

■ DESCRIPTION

HCR03AM series which use the specific design to achieve high Voltage blocking capability, Less-Temp dependent, high reliability and stability performance, thus have high tolerance to external severe application environment such as EMC, Temp fluctuation etc are widely used in leakage protection application.

■ 特点

具有较高的正/反向电压阻断能力；较好的温度特性；抗干扰能力强；高可靠性和稳定性能；减少温度依赖

■ 应用

广泛应用于漏电保护电路

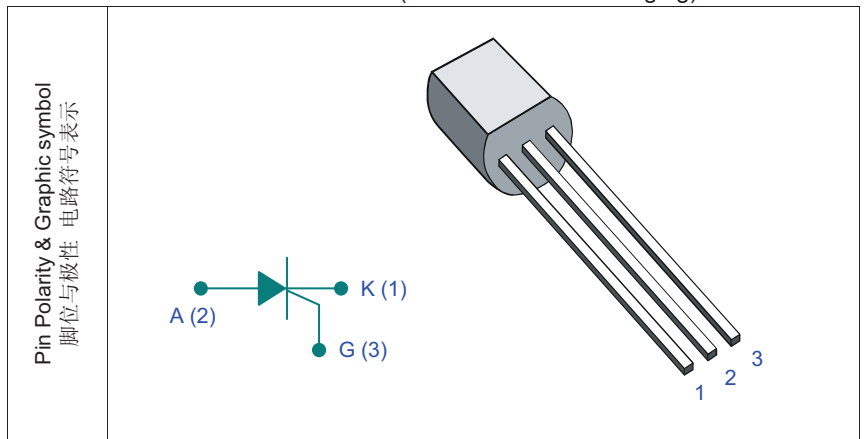
■ 代替型号

CR03AM-8-A, CR03AM-8-B, CR03AM-8-C, CR03AM-12-A, CR03AM-12-B, CR03AM-12-C

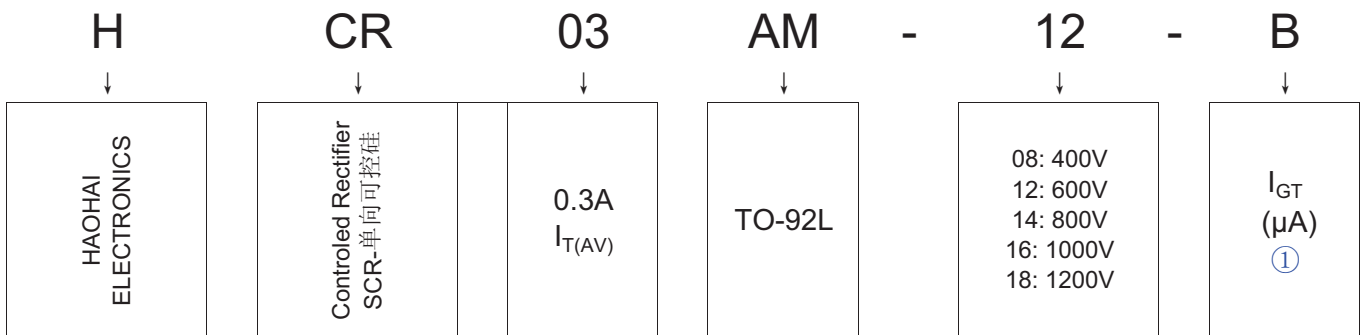
■ PINNING: Insulated Package

Pin in Symbol and Description			
1	K	Cathode	阴极
2	A	Anode	阳极
3	G	Gate	控制极
4		Tab	散热片

TO-92L (3-Leads Plastic Packaging)



■ Product naming & Ordering information



■  $I_{GT}$  Class 触发电流分段 ①

Item	A	B	C	D	E	F	Unit
$I_{GT}$	10~30	20~50	30~80	10~50	50~100	1~200	$\mu A$

■ ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Repetitive Peak Off-state Voltage ( $T_j=25^\circ\text{C}$ ) Repetitive Peak Reverse Voltage ( $T_j=25^\circ\text{C}$ )	HCR03AM-12	$V_{\text{DRM}}$ $V_{\text{RRM}}$	600	V
	HCR03AM-14		800	
	HCR03AM-16		1000	
	HCR03AM-18		1200	
Non repetitive Surge Pake Off-state Voltage	$T_j=25^\circ\text{C}$	$V_{\text{DSM}}$	$V_{\text{DRM}} + 100$	
Non repetitive Pake Reverse Voltage	$T_j=25^\circ\text{C}$	$V_{\text{RSM}}$	$V_{\text{RRM}} + 100$	
RMS on-state current (full sine wave)	$T_c=47^\circ\text{C}$	$I_{\text{T(RMS)}}$	0.47	A
Average on-state current (half sine cycle)	$T_c=47^\circ\text{C}$	$I_{\text{T(AV)}}$	0.3	
Non repetitive surge peak on-state current (half Full Cycle, $T_j=25^\circ\text{C}$ )	f=50Hz, t=10ms	$I_{\text{TSM}}$	19	
	f=60Hz, t=8.3ms		20	
Peak gate current	tp=20 $\mu\text{s}$ , $T_j=110^\circ\text{C}$	$I_{\text{GM}}$	0.3	
$I^2t$ Value for fusing	tp=10ms	$I^2t$	1.6	A <sup>2</sup> S
Average gate power dissipation	$T_j=110^\circ\text{C}$	$P_{\text{G(AV)}}$	0.1	W
Peak gate current	tp=20 $\mu\text{s}$ , $T_j=110^\circ\text{C}$	$P_{\text{GM}}$	0.5	
Operrating junction temperature range		$T_j$	-40 to +115	$^\circ\text{C}$
Storage junction temperature range		$T_{\text{stg}}$	-40 to +150	

■ ELECTRICAL CHARACTERISTICS ( $T_j=25^\circ\text{C}$  unless otherwise specified)

Symbol	Test Condition	HCR03AM			Unit
		Min.	Typ.	Max.	
$I_{\text{GT}}$	$V_{\text{D}}=6\text{V}$ , $R_{\text{L}}=100\Omega$	10	--	140	$\mu\text{A}$
$V_{\text{GT}}$		--	0.6	0.8	V
$V_{\text{GD}}$	$V_{\text{D}}=V_{\text{DRM}}$ , $R_{\text{L}}=3.3\text{K}\Omega$ , $R_{\text{GK}}=1\text{K}\Omega$ , $T_j=125^\circ\text{C}$	0.2	--	--	
$I_{\text{L}}$	$I_{\text{G}}=1\text{mA}$ , $R_{\text{GK}}=1\text{K}\Omega$	--	--	5	mA
$I_{\text{H}}$	$I_{\text{T}}=50\text{mA}$ , $R_{\text{GK}}=1\text{K}\Omega$	--	--	3	
$V_{\text{TM}}$	$I_{\text{T}}=3\text{A}$ , tp=380 $\mu\text{s}$ ( $T_j=25^\circ\text{C}$ )	--	--	1.7	V
dV/dt	$V_{\text{D}}=60\%V_{\text{DRM}}$ , $R_{\text{GK}}=1\text{K}\Omega$ , $T_j=110^\circ\text{C}$	50	100	--	V/ $\mu\text{S}$
$I_{\text{DRM}}$	$V_{\text{D}}=V_{\text{DRM}}$ , $R_{\text{GK}}=1\text{K}\Omega$ , $T_j=25^\circ\text{C}$	--	--	5	$\mu\text{A}$
	$V_{\text{D}}=V_{\text{DRM}}$ , $R_{\text{GK}}=1\text{K}\Omega$ , $T_j=110^\circ\text{C}$	--	--	0.2	mA
$I_{\text{RRM}}$	$V_{\text{DR}}=V_{\text{RRM}}$ , $R_{\text{GK}}=1\text{K}\Omega$ , $T_j=25^\circ\text{C}$	--	--	0.5	$\mu\text{A}$
	$V_{\text{DR}}=V_{\text{RRM}}$ , $R_{\text{GK}}=1\text{K}\Omega$ , $T_j=110^\circ\text{C}$	--	--	0.2	mA

■ THERMAL RESISTANCES

Symbol	Parameter	Package	Value	Unit
$R_{\text{th(J-C)}}$	Junction to Case	TO-92	70	$^\circ\text{C/W}$
$R_{\text{th(J-A)}}$	Junction to Ambient	TO-92	180	

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

FIG.1: Maximum power dissipation versus average on-state current(half cycle)

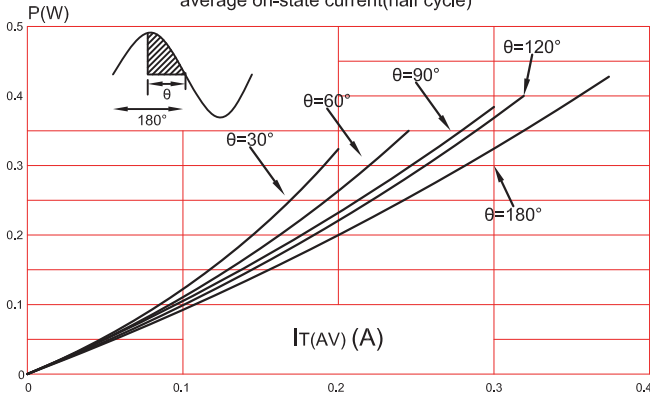


FIG.2: RMS on-state current versus case temperature(full cycle)

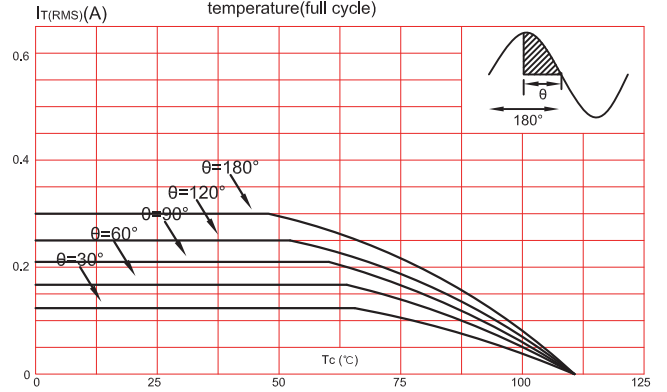


FIG.3: On-state characteristics (maximum values).

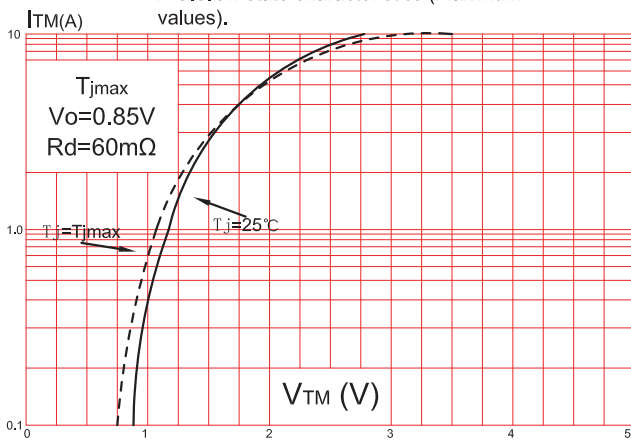


FIG.4: Surge peak on-state current versus number of cycles.

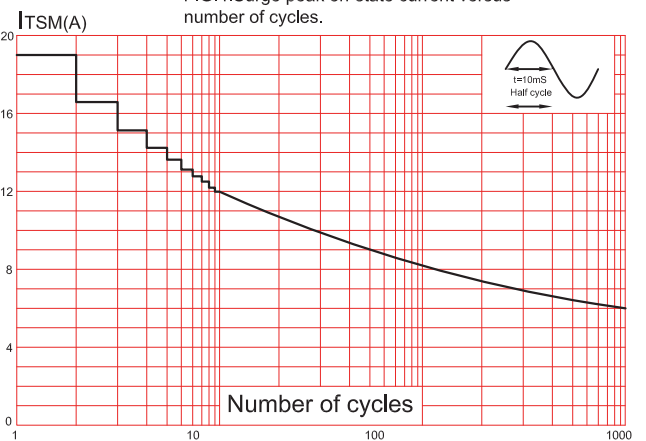


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10ms$ , and corresponding value of  $I^2t$ .

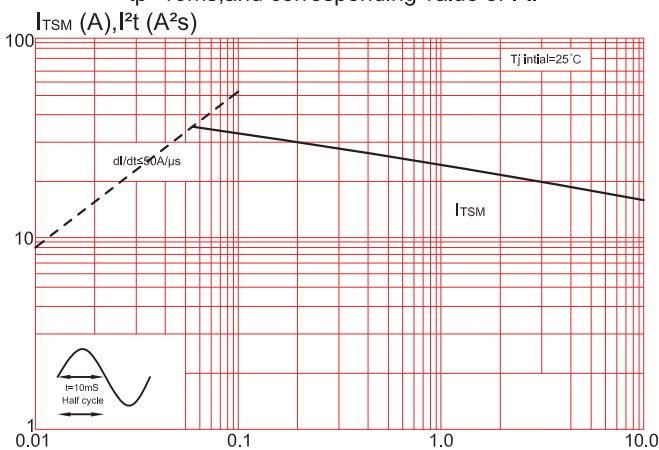
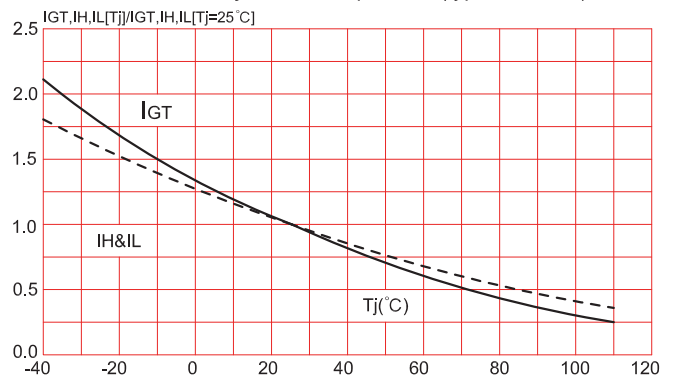
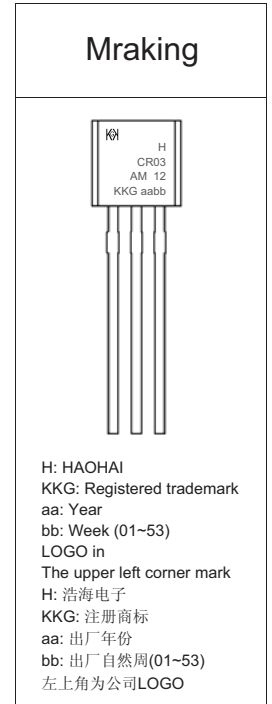
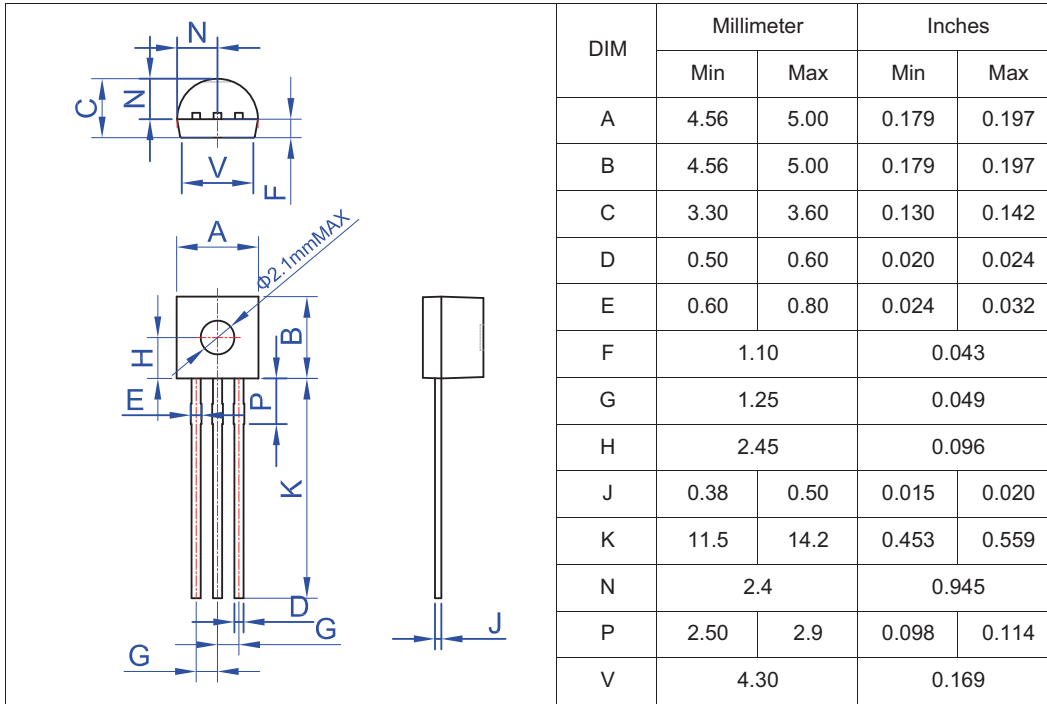


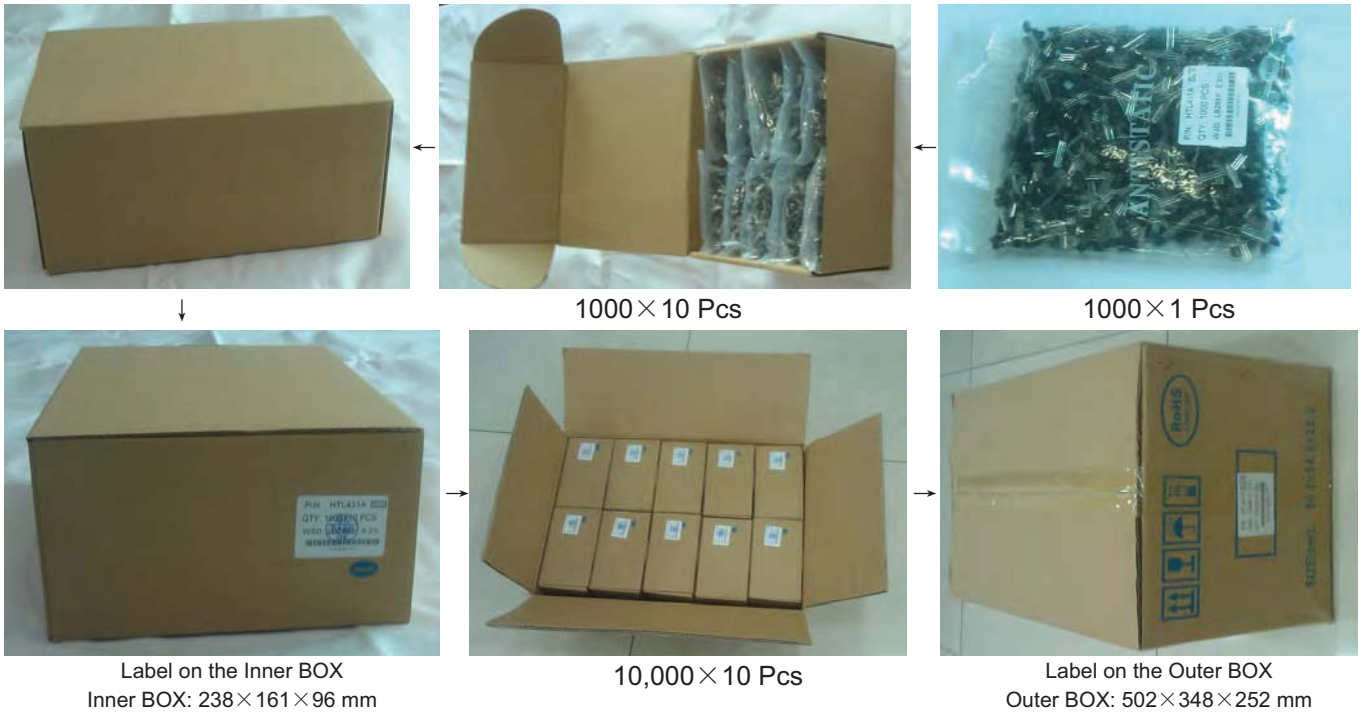
FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



TO-92L PACKAGE MECHANICAL DATA



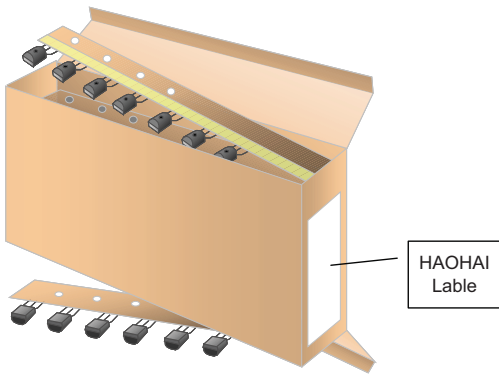
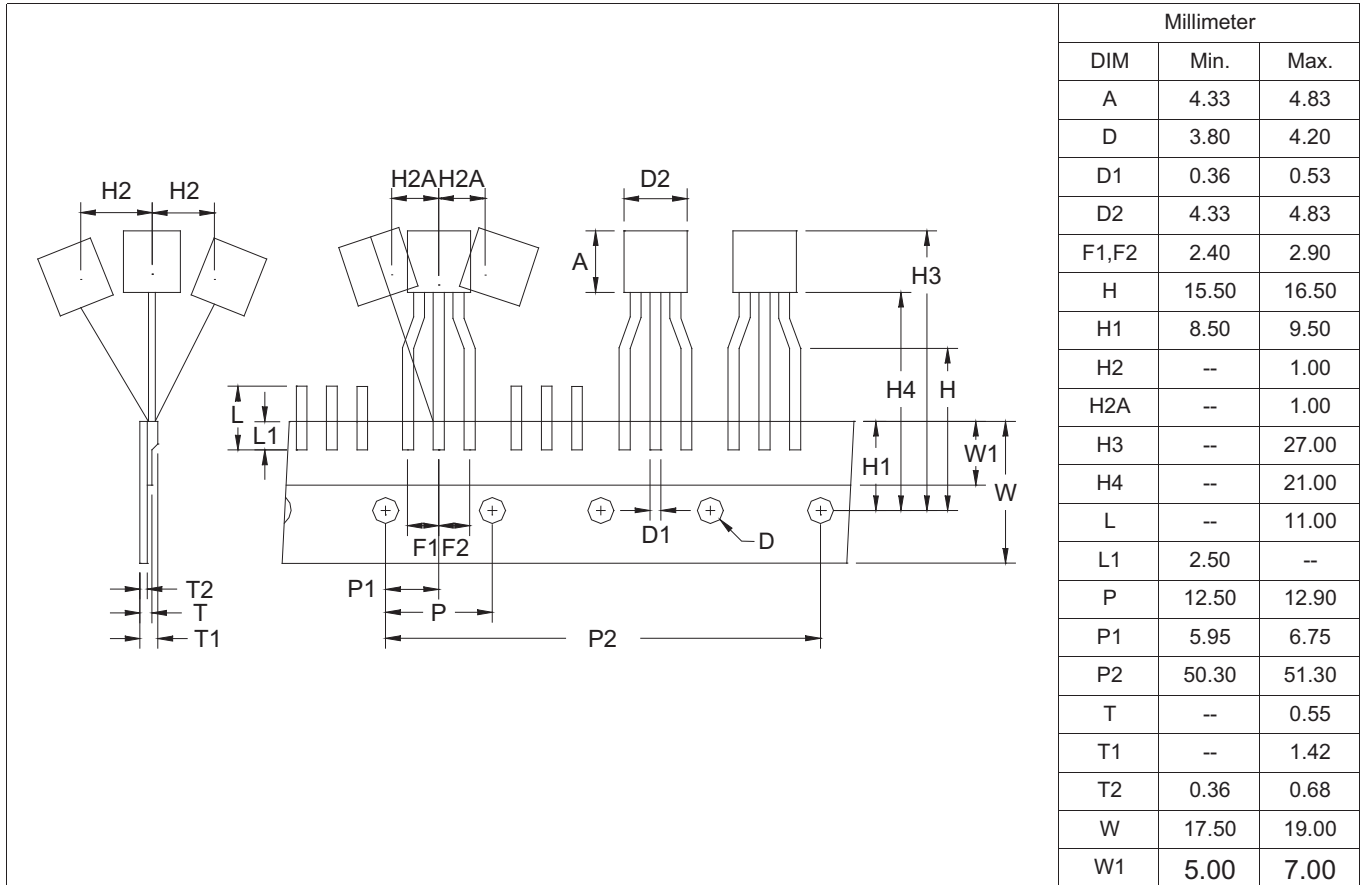
TO-92L 产品装箱规格 Packaging Specifications



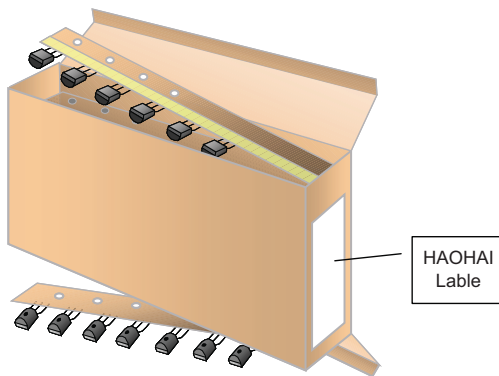
■ Packaging Specifications (包装数量、包装规格、装箱规格、包装尺寸数据)

REF.	TO-9L (TO-92CR)		
	Bag (包)	BOX (盒)	Carton (箱)
QTY (数量)	1,000 Pcs (1Kpcs)	10,000 Pcs (10Kpcs)	100,000 Pcs (100Kpcs)
Size (尺寸) mm			
G.W. (重量)			

TO-92L TAPE AMMO PACK PACKAGE MECHANICAL DATA (TO-92编带尺寸, 单位:mm)



2000Pcs/BOX



2000Pcs/BOX

■ Packaging Specifications (包装数量、包装规格、装箱规格、包装尺寸数据)

REF.	TO-9L (TO-92CR) TAPE AMMO PACK (TO-92编带盒装)		
		BOX (盒)	Carton (箱)
QTY (数量)		2,000 Pcs (2Kpcs)	20,000 Pcs (20Kpcs)
Size (尺寸) mm			
G.W. (重量)			



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