

■ Product Model Reference & Naming 【产品型号参考及型号命名】

4-Quadrants TRIACs

四象限-非绝缘型-塑封 双向可控硅

1A	产品型号列表、種類區分、型号對應電壓值			I _{GT} I - II - III
	600V	800V	1000V	
TO-92	BT131-600	BT131-800	BT131-1000	≤3mA
	BT131-600D	BT131-800D	BT131-1000D	"D"≤5mA
	BT131-600E	BT131-800E	BT131-1000E	"E"≤10mA
TO-92编带	BT131-600A1	BT131-800A1	BT131-1000A1	≤3mA
	BT131-600DA1	BT131-800DA1	BT131-1000DA1	"D"≤5mA
	BT131-600EA1	BT131-800EA1	BT131-1000EA1	"E"≤10mA
SOT-89	BT131M-600	BT131M-800	BT131M-1000	≤3mA
	BT131M-600D	BT131M-800D	BT131M-1000D	"D"≤5mA
	BT131M-600E	BT131M-800E	BT131M-1000E	"E"≤10mA
SOT-223	BT131W-600	BT131W-800	BT131W-1000	≤3mA
	BT131W-600D	BT131W-800D	BT131W-1000D	"D"≤5mA
	BT131W-600E	BT131W-800E	BT131W-1000E	"E"≤10mA
	常規品種	高壓品種	未量产	

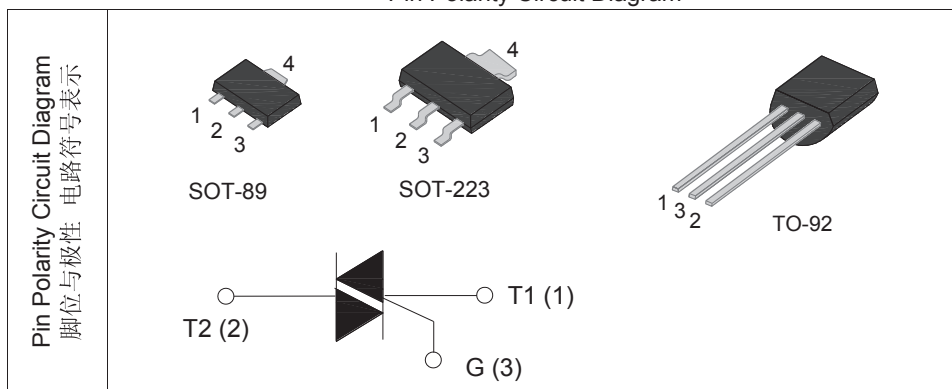
以常规电压品种供货，其他规格压电品种需订制。

H	BT	131	M	-	600	D	A1
↓	↓	↓	↓	↓	↓	↓	↓
HAOHAI ELECTRONICS CO.,LTD.	Bi-directional Triode 二端双向可控硅开关	131=1A 134=2A 136=4A 137=8A 138-12A 139=16AT	无字母:TO-92 M:SOT-89 W:SOT-223		600=600V 800=800V 1000=1000V	无字母≤3mA D≤5mA E≤10mA	TO-92 弯脚成型 编带包装

■ PINNING: Insulated Package

Symbol 对应极性	Description 极性含义
1	T1
2	T2
3	G
4	散热片

Pin Polarity Circuit Diagram



■ ABSOLUTE RATINGS (Limiting Values) & THERMAL RESISTANCES

SYMBOL	Signification in Symbol	Test Conditions	Value	Unit
$I_{T(RMS)}$	On-State RMS Current (full sine wave)	TO-92 ($T_C=51^{\circ}C$)	1	A
		SOT-89 / SOT-223 ($T_C=70^{\circ}C$)		
I_{TSM}	Non repetitive surge peak on-state current	$t_p=10ms$, $T_J=25^{\circ}C$	16	
I_{GM}	Forward Peak Gate Current	$t_p=10ms$, $T_J=25^{\circ}C$	2	
I^2t	Circuit Fusing Consideration	$t_p=10ms$, $T_J=25^{\circ}C$	0.80	A^2S
di/dt	Repetitive rate of rise of on-state current after triggering	$I_G=2 \times I_{GT}$	10	$A/\mu s$
V_{DRM} / V_{RRM}	Repetitive peak off-state voltages	参考型号对照列表	600/800	V
$P_{G(AV)}$	Average gate power dissipation	Over any 20 ms period	0.5	W
P_{GM}	Peak gate power	$t=2\mu s$ max.	5	
T_J	Operating Junction Temperature Range	Rate V_{RRM} & V_{DRM}	-40 ~ +125	$^{\circ}C$
T_{stg}	Storage Temperature Range	In Free Air	-40 ~ +150	
T_L	Max. Lead Temperature for Soldering Purposes 1/8	From Case for 5 Seconds	260	
$R_{th(j-c)}$	Junction to case (AC)	TO-92	60	$^{\circ}C/W$
		SOT-89、SOT-223	23	

■ 絕緣電阻特徵: ISOLATION LIMITING VALUE & CHARACTERISTIC ($T_{hs}=25^{\circ}C$ unless otherwise specified)

■ STATIC CHARACTERISTICS & DYNAMIC CHARACTERISTICS

SYMBOL	Paramenter & Test Conditions		--	D	E	Unit
I _{GT}	Gate Trigger Current V _D =12V, R _L =33Ω	I - II -III	3	5	10	mA
		IV	7	10	15	
I _L	Latching Current V _D =12V, R _L =33Ω	I -III	5	5	10	
		II -IV	8	10	20	
I _H	Holding Current	V _D =12V, I _T =200mA	5	5	7	
dV/dt	Critical Rate of Rise of Off-State Voltage	V _D =2/3V _{DRM} , T _J =125℃	≥10	≥20	≥50	
V _{GT}	Gate trigger voltage	V _D =12V, R _L =33Ω	≤1.5			V
V _{GD}	Gate Non-Trigger Voltage	V _D =V _{DRM} , R _L =3.3KΩ	≥0.2			
V _{TM}	Peak Forward On-State Voltage	I _T =1.4A, tp=380μS	≤1.7			
I _{DRM}	V _D =V _{DRM} , V _R =V _{RRM}	T _J =25℃	≤10			μA
I _{RRM}		T _J =125℃	≤500			

Electrical characteristics & Typical characteristics (电气特性与典型特征)

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

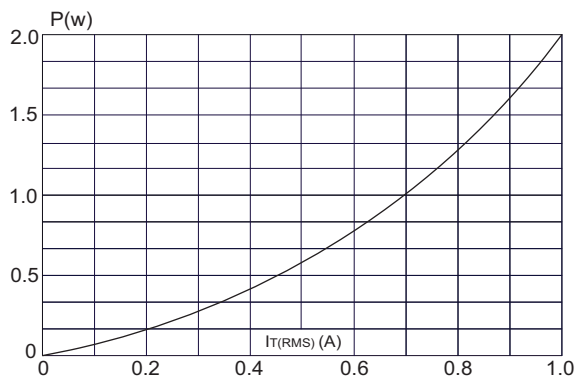


FIG.2: RMS on-state current versus case temperature

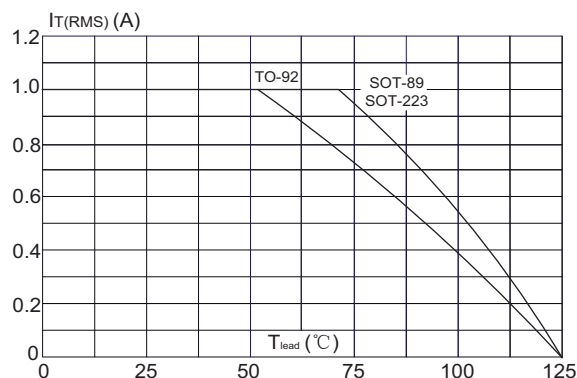


FIG.3: Surge peak on-state current versus number of cycles

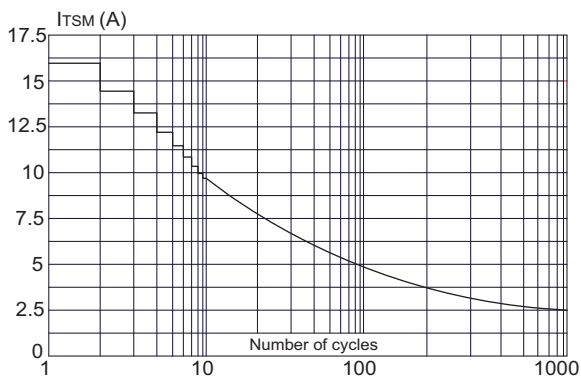


FIG.4: On-state characteristics (maximum values)

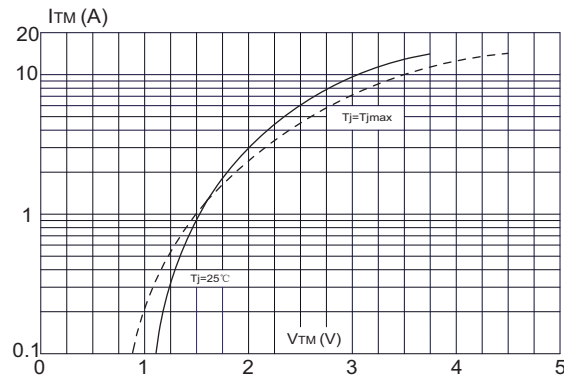


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$ and corresponding value of I^2t ($dI/dt < 10A/\mu S$)

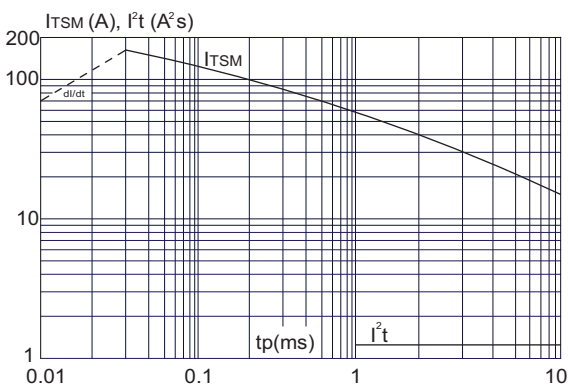
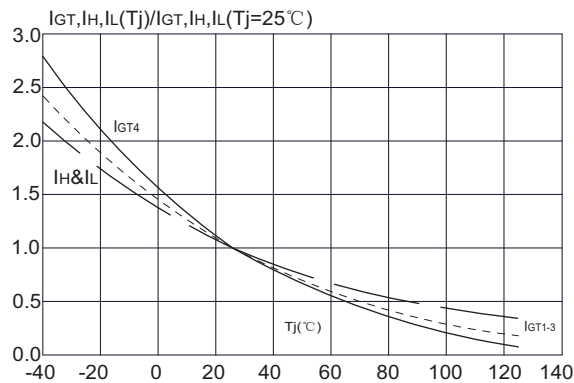


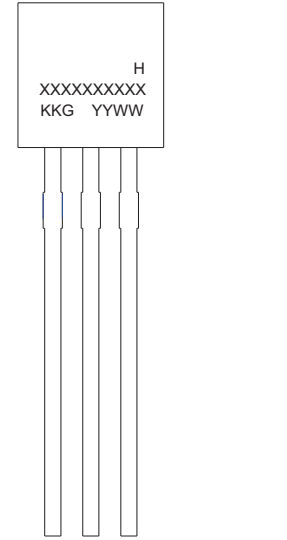
FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



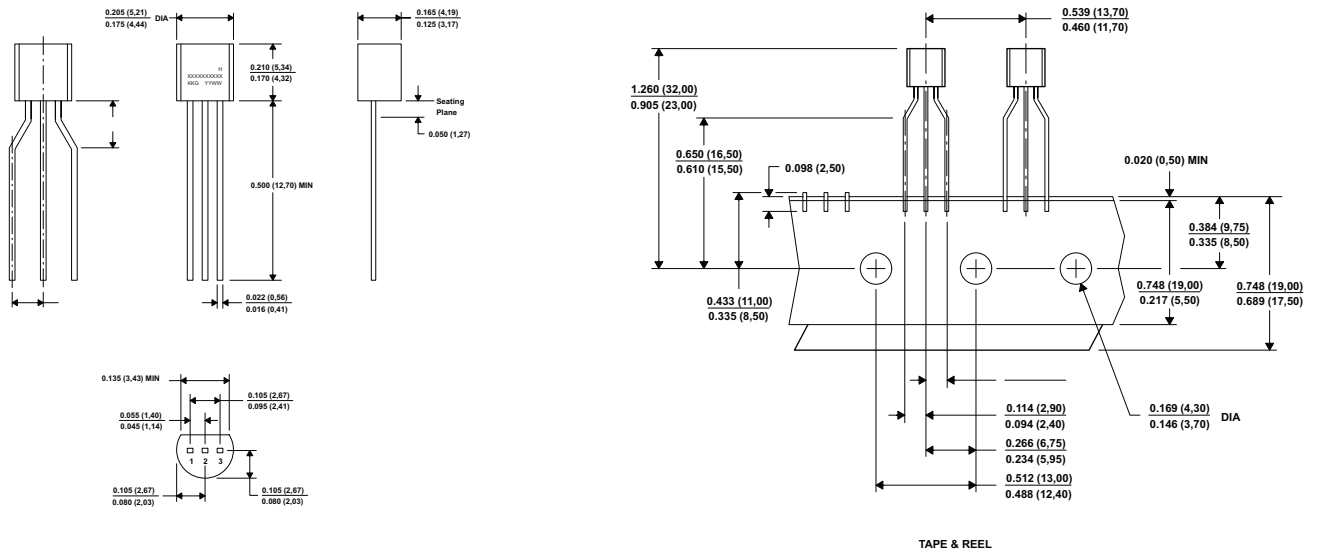
TO-92 PACKAGE MECHANICAL DATA (mm & in)

TO-92封装尺寸 (毫米与英寸对照)

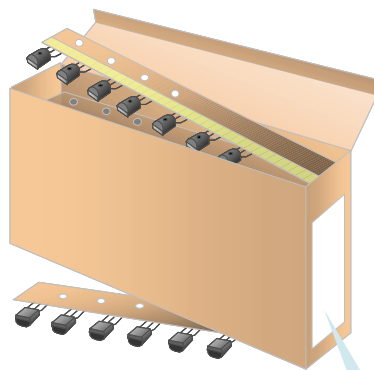
REF.	Dimensions			
	Millimeter		Inches	
	Min	Max	Min	Max
A	4.45	5.20	0.175	0.205
B	4.32	5.33	0.170	0.210
C	3.18	4.19	0.125	0.165
D	0.407	0.533	0.016	0.021
E	0.600	0.80	0.024	0.031
F	1.100 Typ.		0.043 Typ.	
G	1.270 Typ.		0.050 Typ.	
H	2.300 Typ.		0.091 Typ.	
J	0.36	0.500	0.014	0.020
K	12.70	15.00	0.500	0.591
N	2.04	2.66	0.080	0.105
P	1.86	2.06	0.073	0.081
V	--	4.30	--	0.169

	打印标识 H: 浩海电子 XXXXXXXXXX: 器件型号 KKG: 注册商标 YY: 出厂年份 WW: 出厂自然周 (01~53) Marking H: HAOHAI ELECTRONICS XXXXXXXXXX: Part Number KKG: Registered trademark YY: Factory Year WW: Factory natural Week (01~53)	包装规格 袋装、纸盒装 每袋1000只 每盒10000只 每箱100000只 Packaging Specifications Environmental protection Plastic bag packaging 1,000Pcs/Bag (1Kpcs) 10,000cs/BOX (10Kpcs) 100,000Pcs/Cartons (100Kpcs)
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3 PINS - PLASTIC PACKAGE TO-92 (TAPE AMMO PACK)
TO-92编带(管脚成型)封装及包装数据 PACKAGE MECHANICAL DATA

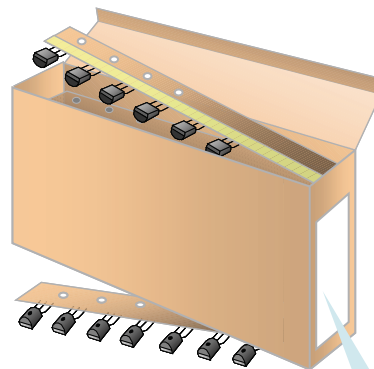


所有尺寸均为英寸（毫米）
All linear dimensions are in inches (millimeters)



2000Pcs/BOX

HAOHAI Label

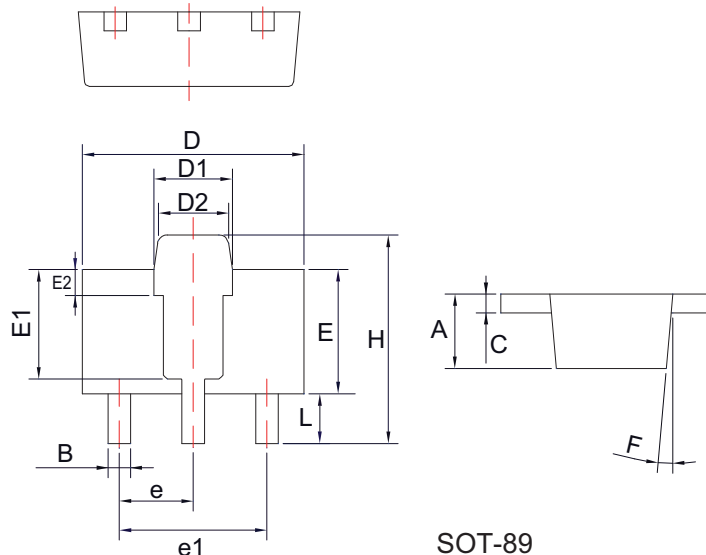


2000Pcs/BOX

HAOHAI Label

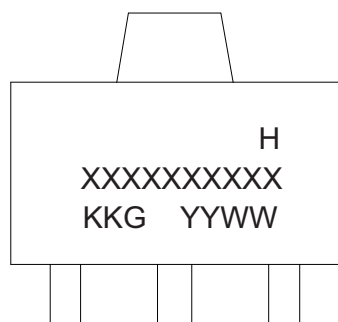
SOT-89 PACKAGE MECHANICAL DATA (mm & in)

SOT-89封装尺寸 (毫米与英寸对照)



SOT-89

REF.	Dimensions			
	Millimeter		Inches	
	Min	Max	Min	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 Typ.		0.087 Typ.	
E2	0.52 Typ.		0.020 Typ.	
e	1.50 Typ.		0.059 Typ.	
e1	3.00 Typ.		0.118 Typ.	
F	5°		5°	
H	3.94	4.00	0.155	0.157
L	0.80	1.20	0.031	0.047



打印标识

H: 浩海电子
XXXXXXXXXX: 器件型号
KKG: 注册商标
YY: 出厂年份
WW: 出厂自然周 (01~53)

Marking

H: HAOHAI ELECTRONICS
XXXXXXXXXX: Part Number
KKG: Registered trademark
YY: Factory Year
WW: Factory natural Week (01~53)

包装规格

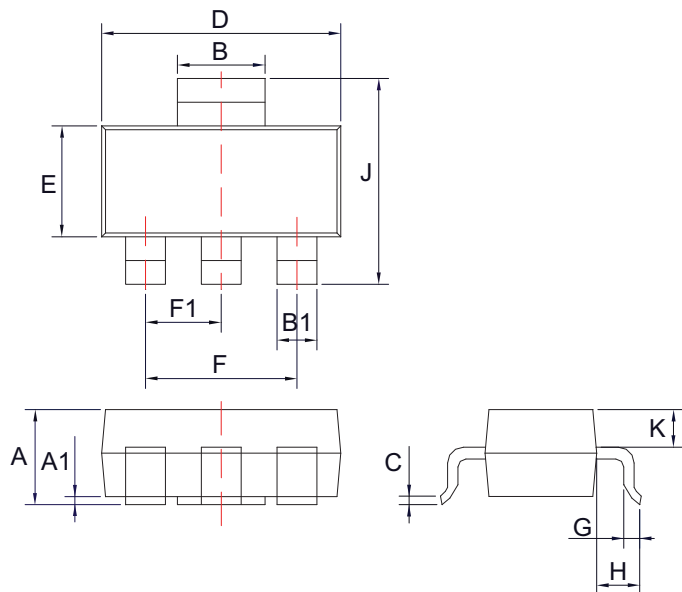
载带卷盘包装
每卷1000只
每盒10000只
每箱100000只

Packaging Specifications

Tape & Reel Packing
1,000Pcs/Reel (1Kpcs)
10,000cs/BOX (10Kpcs)
100,000Pcs/Cartons (100Kpcs)

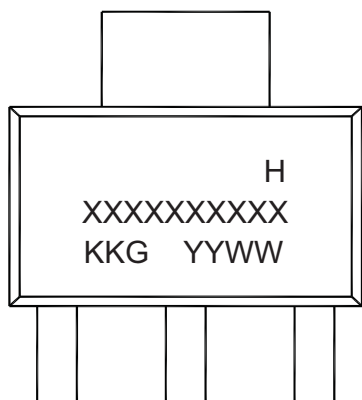
SOT-223 PACKAGE MECHANICAL DATA (mm & in)

SOT-223封装尺寸 (毫米与英寸对照)



SOT-223

REF.	Dimensions			
	Millimeter		Inches	
	Min	Max	Min	Max
A	1.50	1.80	0.059	0.071
A1	--	0.10	--	0.004
B	2.90	3.10	0.114	0.122
B1	0.60	0.80	0.024	0.031
C	0.22	0.32	0.009	0.013
D	6.30	6.70	0.248	0.264
E	3.30	3.70	0.130	0.146
F	4.60 Typ.		0.181 Typ.	
F1	2.30 Typ.		0.091 Typ.	
G	0.70	1.10	0.028	0.043
H	1.50	2.00	0.059	0.079
J	6.70	7.30	0.264	0.287
K	0.80	1.00	0.031	0.039



打印标识

H: 浩海电子
XXXXXXXXXX: 器件型号
KKG: 注册商标
YY: 出厂年份
WW: 出厂自然周 (01~53)

Marking

H: HAOHAI ELECTRONICS
XXXXXXXXXX: Part Number
KKG: Registered trademark
YY: Factory Year
WW: Factory natural Week (01~53)

包装规格

载带卷盘包装
每卷2500只
每盒5000只
每箱50000只

Packaging Specifications

Tape & Reel Packing
2,500Pcs/Reel (2.5Kpcs)
5,000cs/BOX (5Kpcs)
50,000Pcs/Cartons (100Kpcs)

Manufacturers version information

2006-09-01, KKG™ Product Data-1.0

2010-04-25, KKG™ Product Data-1.1

2013-12-10, KKG™ Product Data-1.2

2016-12-10, KKG™ Product Data-1.3



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