

DESCRIPTION

Sensitive gate triac in the TO-92 and SOT-223 (SMD) plastic package, intended for use in AC static switching and industrial control systems, driving low power highly inductive loads like solenoid, pump, fan, and micro-motor.

$dV/dt \geq 500V/\mu S$, high tolerance to external severe application environment such as EMC; High Voltage blocking capability

概况: HACT1_系列器件, 为过压保护交流开关、瞬态抑制型双向可控硅, 高 dV/dt 能力, 抗干扰能力强;

专门针对IEC61000-4-4电快速瞬变脉冲群抗扰度试验、IEC61000-4-5电涌抗干扰试验标准而开发设计。

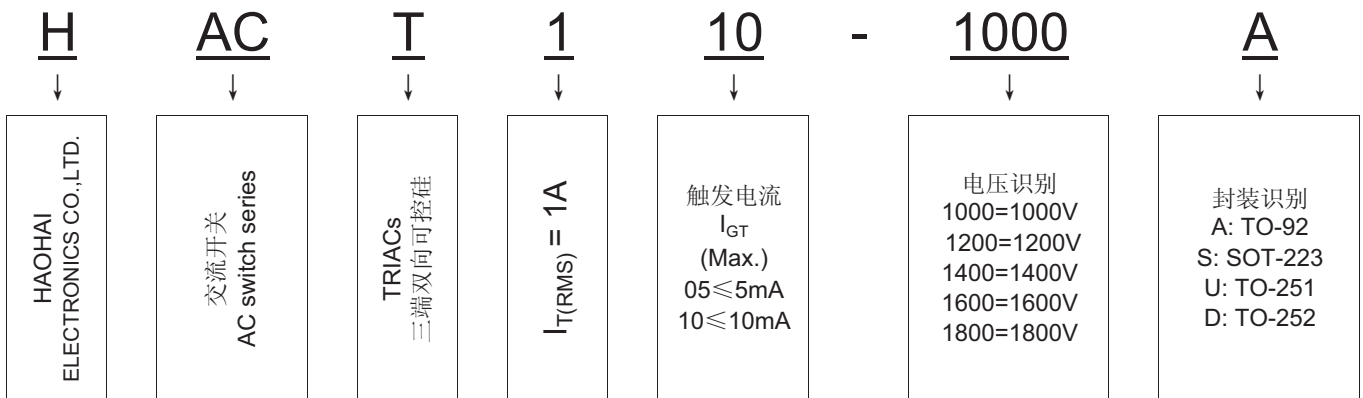
特点: 过压保护电路技术, 满足IEC61000-4-5浪涌电流; 高抗干扰防静电 dV/dt 技术; 无需外部保护缓冲电路, 无需压敏电阻; 减少了元件数量高达80%, 直接与微控制器的接口连接, 支持在相同的散热垫或几个交流电开关

应用: 交流电静态开关设备、工业控制系统开/关; 小功率驱动、高感性或阻性负载, 如: 继电器、阀门、电磁阀、饮水机、泵、风机、低功率电机、门锁、以及各种灯具; 空气清新器、雾化器、加湿器等小家电、白电产品驱动等控制电路。

封装形式: TO-92、SOT-223 (SMD)

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

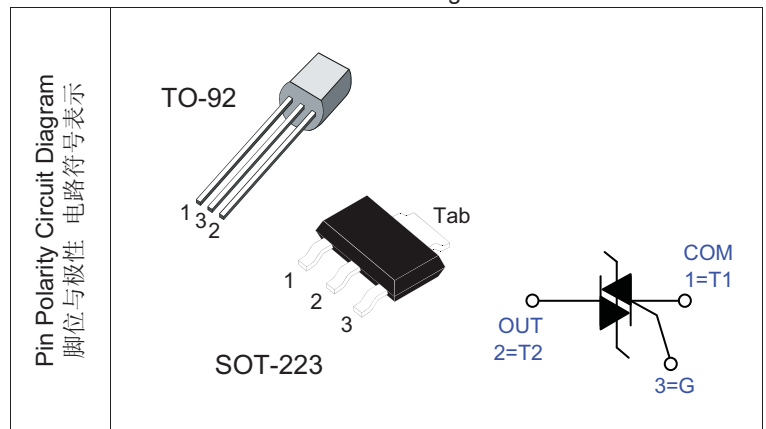
1A 过压保护 交流开关	产品型号列表、对应封装、型号对照电压值			
	1000V	1200V	1000V	1200V
TO-92	HACT105-1000A	HACT105-1200A	HACT110-1000A	HACT110-1200A
SOT-223	HACT105-1000S	HACT105-1200S	HACT110-1000S	HACT110-1200S
I_{GT}	$05 \leq 5mA$		$10 \leq 10mA$	



PINNING: TO-92 & SOT-223

Pin	Symbol	Description
1	T1	Common drive reference to connect to the mains
2	T2	Output to connect to the load.
3	G	Gate input to connect to the controller through gate resistor
4	Tab	OUT

Non Insulated Package: 4=2=Tab=OUT



■ ABSOLUTE MAXIMUM RATINGS

SYMBOL	Signification in Symbol	Test Conditions	Value	Unit
$I_{T(RMS)}$	RMS On-state Current (full sine wave)	$T_C=57^\circ C$	1	A
I_{TSM}	Non Repetitive Surge Peak on-state Current (One Full cycle, Sine Wave, $T_J=25^\circ C$)	$f=50Hz, tp=10mS$	10	
		$f=60Hz, tp=8.3mS$	11	
I_{GM}	Peak Gate Current	$tp \leq 2\mu s, T_J=125^\circ C$	1	
I^2t	I^2t Value for Fusing Consideration	$tp=10mS, T_J=25^\circ C$	1.12	A^2ses
V_{DRM}	Repetitive peak off-state Voltages	HACT1xxx-1000 $T_J=25^\circ C$	1000	V
		HACT1xxx-1200 $T_J=25^\circ C$	1200	
V_{RRM}	Repetitive peak Reverse Voltages	HACT1xxx-1000 $T_J=25^\circ C$	1000	
		HACT1xxx-1200 $T_J=25^\circ C$	1200	
V_{DSM}	Non Repetitive Surge peak off-state Voltages	$T_J=25^\circ C$	$V_{DRM}+100$	
V_{RSM}	Non Repetitive peak Reverse Voltages	$T_J=25^\circ C$	$V_{RRM}+100$	
$P_{G(AV)}$	Average gate power dissipation	$tp=20\mu s, T_J=125^\circ C$	0.2	W
P_{GM}	Peak gate power	$tp=20\mu s, T_J=125^\circ C$	1	
T_J	Operating Junction Temperature Range		-40 ~ +125	$^\circ C$
T_{stg}	Storage Junction Temperature Range		-40 ~ +150	
$R_{th(j-c)}$	Junction to Case (AC)	TO-92	60	$^\circ C/W$
		SOT-223	40	

■ 绝缘电阻特征: ISOLATION LIMITING VALUE & CHARACTERISTIC ($T_{hs}=25^\circ C$ unless otherwise specified)

■ STATIC CHARACTERISTICS

SYMBOL	Parameter & Test Conditions		Quadrant	HACT105	HACT110	Unit
I_{GT}	$V_D=12V, R_L=30\Omega$	Max.	T2+ G+	3	6	mA
			T2+ G-	5	10	
			T2- G-	5	10	
I_H	$I_T=100mA$	Max.	ALL	10	20	mA
I_L	$I_G=1.2 I_{GT}$	Max.	T2+ G+	15	25	
			T2+ G-	25	35	
			T2- G-	15	25	
dV/dt	$V_D=2/3V_{DRM}$ gate open	Min.	$T_J=125^\circ C$	400	600	$V/\mu s$
V_{GT}	$V_D=12V, R_L=30\Omega$	Max.	T2+ G+	1.4	1.5	V
			T2+ G-	1.4	1.5	
			T2- G-	1.4	1.5	
V_{GD}	$V_D=2/3V_{DRM}, R_L=3.3K\Omega, T_J=125^\circ C$	Min.	ALL	0.2		
V_{TM}	$I_{TM}=1.4A, tp=380\mu s$	Max.	$T_J=25^\circ C$	1.5		
I_{DRM}	$V_D=V_{DRM}$	Max.	$T_J=25^\circ C$	10		μA
			$T_J=125^\circ C$	500		
I_{RRM}	$V_R=V_{RRM}$	Max.	$T_J=25^\circ C$	10		μA
			$T_J=125^\circ C$	500		

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

Fig. 1: Maximum average power dissipation versus average on-state current.

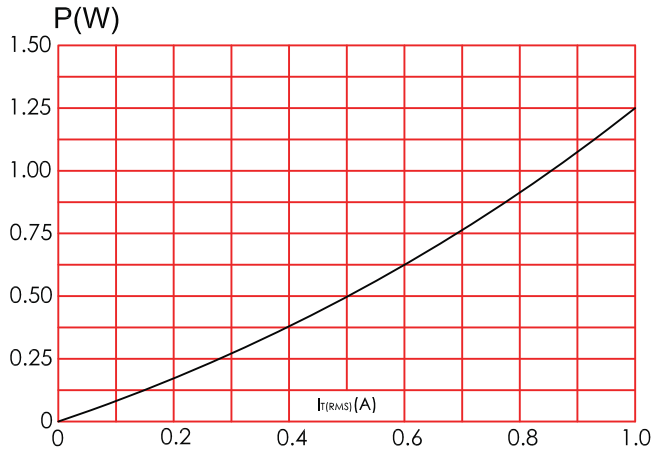


Fig. 2: RMS on-state current versus case temperature(full cycle).

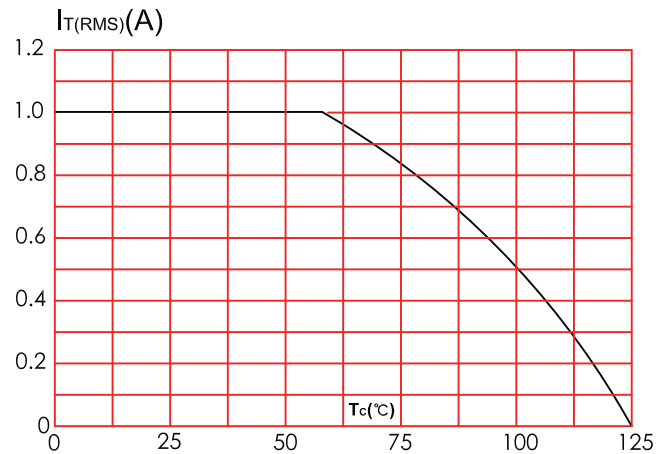


Fig.3: On-state characteristics (typical and maximum values).

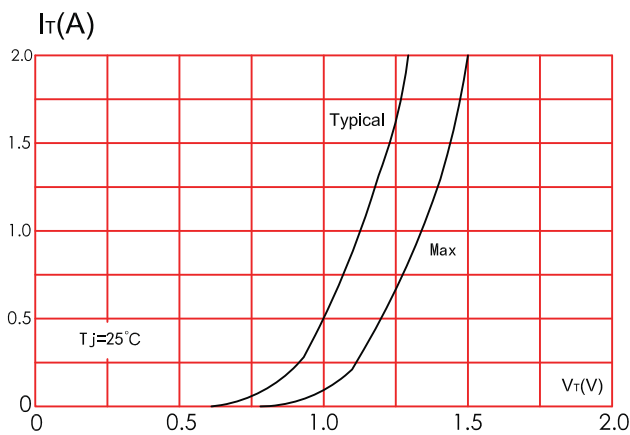


Fig. 4: Non-repetitive surge peak on-state current versus number of cycles

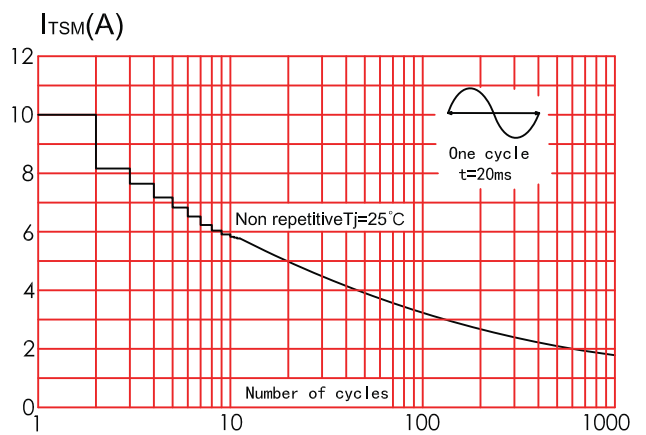


FIG5: Relative variations of gate trigger current versus junction temperature(typical values)

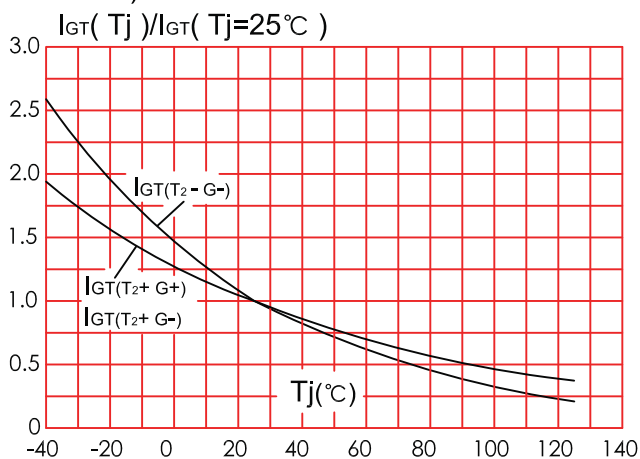
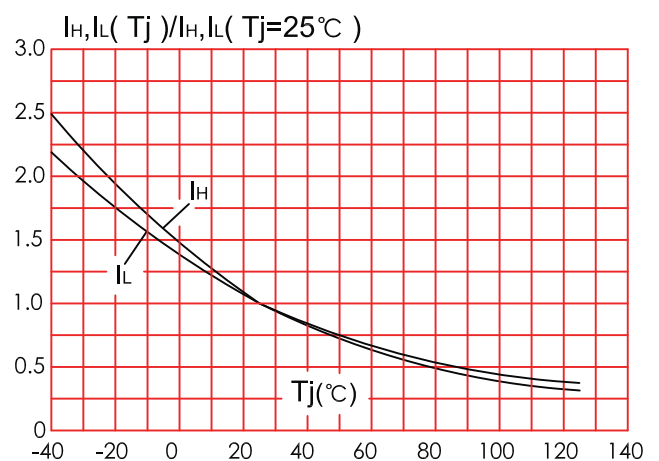
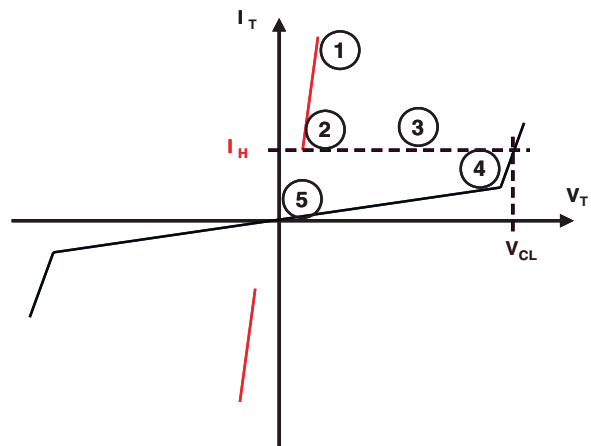
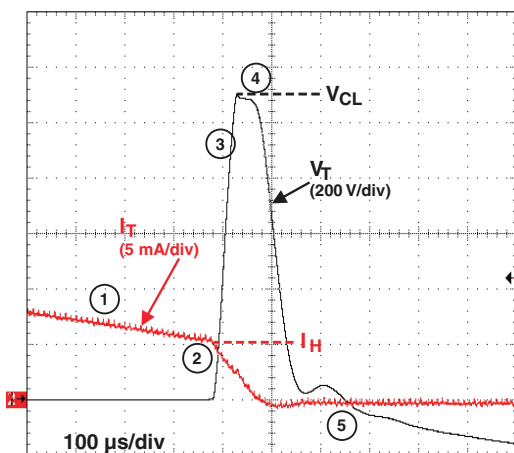
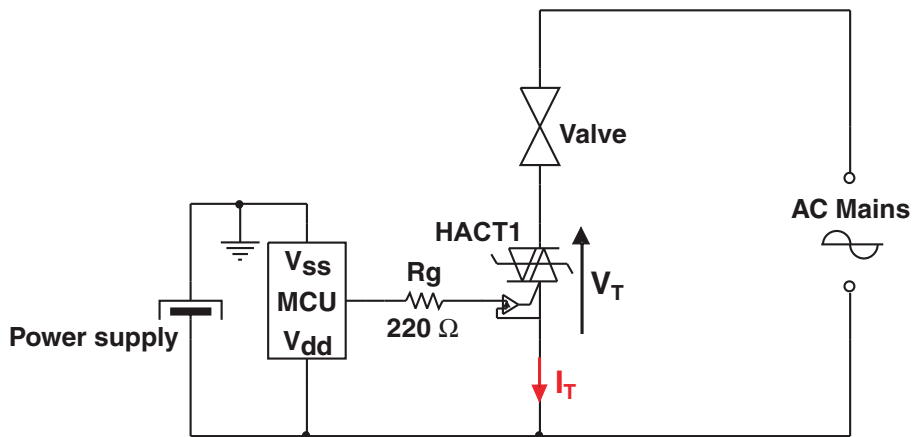
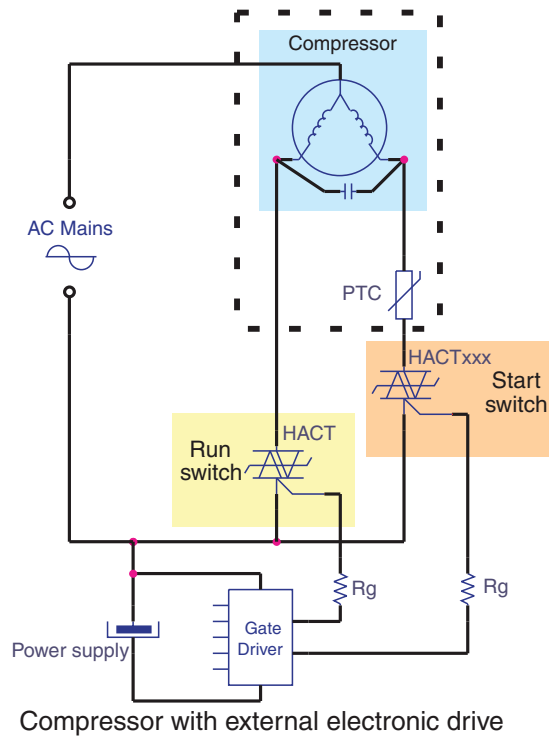
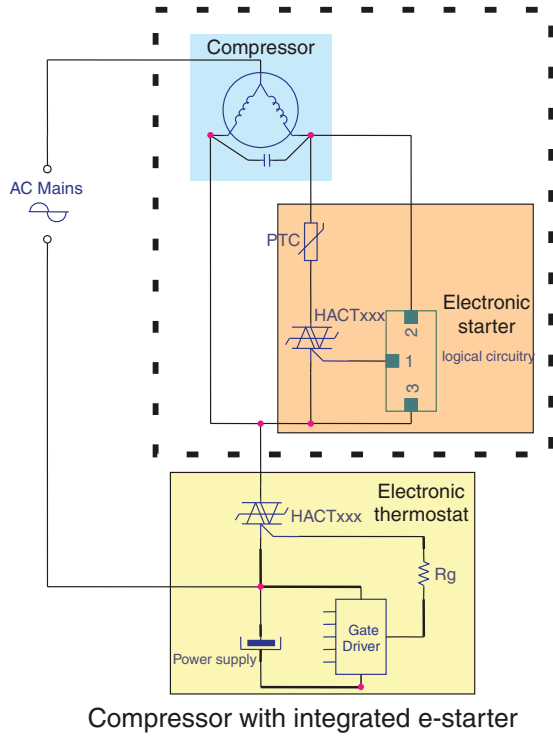
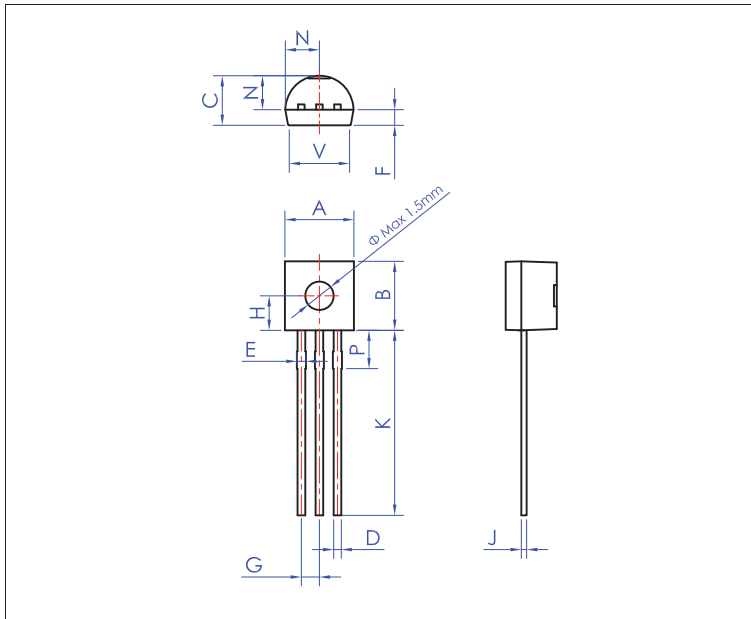


FIG6: Relative variations of holding current and latching current versus junction temperature(typical values)

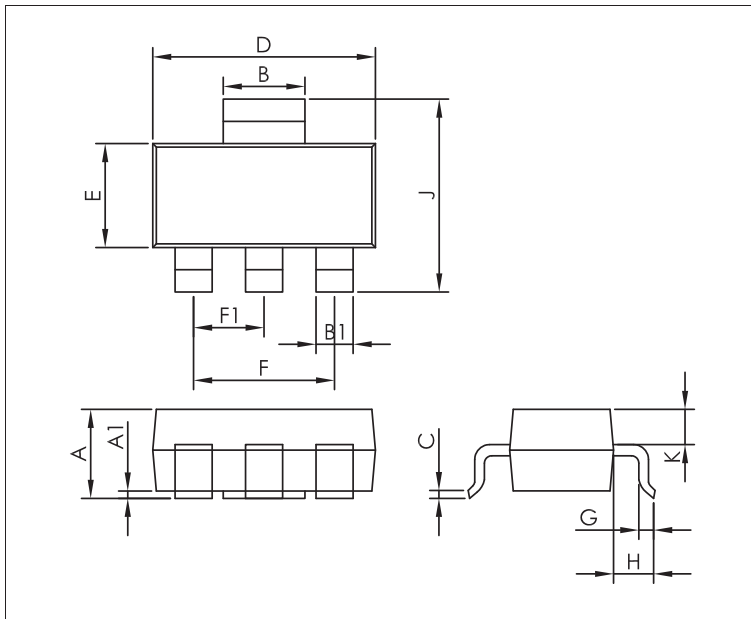




PACKAGE MECHANICAL DATA (mm & inch) 封装尺寸数据 (毫米与英寸对照)



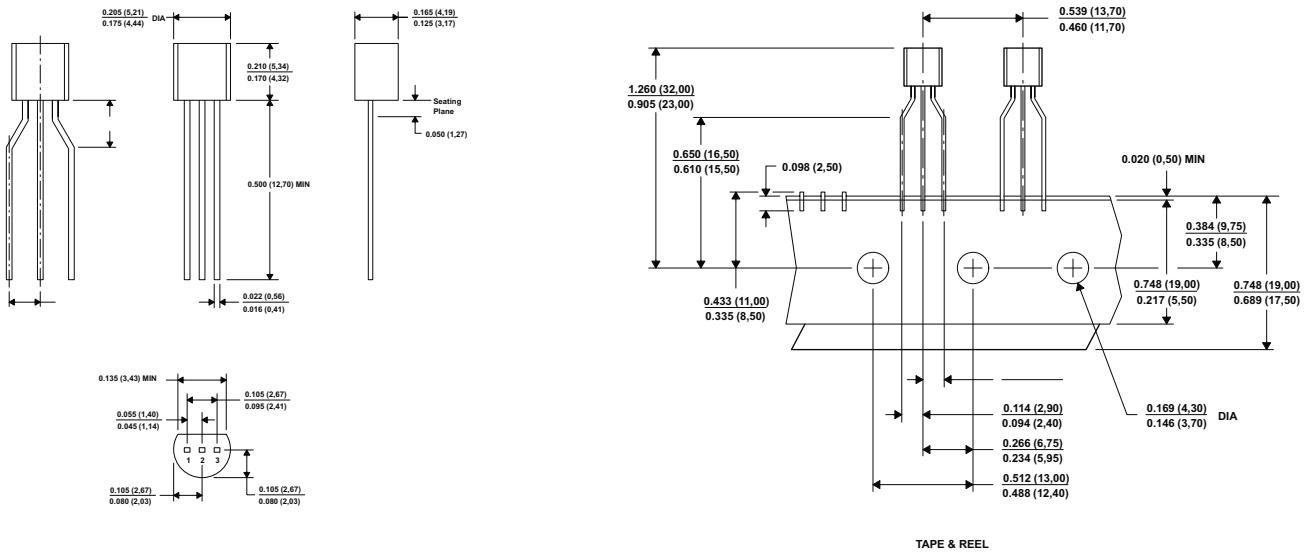
REF	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.45	5.20	0.175	0.205
B	4.32	5.33	0.170	0.210
C	3.18	4.19	0.125	0.165
D	0.407	0.533	0.016	0.021
E	0.60	0.80	0.024	0.031
F	1.10		0.043	
G	1.27		0.050	
H	2.30		0.091	
J	0.36	0.50	0.014	0.020
K	12.7	15.0	0.500	0.591
N	2.04	2.66	0.080	0.105
P	1.86	2.06	0.073	0.081
V		4.30		0.169



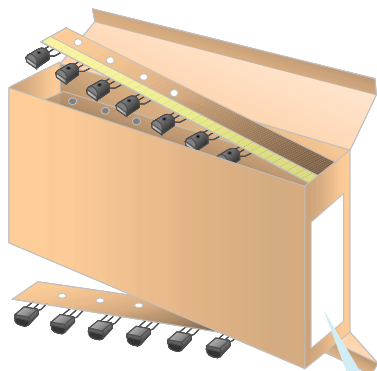
REF	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.50	1.80	0.059	0.071
A1	0.01	0.10	0.001	0.004
B	2.90	3.10	0.114	0.122
B1	0.60	0.80	0.024	0.031
C	0.22	0.32	0.009	0.013
D	6.30	6.70	0.248	0.264
E	3.30	3.70	0.130	0.146
F	4.60		0.181	
F1	2.30		0.091	
G	0.70	1.10	0.028	0.043
H	1.50	2.00	0.059	0.079
J	6.70	7.30	0.264	0.287
K	0.90		0.035	

<p>TO-92</p>	<p>SOT-223</p>	<p>打印标识 H: 浩海电子 XXXXXXXXXX: 器件型号 KKG: 注册商标 aa: 出厂年份 bb: 出厂自然周 (01~53) Marking H: HAOHAI ELECTRONICS XXXXXXXXXX: Part Number KKG: Registered trademark aa: Factory Year bb: Factory natural Week bb: (01~53)</p>	<p>包装规格 TO-92: 袋装, 纸盒装 每包1000只, 每盒10000只, 每箱100000只 TO-92管脚成型编带: 盒装, 每盒2000只, 每箱20000只 SOT-223: 载带卷盘包装 每卷2500只, 每盒5000只 Packaging Specifications TO-92: Plastic packaging, 1Kpcs/Bag 100Kpcs/BOX, 100Kpcs/Cartons TO-92 TAPE AMMO PACK: 2Kpcs/BOX, 20Kpcs/Cartons SOT-223: Tape & Reel Packing 2500Pcs/Reel, 5000Pcs/BOX</p>
--------------	----------------	---	--

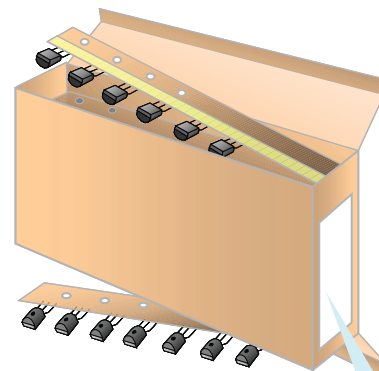
3 PINS - PLASTIC PACKAGE TO-92 (TAPE AMMO PACK)
TO-92编带(管脚成型)封装及包装数据 PACKAGE MECHANICAL DATA



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



2000Pcs/BOX



2000Pcs/BOX

HAOHAI Label

HAOHAI Label



经中华人民共和国工商行政管理总局商标局批准
KKG 图案、字母、均为我公司正式注册商标，仿冒、盗用均属侵权，违法必究！
WARN, Letters, patterns, are officially registered my trademark counterfeiting, theft are all violations, violators will be held liable !

深圳市浩海电子有限公司

SHENZHEN HAOHAI ELECTRONICS CO., LTD.

2 floor(whole floor), BAOXIN Building, 0 Lane on the 8th, Yufeng Garden,
82 District, BAOAN District, Shenzhen City, Guangdong Province, China.

公司电话 TEL: +86-755-29955080、29955081、29955082、29955083
总机八线 29955090、29955091、29955092、29955093

FAX: +86-755-27801767

E-mail: kkg@kkg.com.cn

产品主页: <http://www.szhhe.com>

<http://www.kkg.com.cn>