

DESCRIPTION

With high ability to withstand the shock loading of large current, TYN1240C SCR provides high dV/dt rate with strong resistance to electromagnetic interference. It is especially recommended for use on solid state relay, motorcycle, power charger, T-tools etc. Package TO-220C is RoHS compliant.

Using TO-220C Non-Insulated Package

产品特点

全循环交流导通

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

主要用途

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

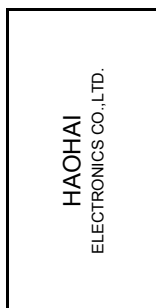
采用 TO-220C 非绝缘型封装

Product Model Reference & Naming

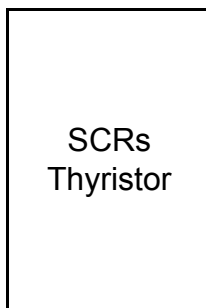
High Voltage Thyristor (SCRs)

40A	产品型号列表、种类区分、型号对照电压值				I_{GT}
	600V	800V	1000V	1200V	
TO-220C	TYN640C	TYN840C	TYN1040C	TYN1240C	$\leq 45\text{mA}$

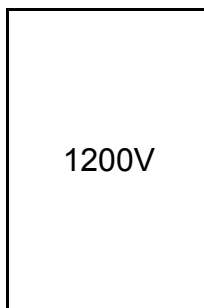
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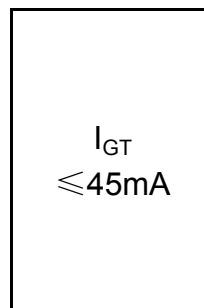
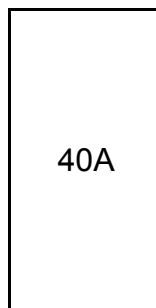
TYN



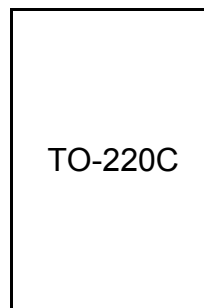
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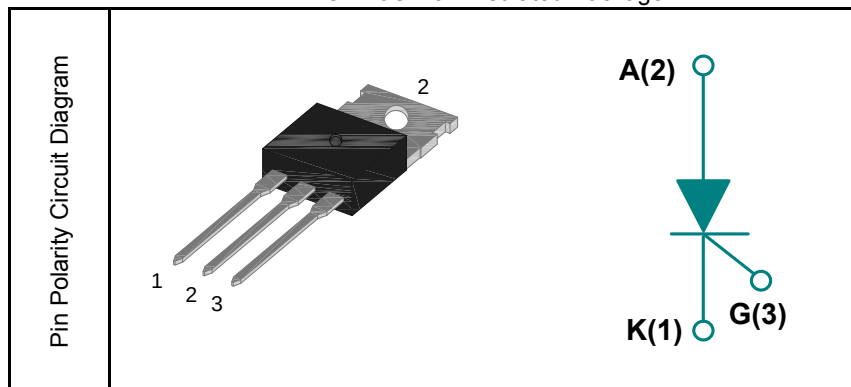
C



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	40	A
V_{DRM} V_{RRM}	1200	V
I_{GT}	≤ 45	mA
V_{GT}	≤ 1.0	V

TO-220C Non-Insulated Package



■ ABSOLUTE MAXIMUM RATINGS

SYMBOL	Signification in Symbol	Test Conditions	Value	Unit
$I_{T(RMS)}$	RMS On-state Current (all conduction angels)	$T_c \leq 96^\circ\text{C}$	40	A
$I_{T(AV)}$	Average On-state Current (half sine wave)	$T_c \leq 96^\circ\text{C}$	25	
I_{TSM}	Non Repetitive surge peak on-state Current (half sine cyale, $T_j=25^\circ\text{C}$)	$t_p=10\text{ms}, T_j=25^\circ\text{C}$	500	
		$t_p=8.3\text{ms}, T_j=25^\circ\text{C}$	540	
I_{GM}	Peak gate Current	$t_p=20\mu\text{s}, T_j=125^\circ\text{C}$	10	
V_{DRM}	Repetitive peak off-state Voltages	$T_j=25^\circ\text{C}$	1200	V
V_{RRM}	Repetitive peak Reverse Voltages	$T_j=25^\circ\text{C}$	1200	
P_{GM}	Peak gate Power	$t_p=20\mu\text{s}, T_j=125^\circ\text{C}$	20	W
$P_{G(AV)}$	Average gate power dissipation	$T_j=25^\circ\text{C}$	1	
V_{PP}	Peak pulse voltage ($T_j=25^\circ\text{C}$, non-repetitive, off-state, FIG.7)		0.7	KV
I^2t	I^2t value for fusing	$t_p=10\text{ms}, T_j=25^\circ\text{C}$	1250	A^2s
di/dt	Repetitive rate of rise of on-state current after triggering $I_G=2 \times I_{GT}$, $f=100\text{Hz}$, $T_j=125^\circ\text{C}$		200	$\text{A}/\mu\text{s}$
T_j	Operating Junction Temperature Range		-40 ~ +125	$^\circ\text{C}$
T_{stg}	Storage Junction Temperature Range		-40 ~ +150	

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

■ ELECTRICAL CHARACTERISTICS (T_J=25 unless otherwise specified)

Symbol	Test Condition	Value			Unit
		Min.	Typ.	Max.	
I _{GT}	V _D =12V, R _L =33Ω	--	--	45	mA
I _L	I _G =1.2 I _{GT}	--	--	120	
I _H	I _T =500mA	--	--	100	
V _{GT}	V _D =12V, R _L =33Ω	--	--	1	V
V _{GD}	V _D =V _{DRM} , R _L =3.3KΩ, T _J =125°C	0.2	--	--	
dv/dt	V _D =800V Gate Open, T _J =125°C	1500	--	--	V/μS
t _{on}	I _G =50mA, I _A =500mA, I _R =50mA, T _J =25°C	--	5	--	μS
t _{off}		--	100	--	

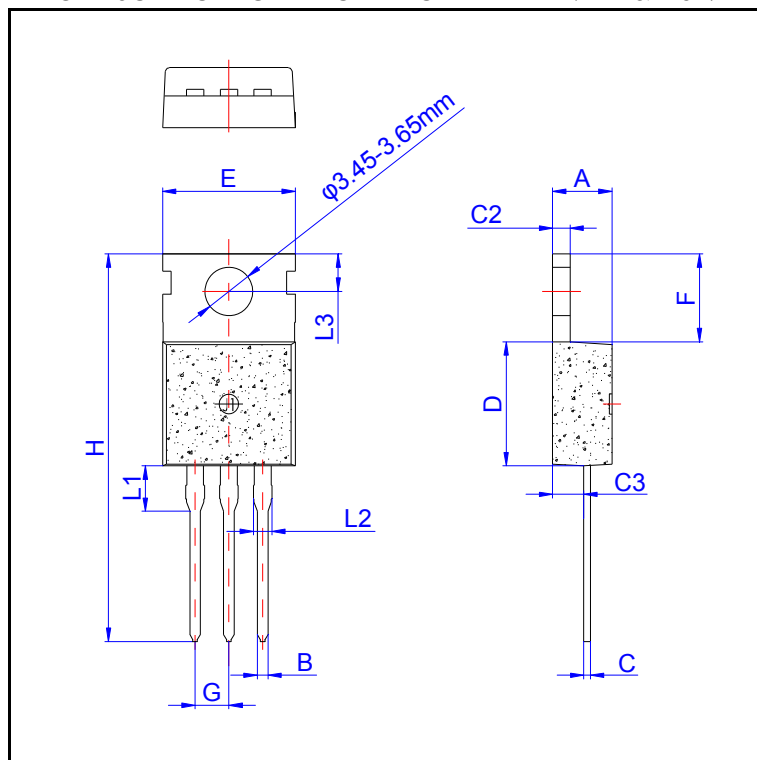
■ STATIC CHARACTERISTICS

Symbol	Parameter		Value (Max.)	Unit
V _{TM}	I _{TM} =80A, tp=380μS	T _J =25°C	1.7	V
V _{TO}	Threshold Voltage	T _J =125°C	0.69	
R _D	Dynamic Resistance	T _J =125°C	21	mΩ
I _{DRM}	V _D =V _{DRM} , V _R =V _{RRM}	T _J =25°C	10	μA
I _{RRM}		T _J =125°C	5	mA

■ THERMAL RESISTANCES

Symbol	Parameter	Value (Max.)	Unit
R _{th(j-c)}	Junction to case (DC)	0.5	°C/W
R _{th(j-a)}	Junction to ambient (DC)	55	

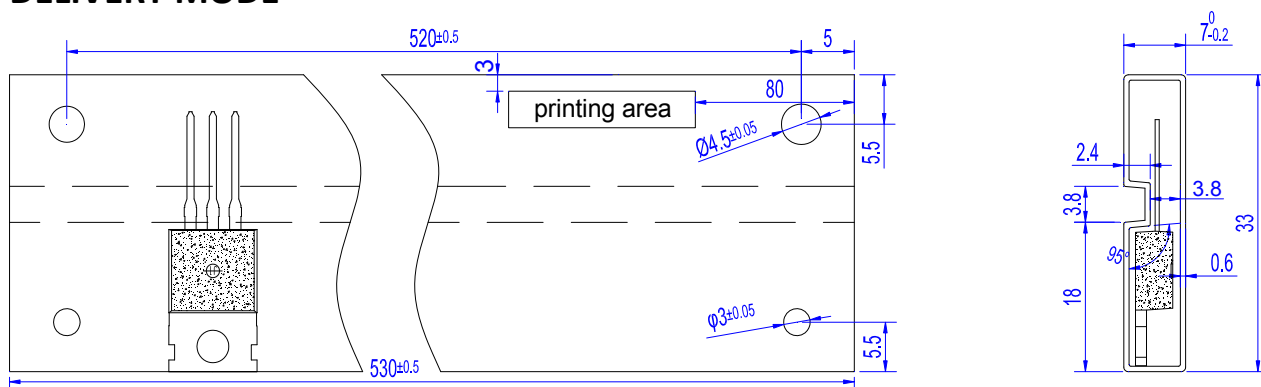
TO-220C PACKAGE MECHANICAL DATA (mm & inch)



TO-220C 封装尺寸数据 (毫米与英寸对照)

REF.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.40	4.60	0.173	0.181
B	0.70	0.90	0.028	0.035
C	0.45	0.60	0.018	0.024
C2	1.25	1.35	0.049	0.053
C3	2.20	2.60	0.087	0.102
D	8.90	9.90	0.350	0.390
E	9.90	10.3	0.390	0.406
F	6.30	6.90	0.248	0.272
G	2.40	2.70	0.094	0.106
H	28.0	29.8	0.102	1.173
L1	2.70	3.30	0.106	0.130
L2	1.14	1.70	0.045	0.067
L3	2.65	2.95	0.104	0.116

DELIVERY MODE



	Marking H: HAOHAI ELECTRONICS XXXXXXXX: Part Number KKG: Registered trademark YY: Factory Year WW: Factory natural Week (01~53)	Packaging Specifications Plastic tube 50Pcs/Tub 1000Pcs/BOX 5000Pcs/Cartons
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Electrical characteristics & Typical characteristics

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

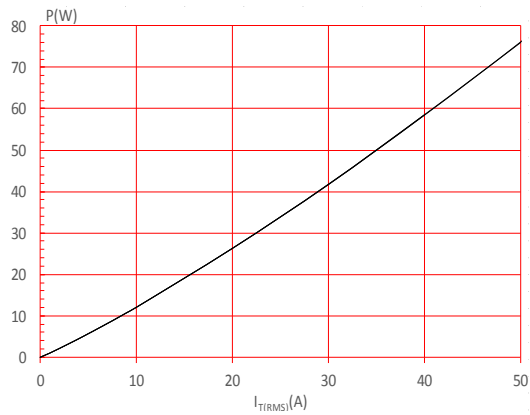


FIG-2: RMS on-state current versus case temperature.

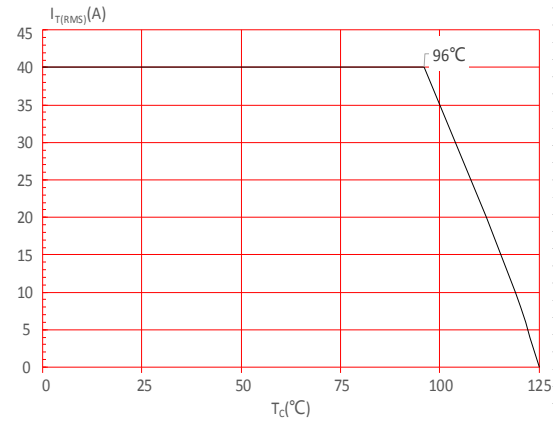


FIG-3: Surge peak on-state current versus number of cycles.

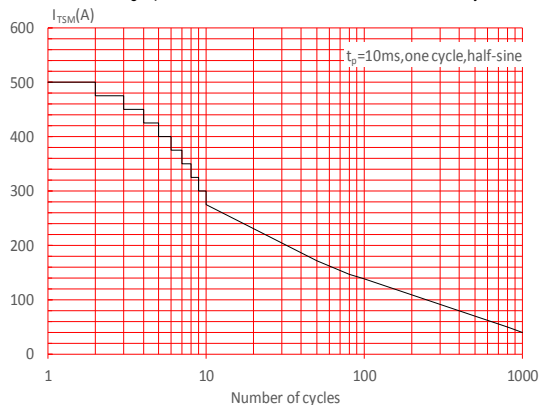


FIG-4: On-state characteristics

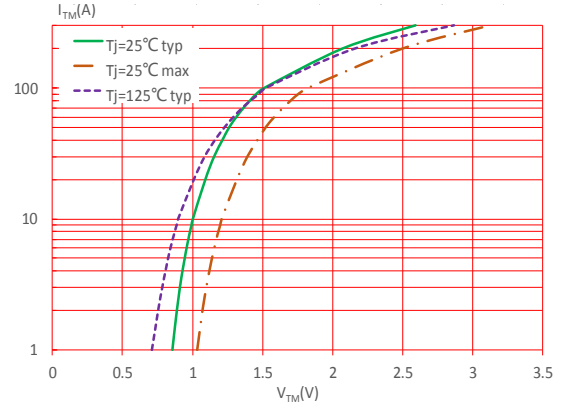


FIG-5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$, and corresponding value of I^2t ($di/dt < 200A/\mu s$)

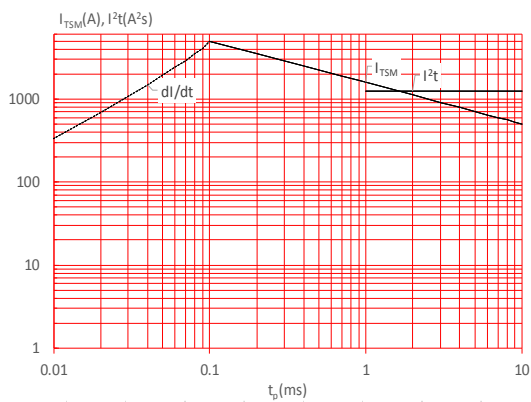


FIG-6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

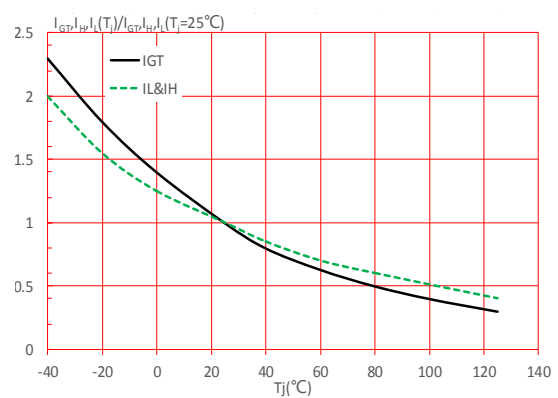
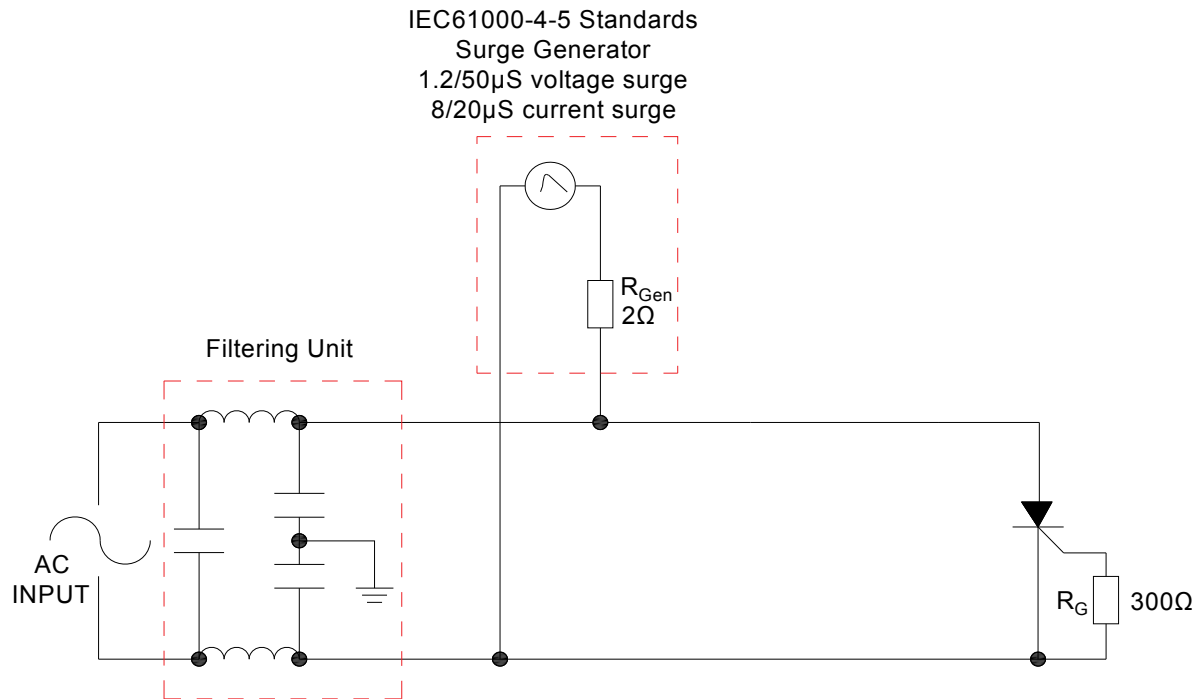


FIG.7: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.



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

2023-02-09, KKG™ Product Data-1.4



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