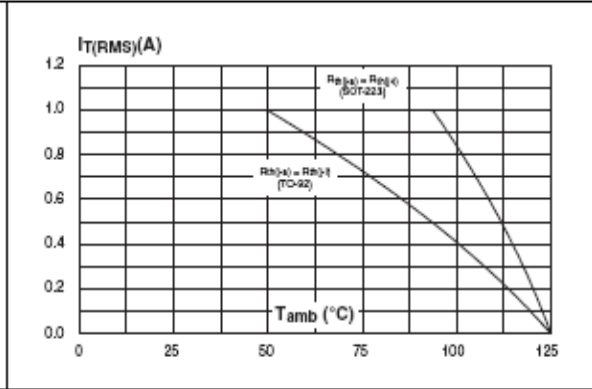


Figure 3. RMS on-state current versus ambient temperature (full cycle)

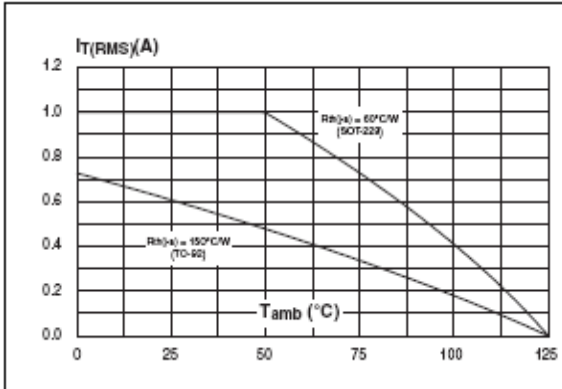


Figure 4. Relative variation of thermal impedance versus pulse duration

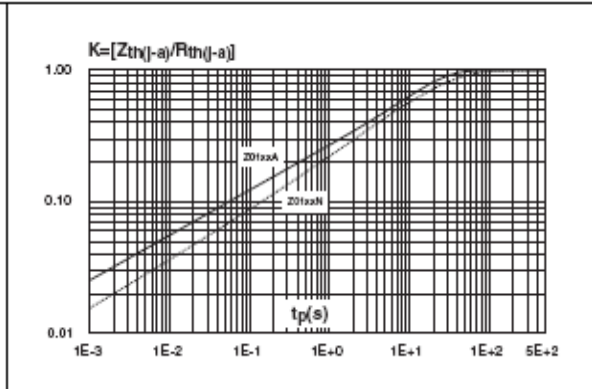


Figure 5. Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values)

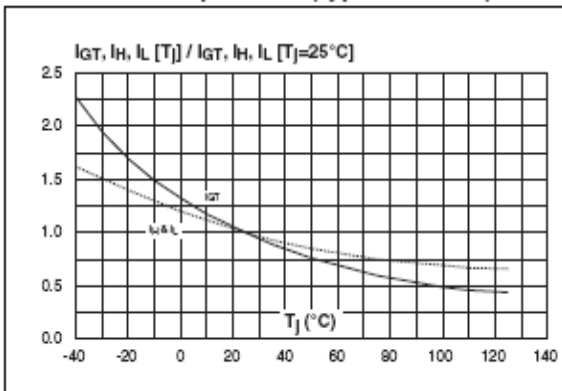
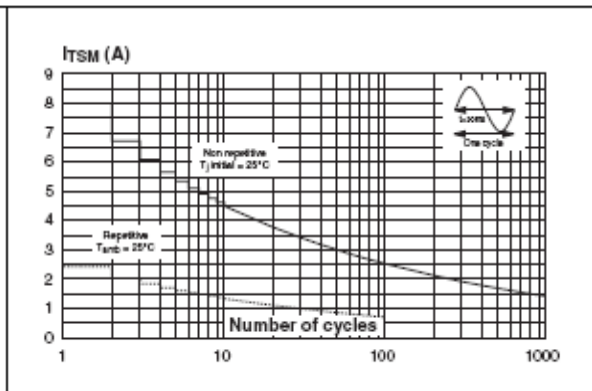


Figure 6. Surge peak on-state current versus number of cycles



■ 特性曲线:

Figure 7. Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10$ ms and corresponding value of I^2t

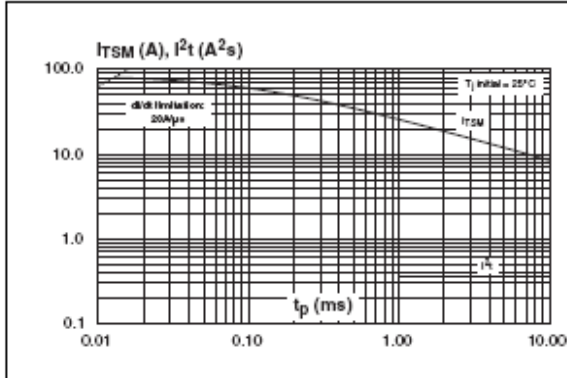


Figure 8. On-state characteristics (maximum values)

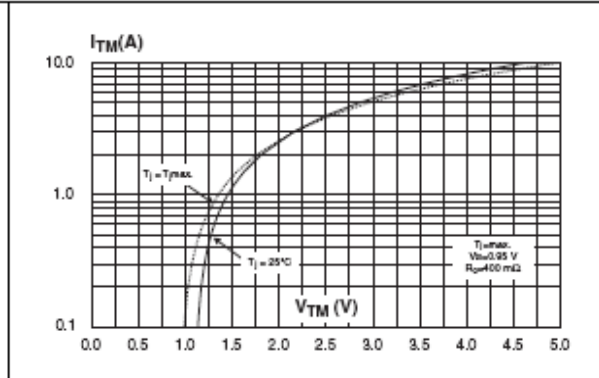


Figure 9. Relative variation of critical rate of decrease of main current versus $(dV/dt)_c$ (typical values)

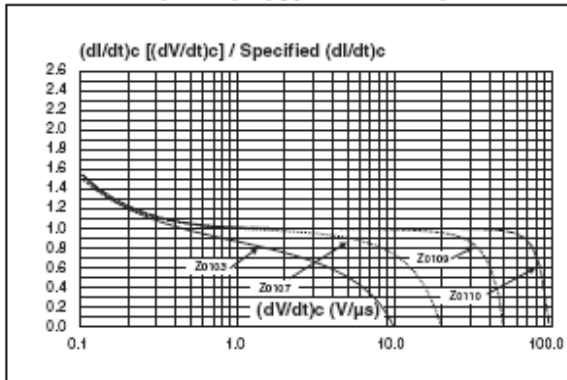


Figure 10. Relative variation of critical rate of decrease of main current versus junction temperature

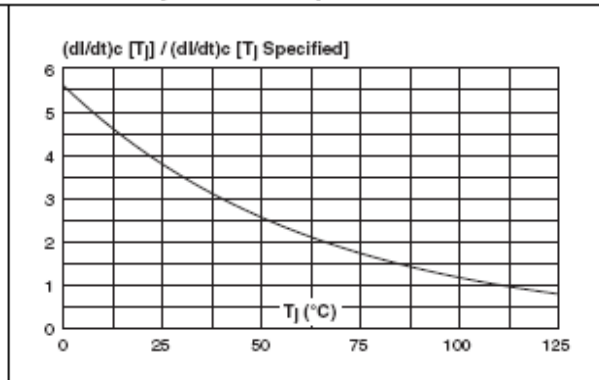
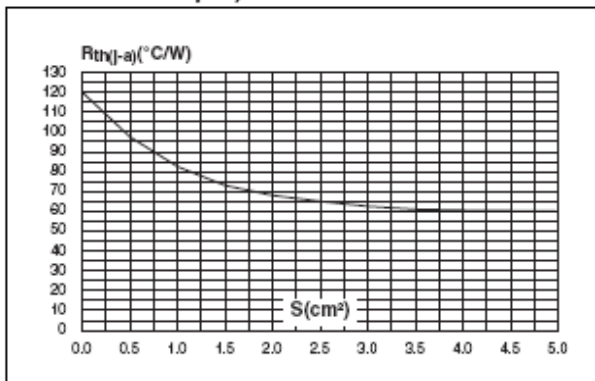


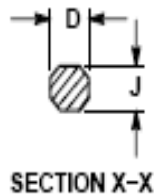
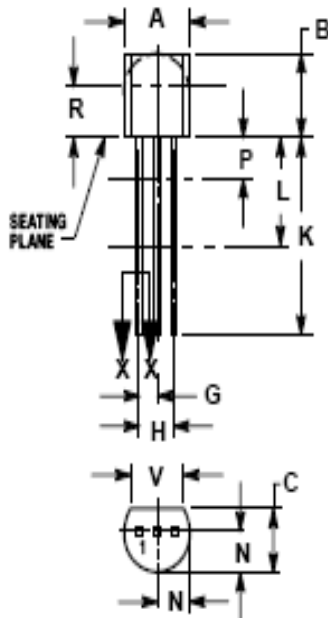
Figure 11. SOT-223 Thermal resistance junction to ambient versus copper surface under tab (printed circuit board FR4, copper thickness: 35 μm)



■ TO-92 外形尺寸

PACKAGE DIMENSIONS

TO-92 (TO-226AA)
CASE 029-11
ISSUE A1



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.175	0.205	4.45	5.20
B	0.170	0.210	4.32	5.33
C	0.125	0.165	3.18	4.19
D	0.016	0.021	0.407	0.533
G	0.045	0.055	1.15	1.39
H	0.095	0.105	2.42	2.66
J	0.015	0.030	0.38	0.76
K	0.500	---	12.70	---
L	0.290	---	7.35	---
N	0.080	0.105	2.04	2.66
P	---	0.100	---	2.54
R	0.115	---	2.93	---
V	0.195	---	4.93	---

STYLE 12:

1. MAIN TERMINAL 1
2. GATE
3. MAIN TERMINAL 2