

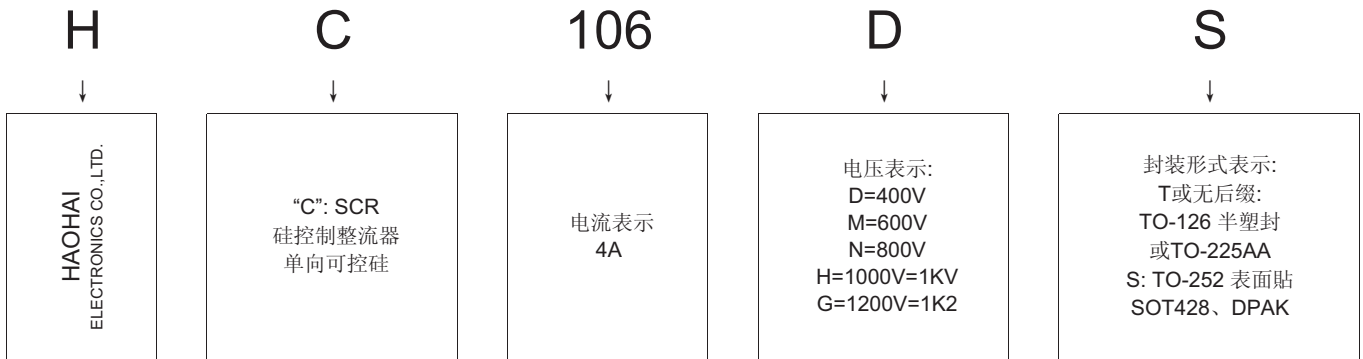
C106 Series is Glassivated PNP devices designed for high volume consumer applications such as temperature, light, and speed control; process and remote control, and warning systems where reliability of operation is important.

Features

- Pb-Free Packages are Available
- Glassivated Surface for Reliability and Uniformity
- Power Rated at Economical Prices
- Practical Level Triggering and Holding Characteristics
- Flat, Rugged, Thermopad Construction for Low Thermal Resistance, High Heat Dissipation and Durability
- Sensitive Gate Triggering

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

4A	封装标识	产品型号列表、对应封装、型号对应电压值					触发电流 单位: uA
		400V	600V	800V	1000V	1200V	
TO-126 or TO-225AA 直插TO-126半封装	T	C106D	C106M	C106N	C106H	C106G	$I_{GT} \leq 200\mu A$
TO-252 or SOT428 贴片TO-252(DPAK)封装	D	C106DS	C106MS	C106NS	C106HS	C106GS	
说明 Explain		标准品种	高压品种	高压品种	暂无量产	暂无量产	
可代替的其它工业型号产品		MCR106-4, MCR106-6, MCR106-8, MCR106-10, MCR708, MCR708A, MCR708AT, MCR708AT4, MCR714, MCR714A, MCR714AT, MCR714AT4, MCR716, MCR716A, MCR716AT, MCR716AT4, MCR718, MCR718A, MCR718AT, MCR718AT4; 3P4J-Z, 5P4J-Z, 5P6J-Z, CR5AS-8, CR5AS-12, SMG2D60D, S2D60D, SMG3D60C, S3D6C; SMG5C60D, S5C6D, S2004DS1, S2004DS2, S4004DS1, S4004DS2, S2006DS2, S2006DS3, S6004DS1, S6004DS2, T106B, T106M, T107B, T107M; 2P4M, 2P5M, 2P6M					



PINNING: TO-126 (TO-225AA)、TO-252 (SOT428 or DPAK) SMD 【TO-126直插半塑封、TO-252贴片封装】

Pin	Symbol	Description	Description
1	K	Cathode	阴极
2	A	Anode	阳极
3	G	Gate	控制极
4	mb	mounting base	散热片

TO-126

DPAK TO-252

DPAK TO-252 "2" = "4"

■ ABSOLUTE RATINGS (Limiting Values) 【额定值参数极限值】 ■ THERMAL RESISTANCES 【热阻】 ■ 絕緣電阻特徵

SYMBOL	Signification in Symbol	Test Conditions	Value	Unit
$I_{T(RMS)}$	On-State RMS Current ($T_C=80^\circ\text{C}$) 180° Conduction Angles		4	A
$I_{T(AV)}$	Average On-State Current (180° Conduction Angles, $T_C=80^\circ\text{C}$)		2.55	
I_{TSM}	Non-Repetitive Peak on-state Current (½ Cycle, Sine Wave, 60Hz, $T_J=110^\circ\text{C}$)		20	
I_{GM}	Forward Peak Gate Current (Pulse Width $\leq 1.0\mu\text{s}$, $T_C=80^\circ\text{C}$)		0.2	
I^2t	Circuit Fusing Consideration ($t=8.3\text{ms}$)		1.65	A^2s
V_{DRM} V_{RRM}	Repetitive peak off-state voltages (Sine Wave, 50–60Hz, $R_{GK}=1\text{K}\Omega$, $T_C=-40^\circ\text{C}$ to 110°C)	見型号对照列表	200~1200	V
$P_{G(AV)}$	Average gate power dissipation (Pulse Width $\leq 1.0\mu\text{s}$, $T_C=80^\circ\text{C}$)		0.1	W
P_{GM}	Peak gate power (Pulse Width $\leq 1.0\mu\text{s}$, $T_C=80^\circ\text{C}$)		0.5	
T_J	Operating Junction Temperature Range		-40 ~ +110	$^\circ\text{C}$
T_{stg}	Storage Temperature Range		-40 ~ +150	
T_L	引腳承受焊錫極限溫度: Max.Lead Temperature for Soldering Purposes 1/8" (From Case for 10 Seconds)		260	
$R_{\theta JC}$	Thermal Resistance, Junction to Case	Full Cycle	3	$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	In Free Air	75	

■ STATIC CHARACTERISTICS 【静态特性】 ■ DYNAMIC CHARACTERISTICS 【動態特性】

SYMBOL	Parameter & Test Conditions	Value			Unit	
		Min.	Typ.	Max.		
I_{GT}	門極觸發電流 ($V_{AK}=6\text{Vdc}$, $R_L=1000\Omega$)	$T_J=25^\circ\text{C}$	--	15	200	μA
		$T_J=-40^\circ\text{C}$	--	35	500	
I_{DRM} I_{RRM}	Peak Repetitive Forward or Reverse Blocking Current $V_{AK}=\text{Rated } V_{DRM}$ or V_{RRM} , $R_{GK}=1\text{K}\Omega$	$T_J=25^\circ\text{C}$	--	--	10	μA
		$T_J=110^\circ\text{C}$	--	--	100	
I_H	維持電流: Holding Current $V_D=12\text{Vdc}$, $I_{GT}=20\text{mA}$, Gate Open	$T_J=25^\circ\text{C}$	--	0.19	3.0	mA
		$T_J=-40^\circ\text{C}$	--	0.33	6.0	
		$T_J=110^\circ\text{C}$	--	0.07	2.0	
I_L	Latching Current $V_{AK}=12\text{V}$, $I_{GT}=20\text{mA}$	$T_J=25^\circ\text{C}$	--	0.20	5.0	mA
		$T_J=-40^\circ\text{C}$	--	0.35	7.0	
V_{GT}	Gate Trigger Voltage (Continuous DC) ($V_{AK}=6\text{Vdc}$, $R_L=100\Omega$)	$T_J=25^\circ\text{C}$	0.40	0.60	0.80	V
		$T_J=-40^\circ\text{C}$	0.50	0.75	1.00	
V_{TM}	Peak Forward On-State Voltage	$I_{TM}=4\text{A}$	--	--	2.2	V
V_{GRM}	Peak Reverse Gate Voltage	$I_{GR}=10\mu\text{A}$	--	--	6.0	V
V_{GD}	Gate Non-Trigger Voltage (Continuous DC, $V_{AK}=12\text{V}$, $R_L=100\Omega$, $T_J=110^\circ\text{C}$)		0.2	--	--	V
dv/dt	Critical Rate of Rise of Off-State Voltage $V_{AK}=\text{Rated } V_{DRM}$, Exponential Waveform, $R_{GK}=1\text{K}\Omega$, $T_J=110^\circ\text{C}$		--	8.0	--	$\text{V}/\mu\text{s}$

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

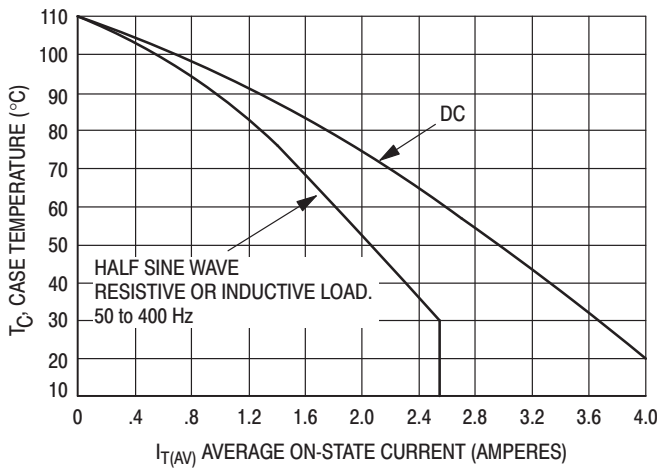


Figure 1. Average Current Derating

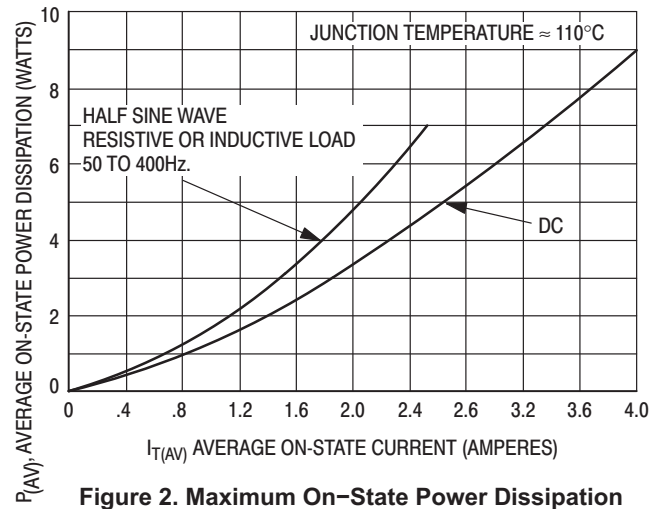


Figure 2. Maximum On-State Power Dissipation

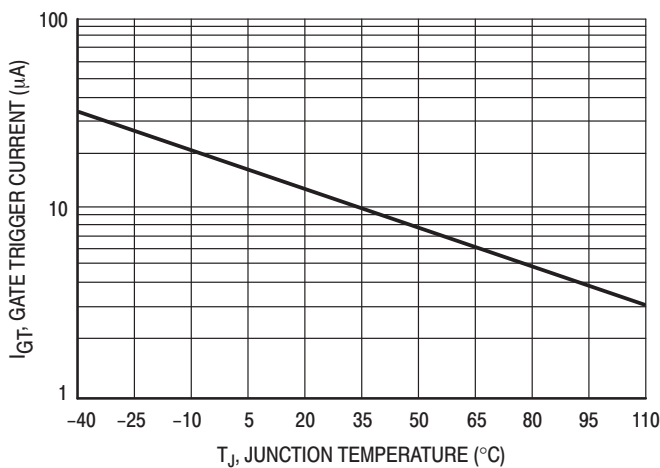


Figure 3. Typical Gate Trigger Current versus Junction Temperature

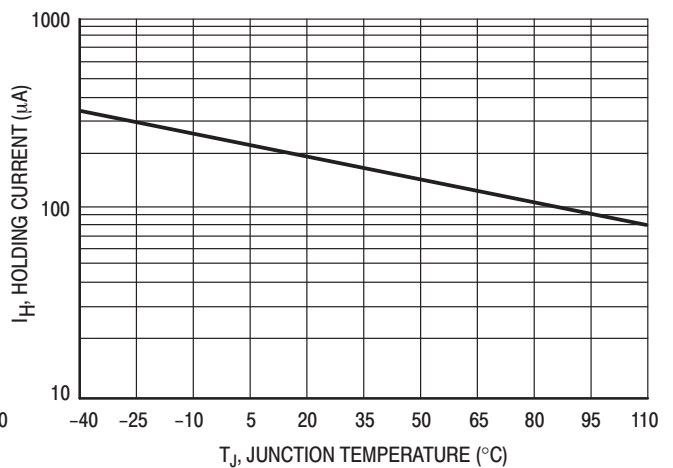


Figure 4. Typical Holding Current versus Junction Temperature

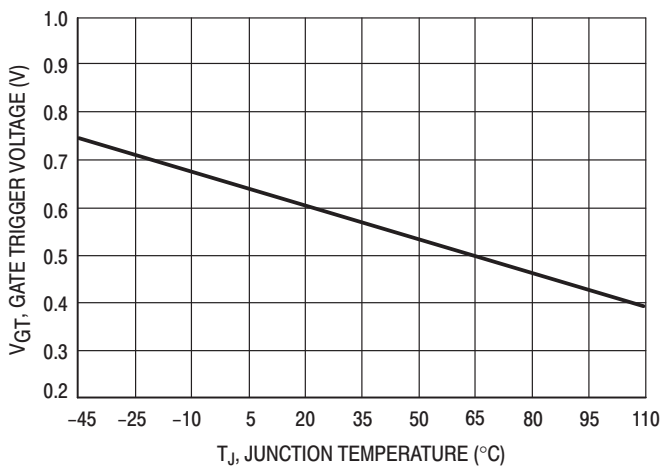


Figure 5. Typical Gate Trigger Voltage versus Junction Temperature

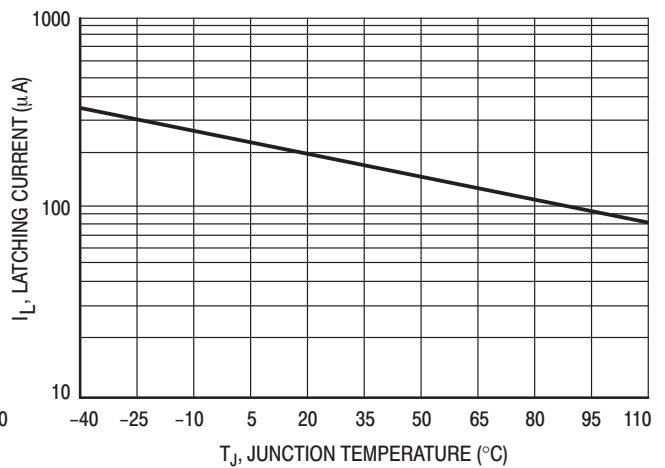
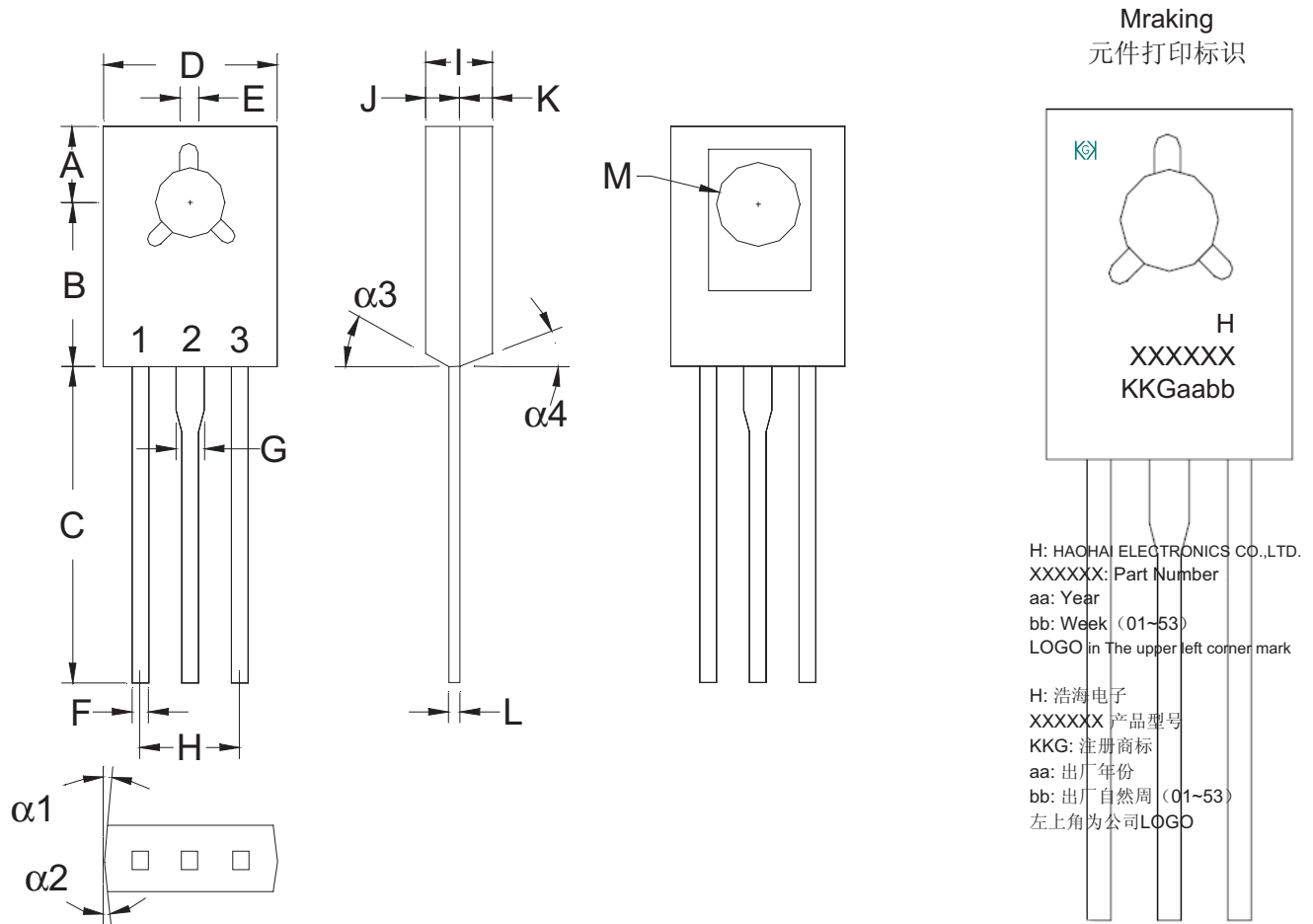


Figure 6. Typical Latching Current versus Junction Temperature

PACKAGE MECHANICAL DATA (Inch & mm)
TO-126 (TO-225AA) 直插半塑 封装尺寸 (单位:英寸与毫米)

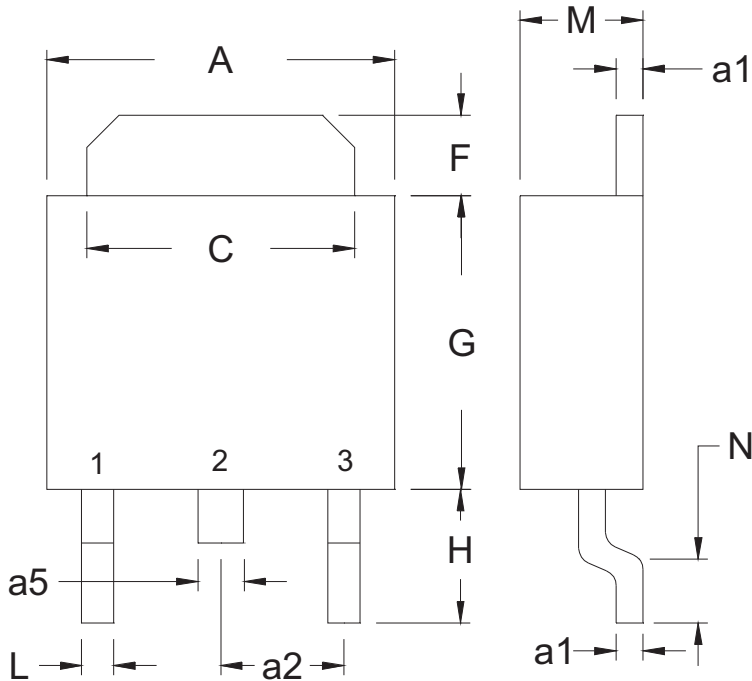


DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
$\alpha 1$	-	*3°	-	*3°	F	0.0280	0.0319	0.71	0.81
$\alpha 2$	-	*3°	-	*3°	G	0.0480	0.0520	1.22	1.32
$\alpha 3$	-	*3°	-	*3°	H	0.1709	0.1890	4.34	4.80
$\alpha 4$	-	*3°	-	*3°	I	0.0950	0.1050	2.41	2.66
A	0.1500	0.1539	3.81	3.91	J	0.0450	0.0550	1.14	1.39
B	0.2752	0.2791	6.99	7.09	K	0.0450	0.0550	1.14	1.39
C	0.5315	0.6102	13.50	15.50	L	-	*0.0217	-	*0.55
D	0.2854	0.3039	7.52	7.72	M	0.1378	0.1520	3.50	3.86
E	0.0374	0.0413	0.95	1.05					

■ 包装规格 Packaging Specifications

封装	明细		Pcs	Bag/袋	BOX/盒	Carton/箱
TO-126 TO-225AA	QTY/数量	粒	1	500 Pcs	5000 Pcs	25000 Pcs
	Size/尺寸	mm			270×171×100	260×280×195
	G.W./重量	g	0.6 g	305 g	3190 g	16550 g

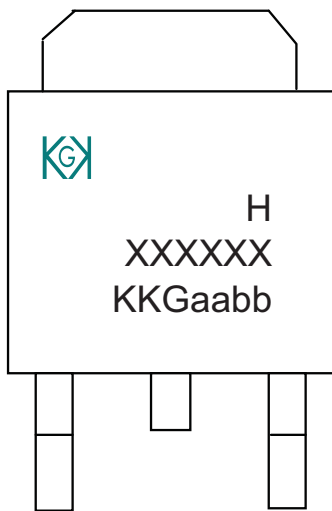
PACKAGE MECHANICAL DATA (mm)
TO-252 (DPAK) 片式表面贴 封装尺寸 (单位:毫米)



DIM	Min.	Max.
A	6.35	6.80
C	4.80	5.50
F	1.30	1.70
G	5.40	6.25
H	2.20	3.00
L	0.40	0.90
M	2.20	2.40
N	0.90	1.50
a1	0.40	0.65
a2	-	*2.30
a5	0.65	1.05

*: Typical, Unit: mm

Mraking 元件打印标识



H: HAOHAI ELECTRONICS CO.,LTD.
XXXXXX: Part Number
aa: Year
bb: Week (01~53)
LOGO in The upper left corner mark

H: 浩海电子
XXXXXX 产品型号
KKG: 注册商标
aa: 出厂年份
bb: 出厂自然周 (01~53)
左上角为公司LOGO

■ 包装规格 Packaging Specifications

封装	明细		Pcs	Reel/卷盘	BOX/盒	Carton/箱
DPAK TO-252	QTY/数量	粒	1	2500 Pcs	5000 Pcs	25000 Pcs
	Size/尺寸	mm		Φ13 "	340×338×48	366×260×270
	G.W./重量	g	0.41 g	1080 g	2331 g	12300 g

Manufacturers version information

2005-03-20, KKG™ Product Data-1.0

2012-04-01, KKG™ Product Data-1.1

2014-08-10, KKG™ Product Data-1.2



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