

- 产品概述: 采用TO-92塑封直插式封装形式  
具有灵敏门极触发性能, 用于直接连接微控制器, 逻辑IC和低功耗门极触发电路  
5~200uA的宽触发电流选择 ( $I_{GT}$ ):  
高于600V以上的 $V_{DRM}/V_{RRM}$ : 0.8A的负载电流; 结温 $T_j$ : -40~110°C
- 产品特征: 开通时间快,  $I_{GT}$ 温度特性好;  $dv/dt$ 高, 抗干扰能力强; 产品质量优, 可靠性高
- 主要用途: 点火电路、保护电路、负离子发生器、照明镇流电路
- 代替型号: P0102DA、P0102MA、BT149B、BT149D、BT149G、BT169D、BT169G

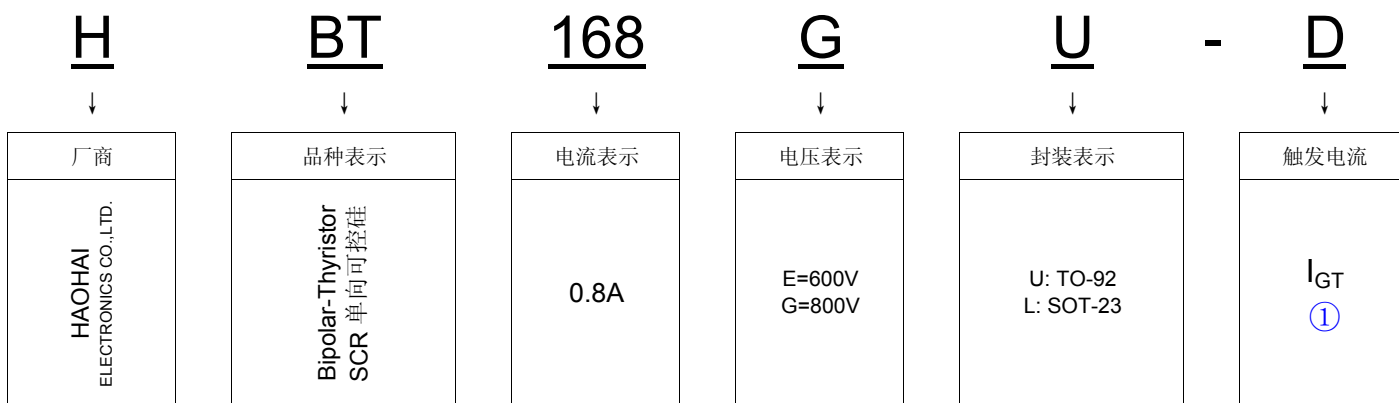
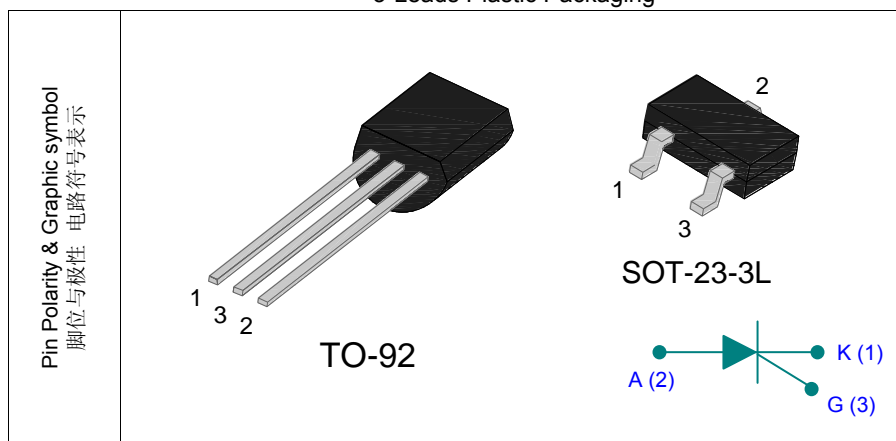
■ Product Model Reference & Naming【产品型号参考及型号命名】

0.8A	产品型号列表、封装区分、型号对照电压值				$I_{GT}$
	封装标识	打印标识	600V	800V	
TO-92	A	BT168	BT168E	BT168G	$\leq 200\mu A$ ①
SOT-23	MM	BT168	MMBT168E	MMBT168G	$I_{GT}$ Class

■ 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

3-Leads Plastic Packaging



■  $I_{GT}$  Class 触发电流分段 ①

Item	A	B	C	D	E	F	G	H	J	K	Unit
$I_{GT}$	1~5	5~10	10~30	30~60	40~100	50~200	1~10	20~40	30~45	40~200	$\mu A$

■ ABSOLUTE RATINGS (Limiting Values) 【额定值参数】

SYMBOL	Parameter & Test Conditions		Value	Unit
$I_{T(RMS)}$	On-State RMS Current	$T_C=60^\circ C$	0.8	A
$I_{TSM}$	Peak Non-Repetitive Surge Current	$T_J=25^\circ C, t_p=10mS$	8	
$I_{GM}$	Forward Peak Gate Current	$T_J=110^\circ C, t_p=20\mu S$	0.2	
$I^2t$	$I^2t$ for fusing	$t=10mS$	0.32	A <sup>2</sup> ses
di/dt	Critical rate of rise of on-state current		50	A/ $\mu s$
$P_{GM}$	Forward Peak Gate Power	$t_p=20\mu S, T_J=110^\circ C$	0.5	W
$P_{G(AV)}$	Forward Average Gate Power	$T_J=110^\circ C$	0.1	
$V_{DRM}$ $V_{RRM}$	Peak Repetitive Off-State Voltage ( $T_J=25^\circ C$ )	见产品型号参考及型号命名 See Reference Feature Description	600~800	V
$T_J$	Operating Junction Temperature Range		-40~+110	°C
$T_{stg}$	Storage Temperature Range		-40~+150	
$T_L$	Maximum Lead Temperature for Soldering Purposes 1/8,from Case for 10 Seconds		260	

■ ELECTRICAL CHARACTERISTICS ( $T_J=25^\circ C$  Unless Otherwise Noted)

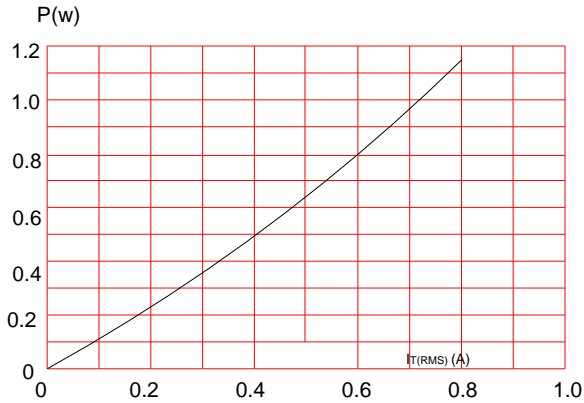
SYMBOL	Parameter & Test Conditions		Min	Typ	Max	Unit
$I_{GT}$	$V_D=12V, R_L=33\Omega$	$T_J=25^\circ C$	--	30	200	$\mu A$
$I_H$	Holding Current	$I_T=50mA$	--	--	3	mA
$I_L$	Latching Current	$I_G=1.2 I_{GT}$	--	--	5	
$V_{GT}$	Gate Trigger Voltage	$V_D=12V, R_L=33\Omega$	--	0.6	0.8	V
$V_{GD}$	Gate Non-Trigger Voltage	$V_D=V_{DRM}, T_J=110^\circ C$	0.2	--	--	
$V_{TM}$	Peak Forward On-State Voltage	$I_{TM}=1A, t_p=380\mu S, T_J=25^\circ C$	--	--	1.5	
$I_{DRM}$	$V_D=V_{DRM}, V_R=V_{RRM}$	$T_J=25^\circ C$	--	--	5	$\mu A$
$I_{RRM}$		$T_J=110^\circ C$	--	--	100	
dv/dt	$V_D=2/3V_{DRM}, R_{GK}=1K\Omega, T_J=110^\circ C$		10	--	--	V/ $\mu s$

■ THERMAL CHARACTERISTICS

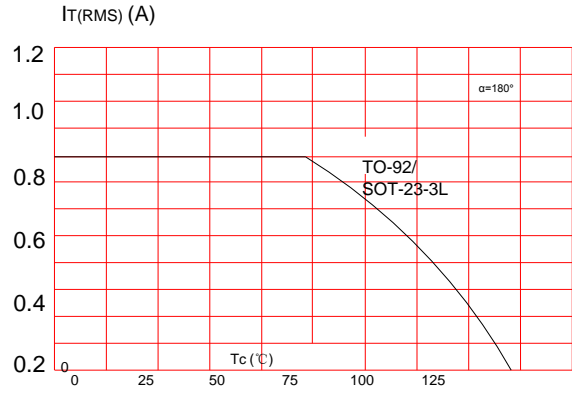
SYMBOL	Parameter & Test Conditions		Min	Typ	Max	Unit
$R_{th(j-c)}$	Thermal Resistance-Junction-to-Case	TO-92, SOT-23-3L	--	--	75	°C/W

Voltage Current Characteristic of SCR 可控硅电压电流特性

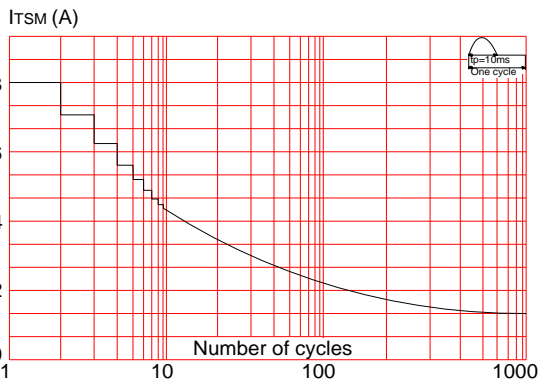
**FIG.1** Maximum power dissipation versus RMS on-state current



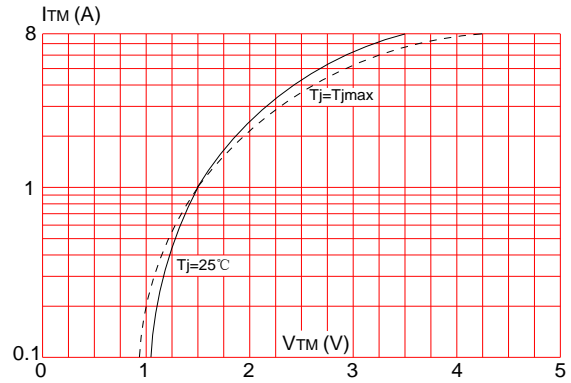
**FIG.2:** RMS on-state current versus case temperature



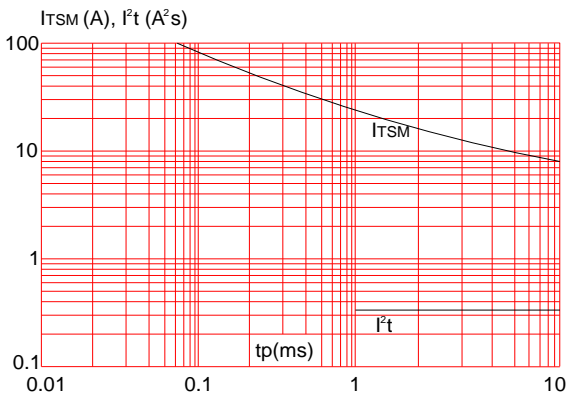
**FIG.3:** Surge peak on-state current versus number of cycles



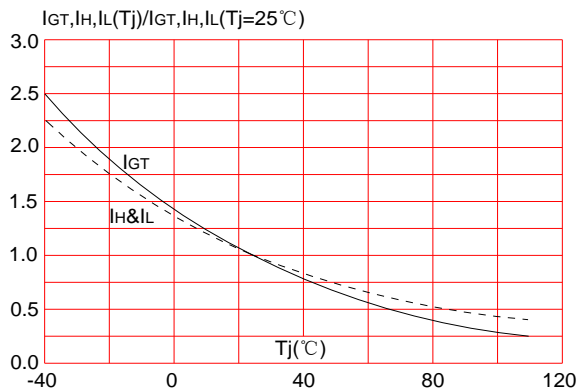
**FIG.4:** On-state characteristics (maximum values)



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



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



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

打印标识

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 Typ		0.043 Typ	
G	1.27 Typ		0.050 Typ	
H	2.30 Typ		0.091 Typ	
J	0.36	0.50	0.014	0.020
K	12.70	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

TO-92 (TO-226AA)  
Package Code: A

**Marking**

XXX: Part Number  
KKG: Registered trademark  
AAA: Chip Code  
LOGO in  
The upper left corner mark  
XXX 产品型号  
KKG: 注册商标  
AAA: 芯片代码  
左上角为公司LOGO

REF	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
B	0	0.100	0	0.004
C	1.050	1.150	0.041	0.045
D	0.300	0.500	0.012	0.020
E	0.100	0.200	0.004	0.008
F	2.820	3.020	0.111	0.119
G	1.500	1.700	0.059	0.067
H	2.650	2.950	0.104	0.116

SOT-23-3L  
Package Code: MM

**Marking**

XXX: Part Number  
KKG: Registered trademark  
LOGO in  
The upper left corner mark  
XXX 产品型号  
KKG: 注册商标  
左上角为公司LOGO

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

REF.	TO-92 (TO-226AA)			SOT-23-3L		
	Bag	BOX	Carton	Reel	BOX	Carton
QTY	1,000 Pcs	10,000 Pcs	100,000 Pcs	3,000 Pcs	45,000 Pcs	180,000 Pcs
Size	--	245×176×97mm	520×370×270mm	7"	220×220×200mm	440×440×230mm
G.W.	197 g	2132 g	22314 g	113 g	1932 g	8639 g

Manufacturers version information

2005-03-20, KKG™ Product Data-1.0

2012-04-01, KKG™ Product Data-1.1

2014-12-08, KKG™ Product Data-1.2



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.

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>