CS610N3A

主要参数 MAIN CHARACTERISTICS

$I_{T(RMS)}$	6A
V_{DRM}	800V
I_{GT}	10mA

用途 APPLICATIONS

- 交流开关
- 相位控制

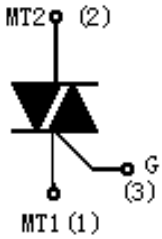
- AC switching
- Phase control

产品特性 FEATURES

- 玻璃钝化芯片，高可靠性和一致性
- 三象限可控硅，触发电流的一致性好
- 环保 RoHS 产品

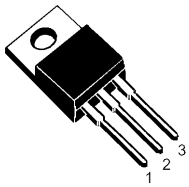
- Glass-passivated mesa chip for reliability and uniform
- Uniform gate trigger currents in three quadrants
- RoHS products
-

封装 Package

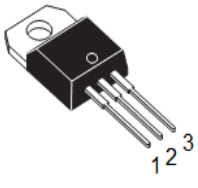


序号 Pin	引线名称 Description
1	主电极 1 MT1
2	主电极 2 MT2
3	门极 G

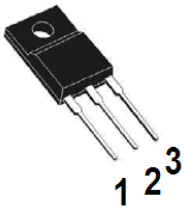
TO-220



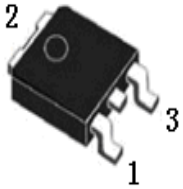
TO-220S



TO-220MF-K1

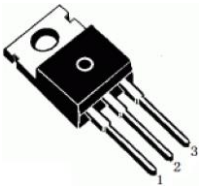


DPAK



IPAK

TO-220C



订货信息 ORDER MESSAGES

订 货 型 号 Order codes				印 记 Marking	封 装 Package
有卤-编带	无卤-编带	N/A	N/A		
Halogen-Reel	Halogen-Free-Reel	N/A	N/A		
CS610N3A-R-A	CS610N3A-R-AR	N/A	N/A	CS610N3A	DPAK
有卤-条管	无卤-条管	有卤-袋装	有卤-袋装	CS610N3A	IPAK
Halogen-Tube	halogen-Free-Tube	Halogen- Bag	Halogen-Free-Bag		
CS610N3A-V-B	CS610N3A-V-BR	CS610N3A-V-C	CS610N3A-V-CR		
有卤-条管	无卤-条管	有卤-袋装	有卤-袋装	CS610N3A	TO-220
Halogen-Tube	halogen-Free-Tube	Halogen- Bag	Halogen-Free-Bag		
CS610N3A-CA-B	CS610N3A-CA-BR	CS610N3A-CA-C	CS610N3A-CA-CR		
有卤-条管	无卤-条管	有卤-袋装	有卤-袋装	CS610N3A	TO-220C
Halogen-Tube	halogen-Free-Tube	Halogen- Bag	Halogen-Free-Bag		
CS610N3A-C-B	CS610N3A-C-BR	CS610N3A-C-C	CS610N3A-C-CR		
有卤-条管	无卤-条管	有卤-袋装	有卤-袋装	CS610N3A	TO-220S
Halogen-Tube	halogen-Free-Tube	Halogen- Bag	Halogen-Free-Bag		
CS610N3A-CB-B	CS610N3A-CB-BR	CS610N3A-CB-C	CS610N3A-CB-CR		
有卤-条管	无卤-条管	有卤-袋装	有卤-袋装	CS610N3A	TO-220MF-K1
Halogen-Tube	halogen-Free-Tube	Halogen- Bag	Halogen-Free-Bag		
CS610N3A-F1-B	CS610N3A-F1-BR	CS610N3A-F1-C	CS610N3A-F1-CR		

绝对最大额定值 ABSOLUTE RATINGS (T_C=25℃)

项 目 Parameter	符 号 Symbol	试 验 条 件 Condition	数 值 Value	单位 Unit
重复峰值断态电压 Repetitive peak off-state voltage	V_{DRM}		±800	V
通态方均根电流 On-state RMS current	$I_{T(RMS)}$	full sine wave	6	A
非重复浪涌峰值通态电流 Non-repetitive surge peak on-state current	I_{TSM}	full sine wave ,t=20ms	65	A
		full sine wave ,t=16.7ms	71	A
	I^2t	t=10ms	21	A^2s
通态电流临界上升率 Repetitive rate of rise of on-state current after triggering	dI/dt	I_{TM}=6A, I_G=0.2A, dI_G/dt=0.2A/μs	50	A/μs
峰值门极电流 Peak gate current	I_{GM}		2	A
峰值门极电压 Peak gate voltage	V_{GM}		5	V
峰值门极功率 Peak gate power	P_{GM}		5	W
平均门极功率 Average gate power	$P_{G(AV)}$	over any 20ms period	0.5	W
存储温度 Storage temperature	T_{stg}		-40~150	℃
操作结温 Operation junction temperature	T_{VJ}		125	℃

电特性 ELECTRICAL CHARACTERISTIC (T_C=25℃)

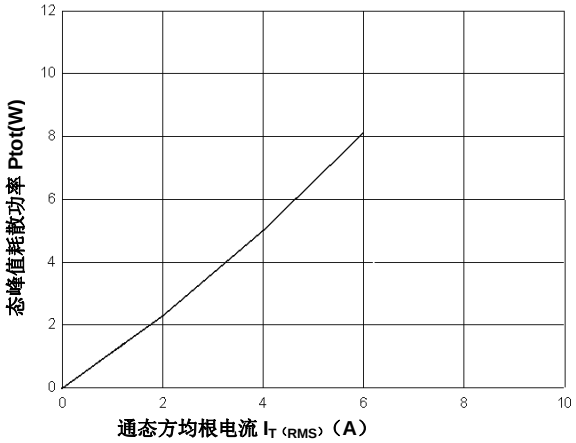
项 目 Parameter	符 号 Symbol	测 试 条 件 Condition		最小 Min	典型 Typ	最大 Max	单位 Unit
峰值重复断态电流 Peak Repetitive Blocking Current	I_{DRM}	V_{DM}=800V, Tj=125℃, gate open		-	-	0.5	mA
峰值通态电压 Peak on-state voltage	V_{TM}	I_{TM}=8A		-	1.35	1.65	V
门极触发电流 Gate trigger current	I_{GT}	V_{DM}=12V, R_L=100Ω	MT1(-),MT2(+),G(+)	-	-	10	mA
			MT1(-),MT2(+),G(-)	-	-	10	mA
			MT1(+),MT2(-),G(-)	-	-	10	mA
门极触发电压 Gate trigger voltage	V_{GT}	V_{DM}=12V, R_L=100Ω	MT1(-),MT2(+),G(+)	-	0.7	1.5	V
			MT1(-),MT2(+),G(-)	-	0.7	1.5	V
			MT1(+),MT2(-),G(-)	-	0.7	1.5	V
维持电流 Holding current	I_H	V_{DM}=12V, I_{GT}=0.1A		-	-	25	mA
擎住电流 Latching current	I_L	V_{DM}=12V, I_{GT}=0.1A	MT1(-),MT2(+),G(+)	-	-	35	mA
			MT1(-),MT2(+),G(-)	-	-	35	mA
			MT1(+),MT2(-),G(-)	-	-	35	mA
断态临界电压上升率 Rise of off- state voltage	dV/dt	V_{DM}=67% $V_{DRM(MAX)}$, Tj=125℃, gate open		10	-	-	V/μs
门极开通时间 Gate controlled turn-on time	tgt	I_{TM}=6A, V_{DM}=$V_{DRM(MAX)}$, I_G=0.1A, dI_G/dt=5A/μS		-	2	-	μs

热特性 THERMAL CHARACTERISTIC

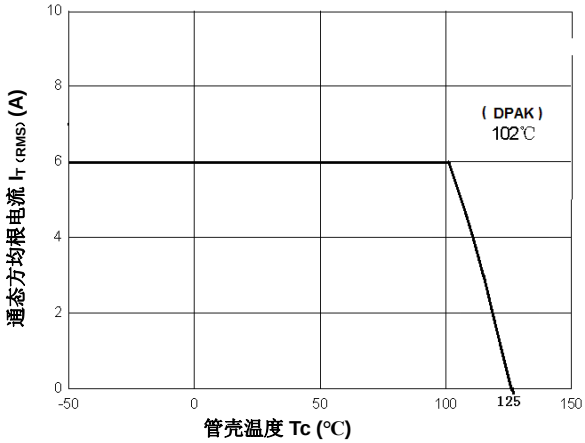
项 目 Parameter	符 号 Symbol	条 件 Condition	最小 Min	典型 Typ	最大 Max	单位 Unit
结到管壳的热阻 Thermal resistance junction to case	$R_{th(j-c)}$	full cycle(DPAK\IPAK)			2.0	℃/W
		full cycle(TO-220S\TO-220)			2.8	℃/W
		full cycle(TO-220MF-K1)			4.1	℃/W

特征曲线 ELECTRICAL CHARACTERISTICS (curves)

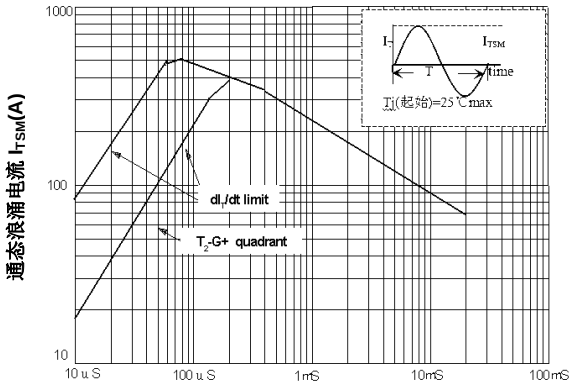
P_{tot}- $I_{T(RMS)}$



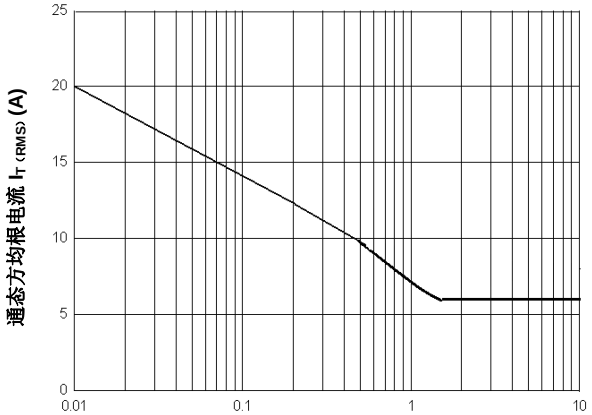
$I_{T(RMS)}$ - T_c



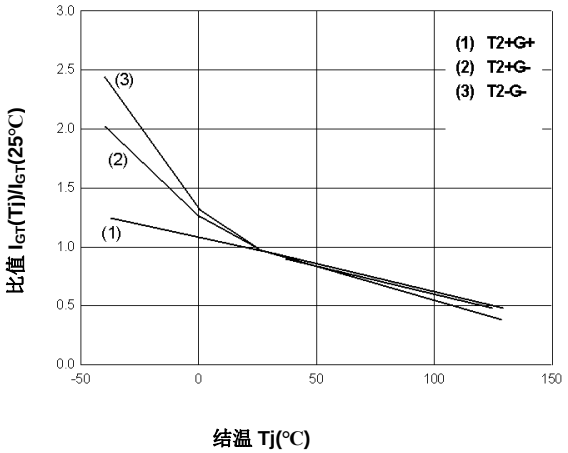
I_{TSM} - tp



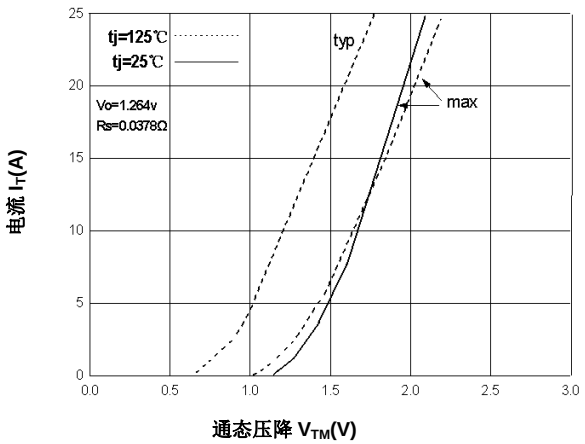
$I_{T(RMS)}$- ts



$I_{GT}(Tj)/I_{GT}(25℃)$ - Tj

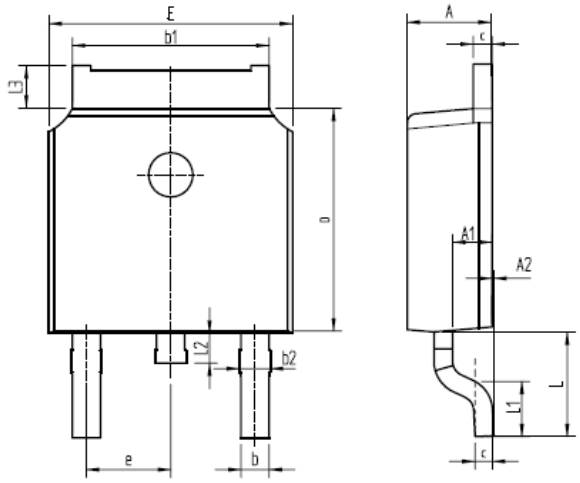


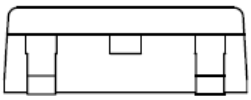
V_{TM} - I_T

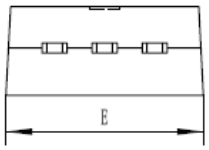


外形尺寸 PACKAGE MECHANICAL DATA

DPAK **单位 Unit ： mm**

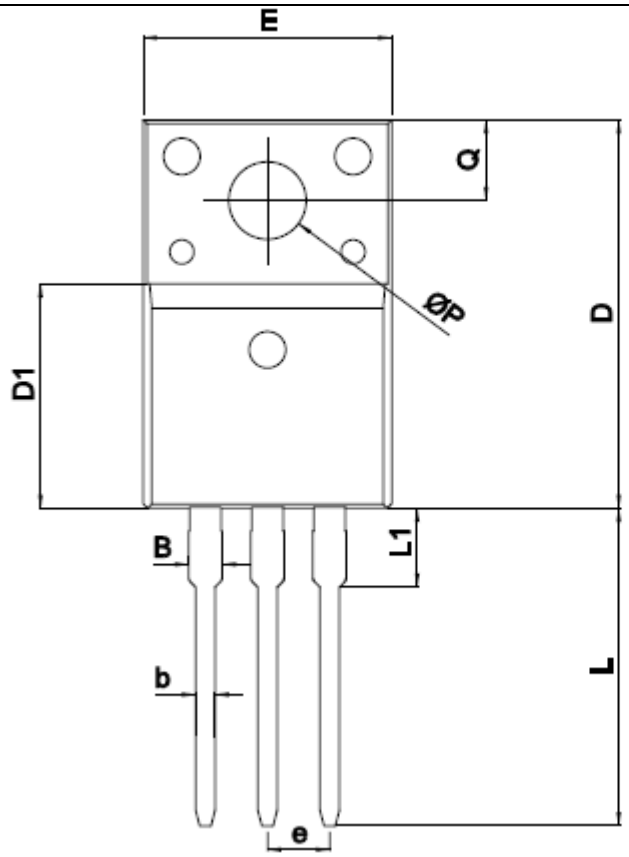






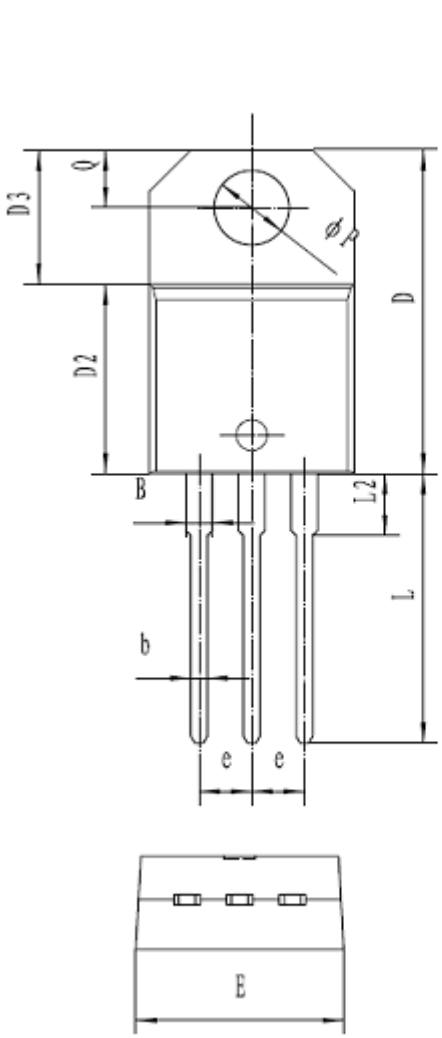
SYMBOL	mm	
	MIN	MAX
A	2.16	2.41
A1	0.97	1.17
A2	0.00	0.15
b	0.63	0.93
b1	5.13	5.53
b2	0.66	0.96
c	0.40	0.60
D	5.80	6.40
E	6.30	6.90
e	2.286BSC	
L	2.50	3.30
L1	1.20	1.80
L2	0.60	1.00
L3	0.85	1.30

TO-220MF-K1 单位 **Unit ： mm**



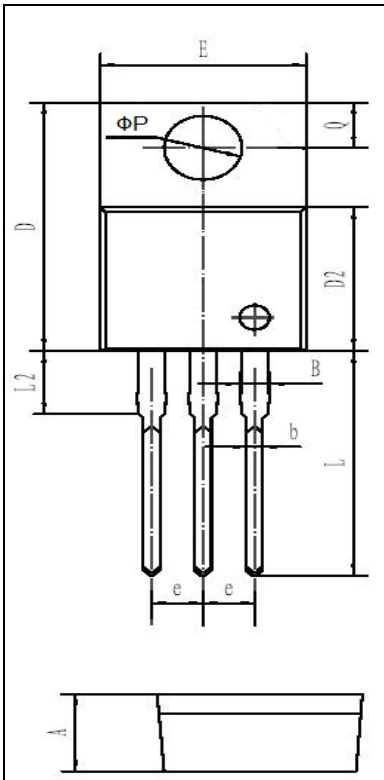
SYMBOL	mm	
	MIN	MAX
A	4.5	4.9
B	1.22	1.47
b	0.7	0.9
c	0.45	0.60
D	15.6	16.1
D1	9.0	9.3
e	2.54TYPE	
E	9.9	10.4
F	2.3	2.8
L	12.6	13.3
L1	3.1	3.4
Q	3.2	3.4
Q1	2.6	2.9
ΦP	3.0	3.5

TO-220S **单位 Unit ： mm**



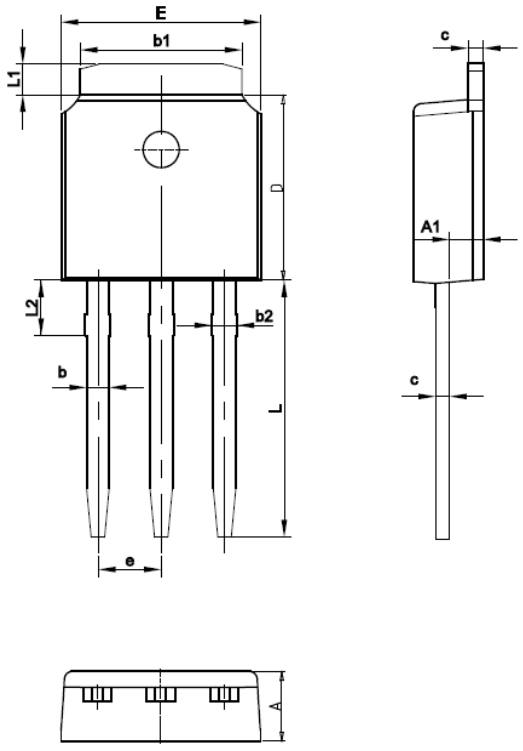
符号 symbol	MIN	MAX
A	4.40	4.60
B	1.14	1.70
b	0.61	0.88
C	0.47	0.70
D	15.20	15.90
D2	8.60	9.70
D3	6.20	6.60
E	10.00	10.40
e	2.40	2.70
F	1.23	1.32
L	13.00	14.00
L2	typ. 3.75	
Q	2.65	2.95
Q1	2.89	3.42
P	3.72	3.85

TO-220 **单位 Unit ： mm**



符号 symbol	MIN	MAX
A	4.40	4.80
B	1.10	1.40
b	0.70	0.95
c	0.28	0.48
c1	0.32	0.52
D	14.45	16.00
D2	8.20	9.20
E	9.60	10.40
e	2.39	2.69
F	1.20	1.35
L	13.05	14.05
L2	3.70	3.90
Q	2.40	3.00
Q1	2.20	2.90
P	3.50	4.00

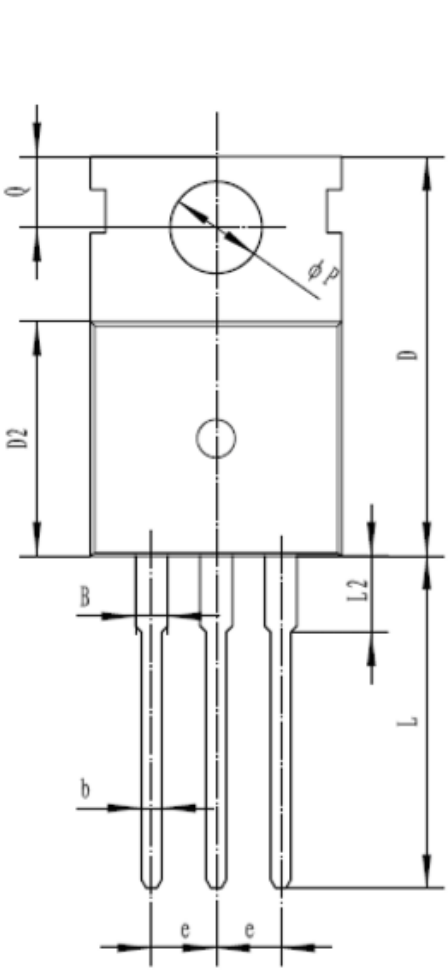
IPAK **单位 Unit ： mm**

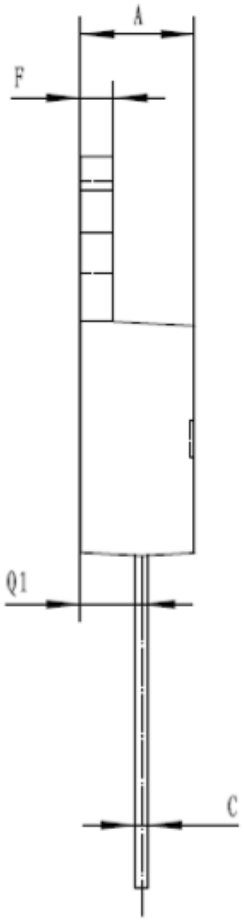


SYMBOL	MM	
	MIN	MAX
A	2.10	2.50
A1	0.87	1.27
b	0.63	0.93
b1	5.13	5.53
b2	0.67	1.00
c	0.40	0.60
D	5.80	6.40
E	6.30	6.90
L	9.10	9.70
e	2.286BSC	
L1	0.82	1.22
L2	0.90	1.20

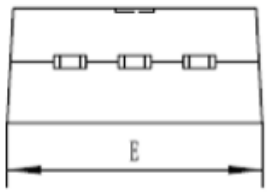
TO-220C

单位 Unit ： mm





符号 symbol	MIN	MAX
A	4.30	4.70
B	1.22	1.40
b	0.70	0.95
c	0.40	0.65
D	15.20	16.20
D2	9.00	9.40
E	9.70	10.10
e	2.39	2.69
F	1.25	1.40
L	12.60	13.60
L2	2.80	3.20
Q	2.60	3.00
Q1	2.20	2.60
P	3.50	3.80



注意事项

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3. 在电路设计时请不要超过器件的绝对最大额定值，否则会影响整机的可靠性。
4. 本说明书如有版本变更不另外告知。

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2. We strongly recommend customers check carefully on the trademark when buying our product, if there is any question, please don't be hesitate to contact us.
3. Please do not exceed the absolute maximum ratings of the device when circuit designing.
4. Jilin Sino-microelectronics co., Ltd reserves the right to make changes in this. specification sheet and is subject to change without prior notice.

联系方式

吉林华微电子股份有限公司

公司地址：吉林省吉林市深圳街 99 号

邮编：132013

总机：86-432-64678411

传真：86-432-64665812

网址：www.hwdz.com.cn

CONTACT

JILIN SINO-MICROELECTRONICS CO., LTD.

ADD: No.99 Shenzhen Street, Jilin City, Jilin Province, China.

Post Code: 132013

Tel： 86-432-64678411

Fax：86-432-64665812

Web Site：www.hwdz.com.cn