

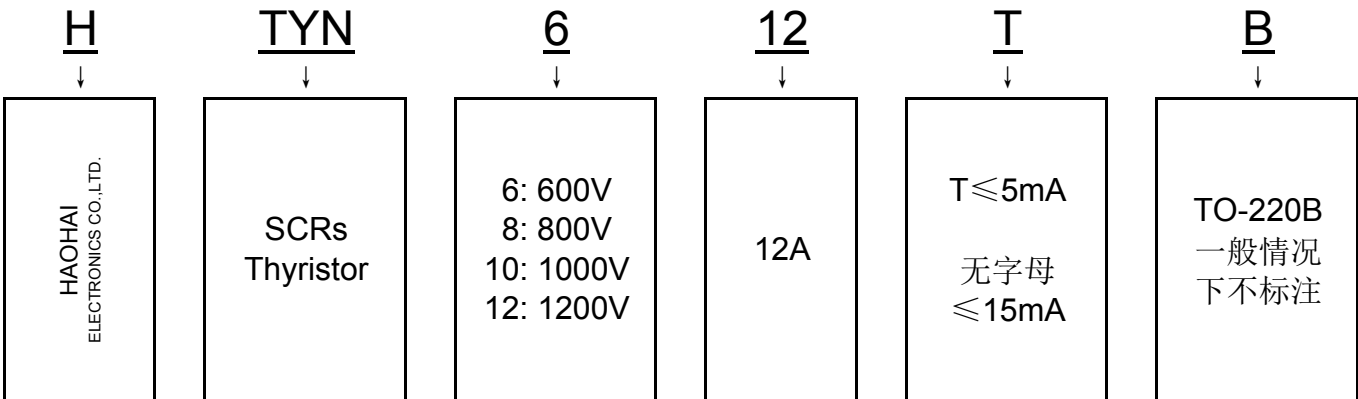
<p>DESCRIPTION</p> <p>High current density due to singel mesa technology.</p> <p>TYNx12 Series of sificon controlled rectifiers are specifically designed for medium power switching and phase control applications.</p> <p>TYNx12 Series are suitable for general purpose applications, a high gate sensitivity is required.</p> <p>Using TO-220B Non-Insulated Package</p>	<p>产品特征</p> <p>全循环交流导通；高于800V阻断电压 I_{GT}一致性好，档级覆盖面广 换向性能好，抗干扰能力强 良好的产品可靠型和产品品质</p> <p>主要用途</p> <p>自动化电气设备；开关电源；无功补偿；复合开关 交流电开关；交流/直流电源变换；电力模块 工业和家庭电加热器的温度控制；大功率路灯 电机马达调速控制电路 以及三相交流输入的高压电路、变频电路 采用 TO-220B 非绝缘型封装</p>
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■ Product Model Reference & Naming

High Voltage Thyristor (SCRs)

12A	产品型号列表、种类区分、型号对照电压值				I _{GT}
	600V	800V	1000V	1200V	
TO-220B	TYN612	TYN812	TYN1012	TYN1212	≤15mA
	TYN612T	TYN812T	TYN1012T	TYN1212T	≤5mA

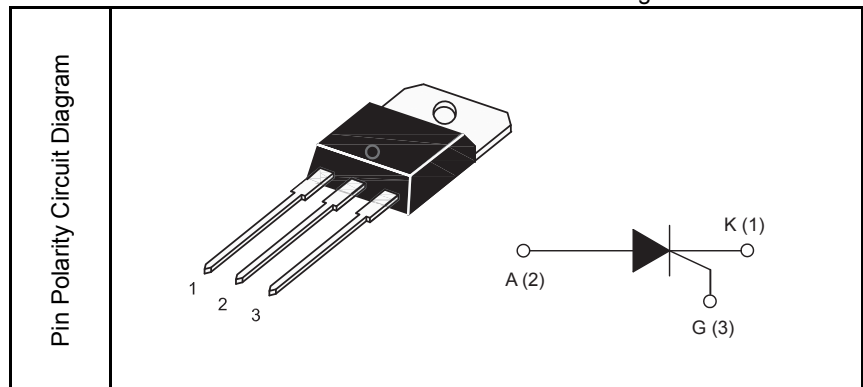
以常规电压品种供货，电压800V以上规格品种需订制。



MAIN FEATURES

Symbol	Value	Unit
I _{T(RMS)}	12	A
I _{GT}	5~15	mA
V _{GT}	≤ 1.3	V
V _{TM}	≤ 1.6	

TO-220B Non-Insulated Package



■ ABSOLUTE MAXIMUM RATINGS

SYMBOL	Signification in Symbol		Test Conditions	Value	Unit
$I_{T(RMS)}$	RMS On-state Current (all conduction angles)	TO-220B	$T_C=110^{\circ}C$	12	A
$I_{T(AV)}$	Average On-state Current (half sine wave)	TO-220B	$T_C=110^{\circ}C$	8	
I_{TSM}	Non Repetitive surge peak on-state Current (half sine cyale, $T_j=25^{\circ}C$)		f=50Hz, t=10ms	140	
			f=60Hz, t=8.3ms	146	
I_{GM}	Peak gate Current		tp=20μs, $T_j=125^{\circ}C$	4	
V_{DRM}	Repetitive peak off-state Voltages	TYN612	$T_j=25^{\circ}C$	600	V
V_{RRM}	Repetitive peak Reverse Voltages	TYN812	$T_j=25^{\circ}C$	800	
P_{GM}	Peak gate Power		tp=20μs, $T_j=125^{\circ}C$	5	W
$P_{G(AV)}$	Average gate power dissipation		$T_j=25^{\circ}C$	1	
I^2t	I^2t Value for Fusing		tp=10mS	98	A ² s
dl/dt	Repetitive rate of rise of on-state current after triggering $I_{TM}=20A, I_G=50mA, dl_G/dt 50mA/ms$			50	A/μs
T_j	Operating Junction Temperature Range			-40 ~ +125	°C
T_{stg}	Storage Junction Temperature Range			-40 ~ +150	

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

■ ELECTRICAL CHARACTERISTICS (T_J=25 unless otherwise specified)

Symbol	Test Condition	TYNx12			TYNx12T			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	
I _{GT}	V _D =12V, R _L =33Ω	--	5	15	--	2	5	mA
I _L	I _G =1.2 I _{GT}	--	20	60	--	10	30	
I _H	I _T =500mA	--	10	30	--	6	15	
V _{GT}	V _D =12V, R _L =33Ω	--	0.6	1.3	--	0.3	1.3	V
V _{GD}	V _D =V _{DRM} , R _L =3.3KΩ, T _J =125°C	--	--	0.2	--	--	0.2	
dv/dt	V _D =67%V _{DRM} gate open, T _J =125°C	200	400	--	40	200	--	V/μS

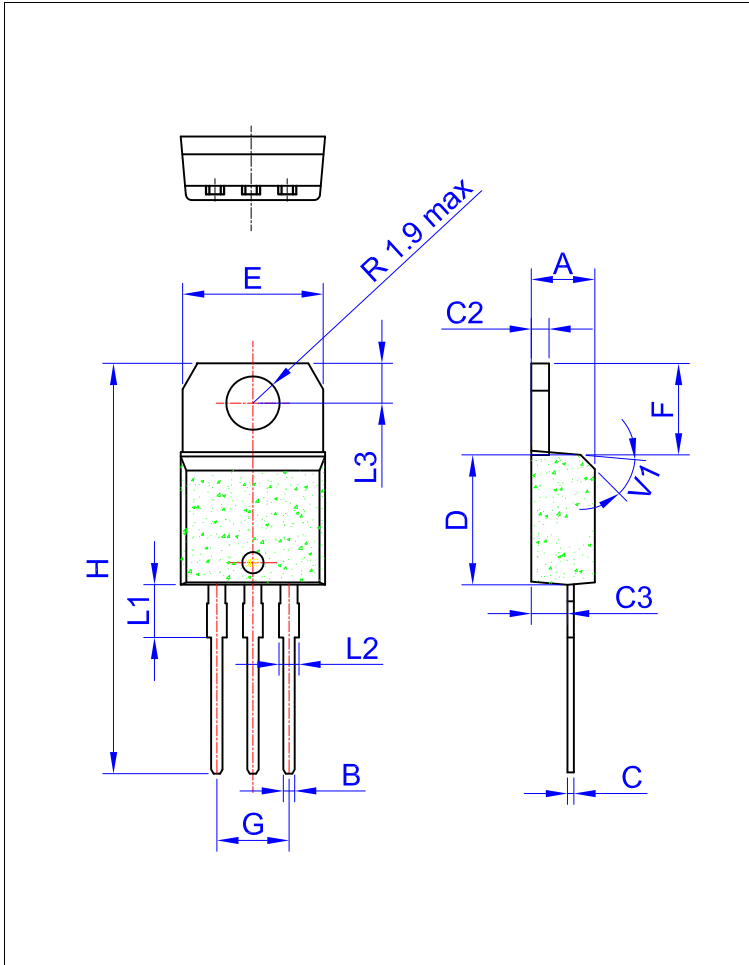
■ STATIC CHARACTERISTICS

Symbol	Parameter	Value (Max.)	Unit	
V _{TM}	I _{TM} =24A, tp=380μS	T _J =25°C	1.6	V
I _{DRM} I _{RRM}	V _D =V _{DRM} , V _R =V _{RRM}	T _J =25°C	5	μA
		T _J =125°C	2	mA

■ THERMAL RESISTANCES

Symbol	Parameter	Value (Max.)	Unit
R _{th(j-mb)}	Thermal Resistance From Junction to Mounting Base	1.2	°C/W

TO-220B PACKAGE MECHANICAL DATA (mm & inch)



TO-220B 封装尺寸数据 (毫米与英寸对照)

REF.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.4	4.6	0.173	1.181
B	0.61	0.88	0.024	0.034
C	0.46	0.7	0.018	0.027
C2	1.23	1.32	0.048	0.051
C3	2.1	2.72	0.094	0.107
D	8.6	9.7	0.338	0.382
E	9.8	10.4	0.386	0.409
F	6.2	6.6	0.244	0.259
G	4.8	5.4	0.189	0.213
H	28	29.8	11	11.7
L1	3.75		0.147	
L2	1.14	1.7	0.044	0.066
L3	2.65	2.95	0.104	0.116
V1	40°		40°	

	<p>打印标识</p> <p>H: 浩海电子 XXXXXXXX: 器件型号 KKG: 注册商标 YY: 出厂年份 WW: 出厂自然周 (01~53)</p> <p>Marking H: HAOHAI ELECTRONICS XXXXXXXX: Part Number KKG: Registered trademark YY: Factory Year WW: Factory natural Week (01~53)</p>	<p>包装规格</p> <p>条管装、纸盒装 每管50只 每盒1000只 每箱5000只</p> <p>Packaging Specifications Plastic tube 50Pcs/Tub 1000Pcs/BOX 5000Pcs/Cartons</p>
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Electrical characteristics & Typical characteristics

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

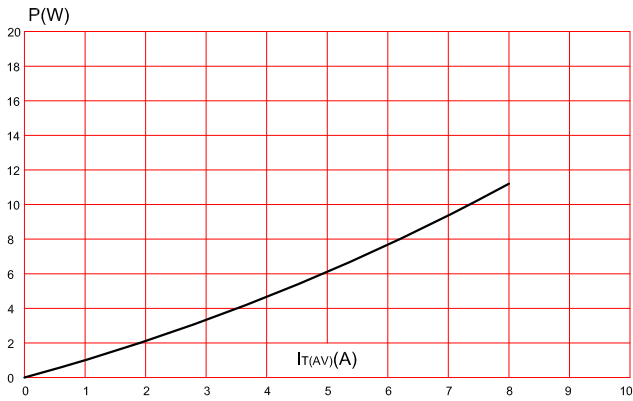


FIG-2: RMS on-state current versus case temperature (full cycle)

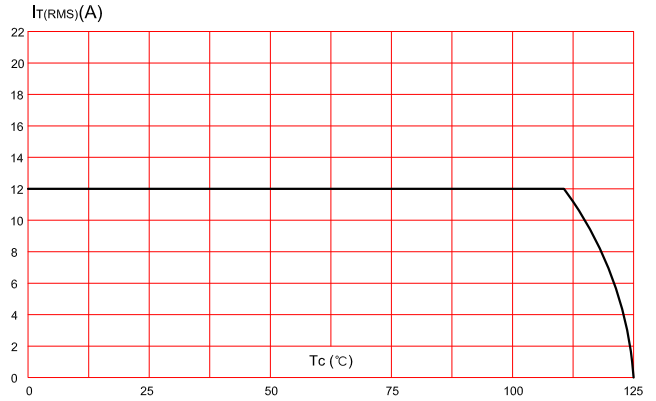


FIG-3: On=state characteristics (Maximum values)

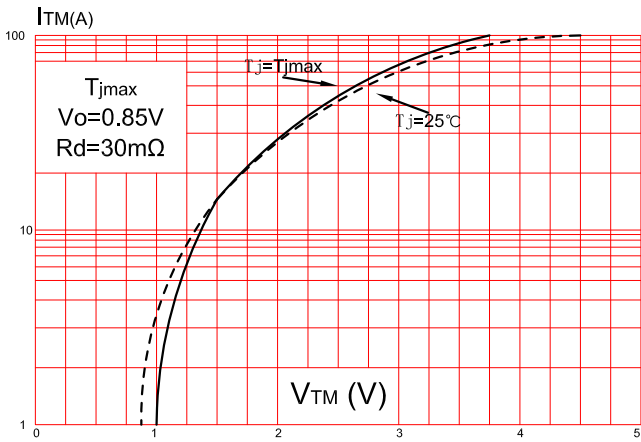


FIG-4: Surge peak on-state current versus number of cycles.

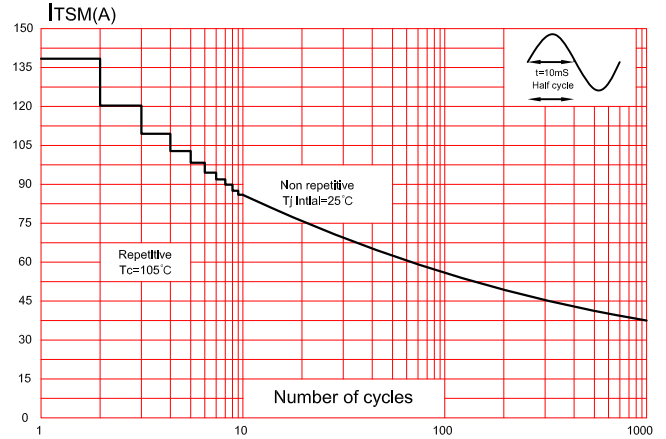


FIG-5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p \leq mS$, and corresponding value of I^2t .

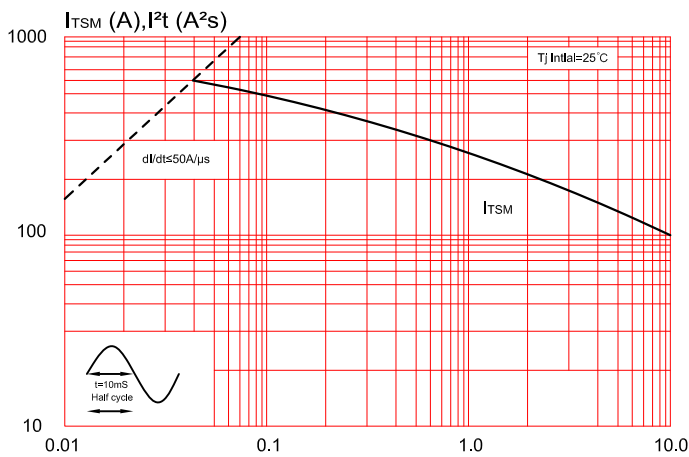
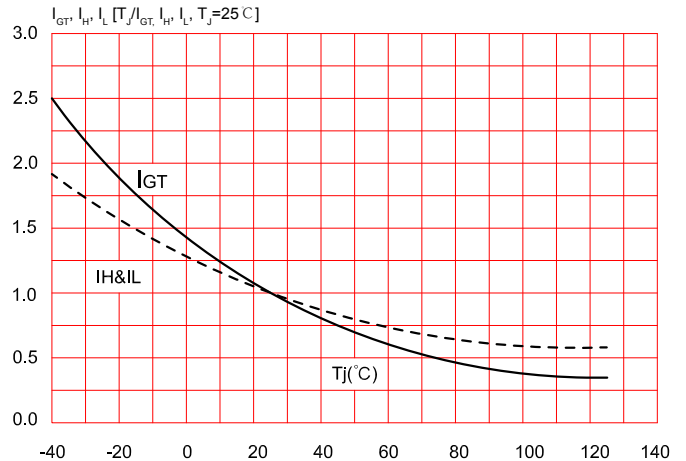


FIG-6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



Manufacturers version information
2010-09-01, KKG™ Product Data-1.0
2013-04-25, KKG™ Product Data-1.1
2016-12-10, KKG™ Product Data-1.2
2021-10-29, KKG™ Product Data-1.3



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