

工业型号	公司型号	封装形式	H	订货方式	包装规格	每卷数量	每箱数量
8205A	H8205A	TSSOP-8	HAOHAI	H8205A-TS	载带卷盘包装	3000Pcs	30000Pcs

可代替其他厂家同类型号: NCE8205A、UT8205A、FS8205A、CEG8205A、S8205A、GM8205A、KI8205A、TA8205A、STN8205A

DESCRIPTION

The H8205A uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 2.5V. This device is suitable for use as a Battery protection or in other Switching application.

GENERAL FEATURES

- $V_{DS}=19.5V, I_D=6A$
- $R_{DS(ON)} < 37m\Omega @ V_{GS}=2.5V$
- $R_{DS(ON)} < 27m\Omega @ V_{GS}=4.5V$
- High Power and current handing capability
- Lead free product is acquired
- Surface Mount Package
- High density cell design for ultra low $R_{DS(ON)}$
- Fully characterized Avalanche voltage and current
- Good stability and uniformity with high E_{AS}
- Excellent package for good heat dissipation
- Special process technology for high E_{SD} capability
- 100% UIS TESTED ! 100% ΔV_{DS} TESTED !

$I_D=6A$
 $V_{DS}=19.5V$
 $R_{DS(on)}=21m\Omega$

Application

- Power switching application
- Hard Switched and High Frequency Circuits
- Uninterruptible Power Supply!
- SMD-Package: TSSOP-8Pin

H8205A Pin Assignment

Schematic diagram

Marking and pin Assignment

TSSOP-8 top view

Absolute Maximum Ratings ($T_C=25^\circ C$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	19.5	V
Gate-Source Voltage	V_{GS}	± 10	
Drain Current-Continuous	I_D	6	A
Drain Current-Pulsed (Note 1)	I_{DM}	25	
Maximum Power Dissipation	P_D	1.5	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^\circ C$

Thermal Characteristic

Parameter	Symbol	Limit	Unit
Thermal Resistance, Junction-to-Case (Note 2)	$R_{\theta Jc}$	83	$^\circ C/W$

■ Electrical Characteristics ($T_C=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
-----------	--------	-----------	-----	-----	-----	------

■ Off Characteristics

Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	19.5	21	--	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=19.5V, V_{GS}=0V$	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 10V, V_{DS}=0V$	--	--	± 100	nA

■ On Characteristics (Note 3)

Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5	0.7	1.2	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=4.5A$	--	21	27	m Ω
		$V_{GS}=2.5V, I_D=3.5A$	--	27	37	
Forward Transconductance	g_{FS}	$V_{DS}=5V, I_D=4.5A$	--	10	--	S

■ On Characteristics (Note 4)

Input Capacitance	C_{iss}	$V_{DS}=8V$ $V_{GS}=0V$ $F=1.0MHz$	--	600	--	pF
Output Capacitance	C_{oss}		--	330	--	
Reverse Transfer Capacitance	C_{rss}		--	140	--	

■ Switching Characteristics (Note 4)

Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=10V$ $I_D=1A$ $V_{GS}=4.5V$ $R_{GEN}=6\Omega$	--	10	20	nS
Turn-on Rise Time	t_r		--	11	25	
Turn-Off Delay Time	$t_{d(off)}$		--	35	70	
Turn-Off Fall Time	t_f		--	30	60	
Total Gate Charge	Q_g	$V_{DS}=10V$ $I_D=6A$ $V_{GS}=4.5V$	--	10	15	nC
Gate-Source Charge	Q_{gs}		--	2.3	--	
Gate-Drain Charge	Q_{gd}		--	1.5	--	

■ Drain-Source Diode Characteristics

Diode Forward Voltage (Note 3)	V_{SD}	$V_{GS}=0V, I_S=1.7A$	--	0.75	1.2	V
Diode Forward Current (Note 2)	I_S	--	--	--	1.7	A

Notes:

- 1、Repetitive Rating: Pulse width limited by maximum junction temperature.
- 2、Surface Mounted on FR4 Board, $t \leq 10sec$.
- 3、Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$
- 4、Guaranteed by design, not subject to production

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

Fig-1: Switching Test Circuit

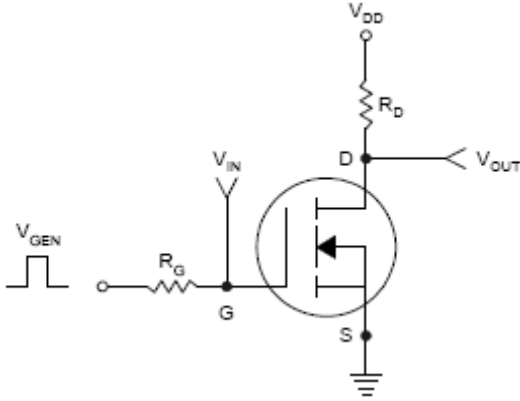


Fig-2: Switching Waveforms

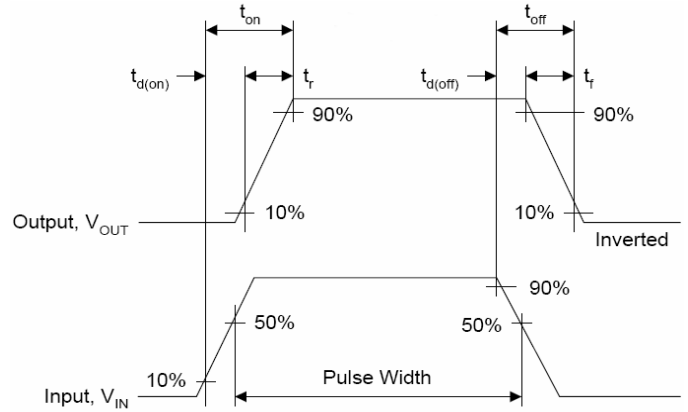


Fig-3: Power Dissipation

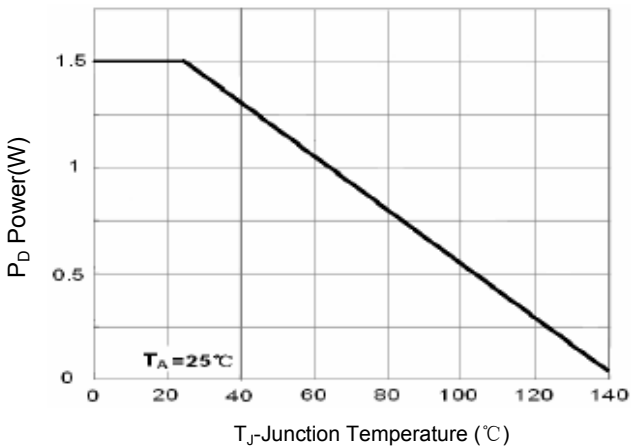


Fig-4: Drain Current

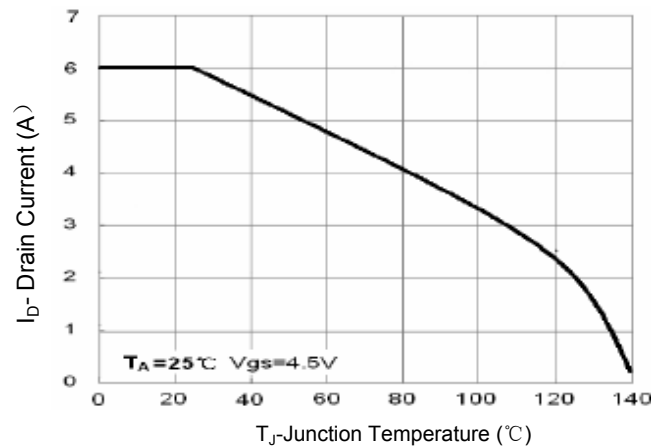


Fig-5: Output CHARACTERISTICS

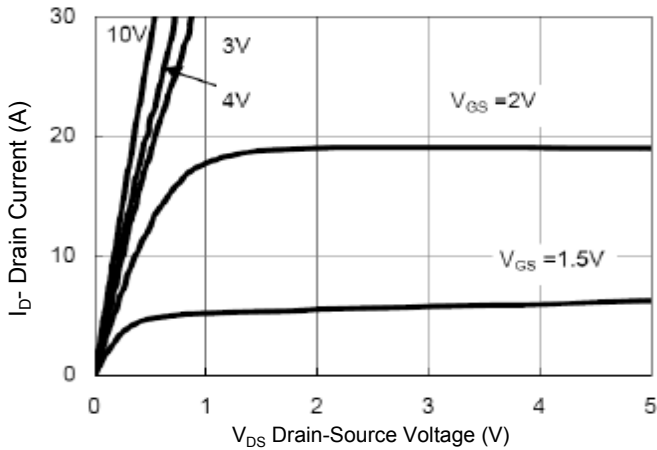


Fig-6: Drain-Source On-Resistance

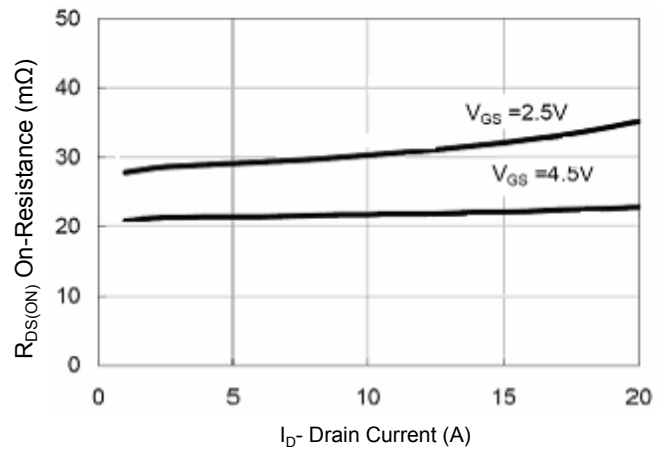


Fig-7: Transfer Characteristics

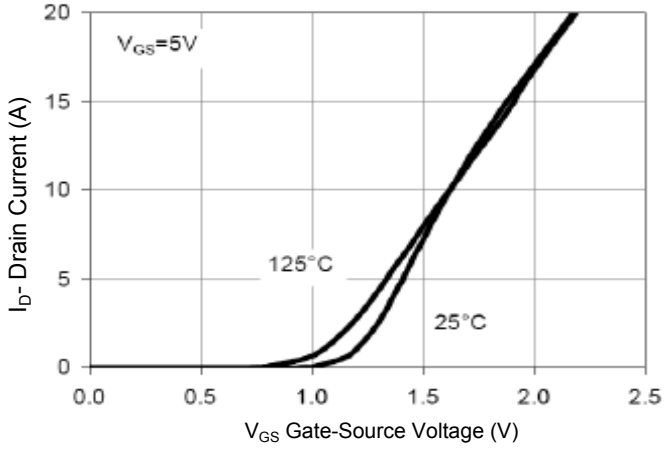


Fig-8: Drain-Source On-Resistance

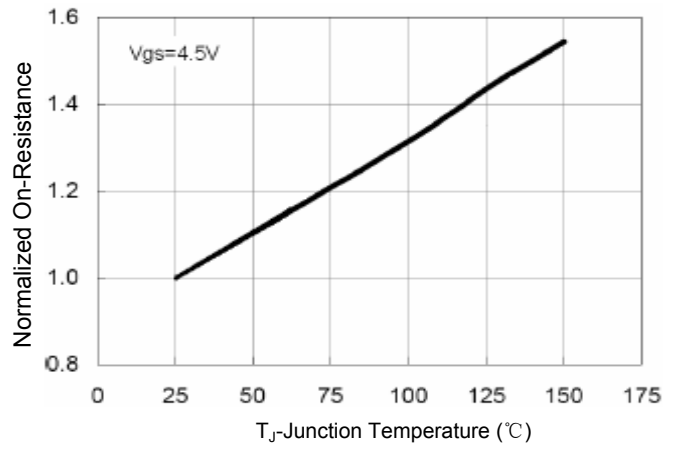


Fig-9: Rdson vs VGS

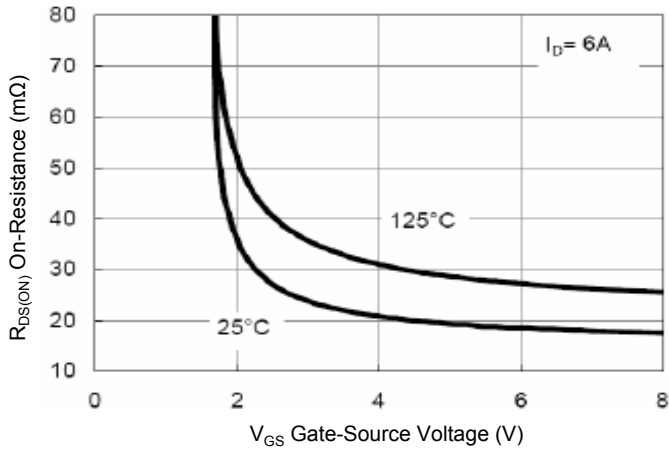


Fig-10: Capacitance vs VDS

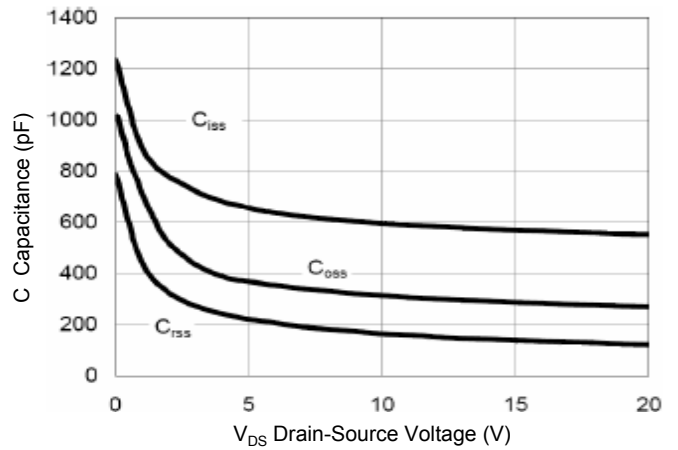


Fig-11: Gate Charge

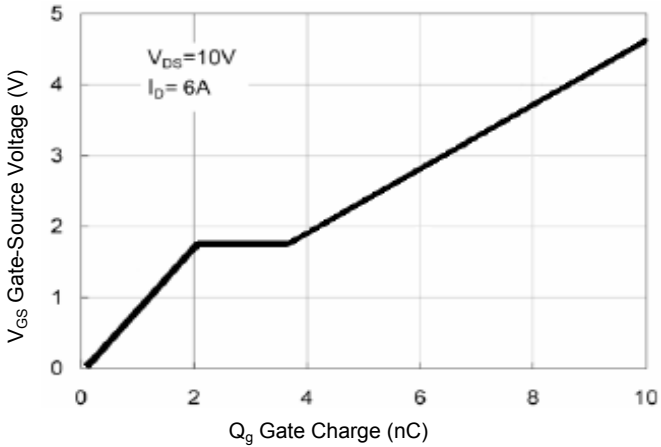


Fig-12: Source- Drain Diode Forward

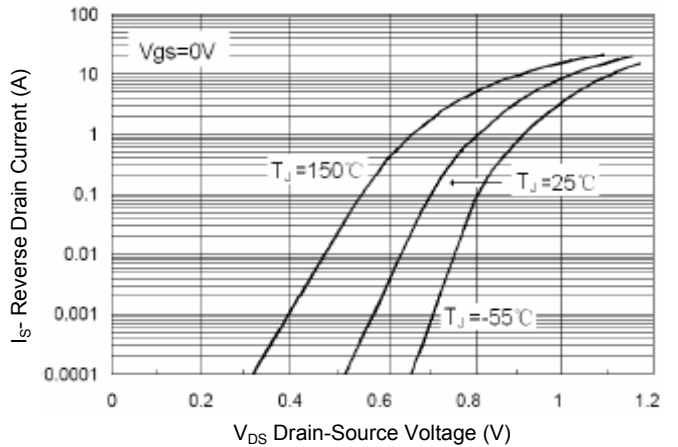


Fig-13: Safe Operation Area

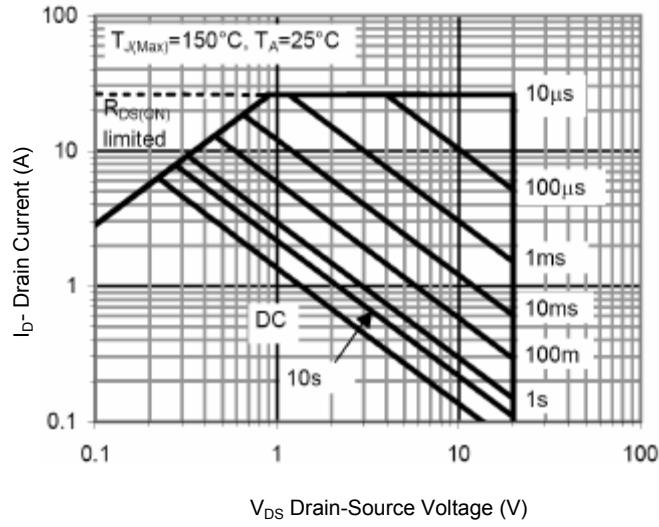
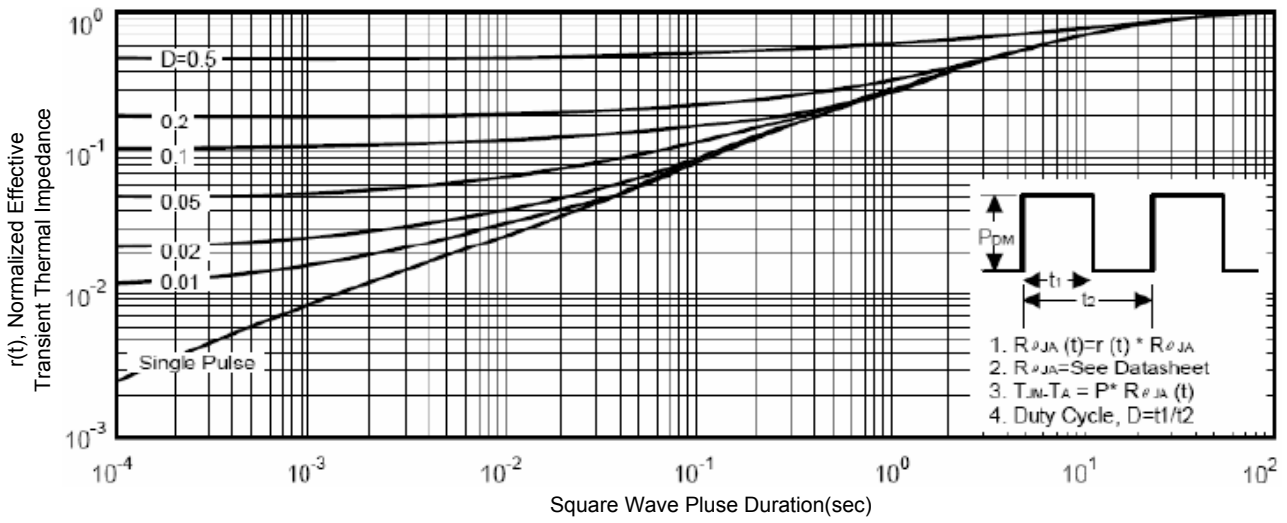


Fig-14: Normalized Maximum Transient Thermal Impedance



PACKAGE DIMENSIONS

■ TOSSOP-8 PACKAGE INFORMATION (TSSOP-8封装尺寸数据, 单位: mm)

Dimensions In Millimeters

Symbol	Dimensions In Millimeters	
	Min.	Max.
A	--	1.20
A1	0.05	0.15
b	0.19	0.30
C	0.09	0.20
D	2.90	3.10
E	6.20	6.60
E1	4.30	4.50
e	0.65 BSC	
L	0.45	0.75
S	0°	8°

Marking:



Note:
Green label is used for Pb-free packing

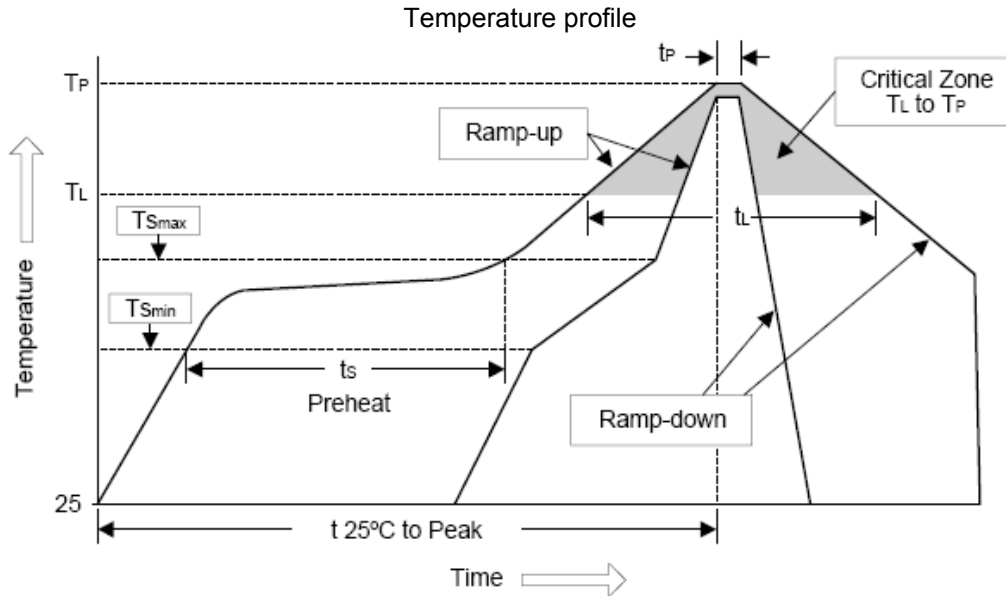
Material:
 ■ Lead solder plating:
 Sn60/Pb40 (Normal)
 Sn/3.0Ag/0.5Cu
 or Pure-Tin (Pb-free)

■ Mold Compound:
 Epoxy resin family,
 flammability solid
 burning class: UL94V-0

8-Lead TSSOP-8L Plastic
 Surface Mounted Package
 HAOHAI Package Code: TS
 Company Model: H8205A-TS

Soldering Methods for HAOHAI Products

1. Storage environment: Temperature=10°C~35°C Humidity=65%±15%
2. Reflow soldering of surface-mount devices



Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average ramp-up rate (T _L to T _P)	<3°C/sec	<3°C/sec
Preheat - Temperature Min (T _{Smin}) - Temperature Max (T _{Smax}) - Time (min to max) (t _s)	100°C 150°C 60~120 sec	150°C 200°C 60~180 sec
T _{Smax} to T _L - Ramp-up Rate	<3°C/sec	<3°C/sec
Time maintained above: - Temperature (T _L) - Time (t _L)	183°C 60~150 sec	217°C 60~150 sec
Peak Temperature (T _P)	240°C +0/-5°C	260°C +0/-5°C
Time within 50C of actual Peak Temperature (t _P)	10~30 sec	20~40 sec
Ramp-down Rate	<6°C/sec	<6°C/sec
Time 25°C to Peak Temperature	<6 minutes	<8 minutes

Flow (wave) soldering (solder dipping)

Products	Peak temperature	Dipping time
Pb devices.	245°C ±5°C	5sec ±1sec
Pb-Free devices.	260°C +0/-5°C	5sec ±1sec

Manufacturers version information
2012-01-01 . HAOHAI™ Product Data-1.0
2014-07-11 . HAOHAI™ Product Data-2.0



经中华人民共和国工商行政管理总局商标局批准

HAOHAI、HHE 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.

2 floor(whole floor), BAOXIN Building. 0 Lane on the 8th. Yufeng Garden.
82 District. BAOAN District, Shenzhen City, Guangdong Province, China.

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

<http://www.szhhe.com>

<http://www.kkg.com.cn>