



3FT4C/F/M/U

主要参数 MAIN CHARACTERISTICS

$I_{T(RMS)}$	4A
V_{DRM}	600V or 800V
I_{GT}	10mA

用途

- 交流开关
- 相位控制

APPLICATIONS

- AC switching
- Phase control

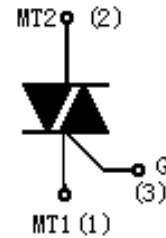
产品特性

- 玻璃钝化芯片，高可靠性和一致性
- 低通态电流和高浪涌电流能力
- 环保 RoHS 产品

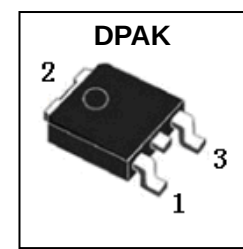
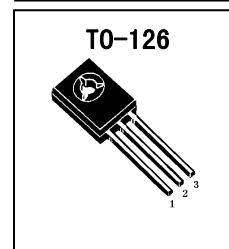
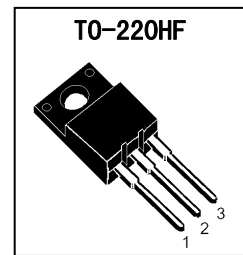
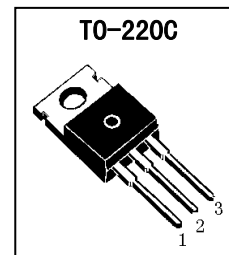
FEATURES

- Glass-passivated mesa chip for reliability and uniform
- Low on-state voltage and High I_{TSM}
- 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



订货信息 ORDER MESSAGES

订货型号 Order code	印记 Marking	封装 Package	包装 Packaging
3FT4C-O-C-N-B	3FT4C	TO-220C	条管 Tube
3FT4F-O-HF-N-B	3FT4F	TO-220HF	条管 Tube
3FT4M-O-M-N-C	3FT4M	TO-126	袋装 Bag
3FT4U-O-U-B-A	3FT4U	DPAK	编带 Tape

概述 GENERAL DESCRIPTION

3FT4C/F/M/U是玻璃钝化芯片结构的四象限双向晶闸管。器件封装形式有TO-220C、TO-220HF、TO-126和DPAK。

3FT4C/F/M/U are Glass passivated four quadrant triacs. Available packages are TO-220C、TO-220HF、TO-126 and DPAK.



绝对最大额定值 ABSOLUTE RATINGS ($T_c=25^{\circ}\text{C}$)

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}		± 600 ± 800	V
通态方均根电流 On-state RMS current	$I_{\text{T(RMS)}}$	full sine wave	4	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	25	A
		full sine wave ,t=16.7ms	27	A
	I^2t	t=10ms	3.1	A^2s
通态电流临界上升率 Repetitive rate of rise of on-state current after triggering	di/dt	$I_{\text{TM}}=6\text{A}$, $I_{\text{G}}=0.2\text{A}$, $di_{\text{G}}/dt=0.2\text{A}/\mu\text{s}$	50	$\text{A}/\mu\text{s}$
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	$P_{\text{G(AV)}}$	over any 20ms period	0.5	W
存储温度 Storage temperature	T_{stg}		-40~150	$^{\circ}\text{C}$
操作结温 Operation junction temperature	T_{VJ}		125	$^{\circ}\text{C}$



电特性 ELECTRICAL CHARACTERISTIC ($T_c=25^{\circ}\text{C}$)

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}	$V_{\text{DM}}=V_{\text{DRM}}$, $T_j=25^{\circ}\text{C}$, gate open		-	-	10	μA
		$V_{\text{DM}}=V_{\text{DRM}}$, $T_j=125^{\circ}\text{C}$, gate open		-	-	0.5	mA
峰值通态电压 Peak on-state voltage	V_{TM}	$I_{\text{TM}}=5\text{A}$		-	-	1.7	V
门极触发电流 Gate trigger current	I_{GT}	$V_{\text{DM}}=12\text{V}$, $R_L=100\ \Omega$	MT1(-),MT2(+),G(+)	-	-	10	mA
			MT1(-),MT2(+),G(-)	-	-	10	mA
			MT1(+),MT2(-),G(-)	-	-	10	mA
			MT1(+),MT2(-),G(+)	-	-	45	mA
门极触发电压 Gate trigger voltage	V_{GT}	$V_{\text{DM}}=12\text{V}$, $R_L=100\ \Omega$	MT1(-),MT2(+),G(+)	-	-	1.5	V
			MT1(-),MT2(+),G(-)	-	-	1.5	V
			MT1(+),MT2(-),G(-)	-	-	1.5	V
			MT1(+),MT2(-),G(+)	-	-	2.0	V
维持电流 Holding current	I_{H}	$V_{\text{DM}}=12\text{V}$, $I_{\text{GT}}=0.1\text{A}$		-	-	15	mA
擎住电流 Latching current	I_{L}	$V_{\text{DM}}=12\text{V}$, $I_{\text{GT}}=0.1\text{A}$		-	-	30	mA
断态临界电压上升率 Rise of off- state voltage	dV/dt	$V_{\text{DM}}=67\% V_{\text{DRM(MAX)}}$, $T_j=125^{\circ}\text{C}$, gate open		-	50	-	$\text{V}/\mu\text{s}$
门极开通时间 Gate controlled turn-on time	t_{gt}	$I_{\text{TM}}=6\text{A}$, $V_{\text{DM}}=V_{\text{DRM(MAX)}}$, $I_{\text{G}}=0.1\text{A}$, $dI_{\text{G}}/dt=5\text{A}/\mu\text{s}$		-	2	-	μs

热特性 THERMAL CHARACTERISTIC

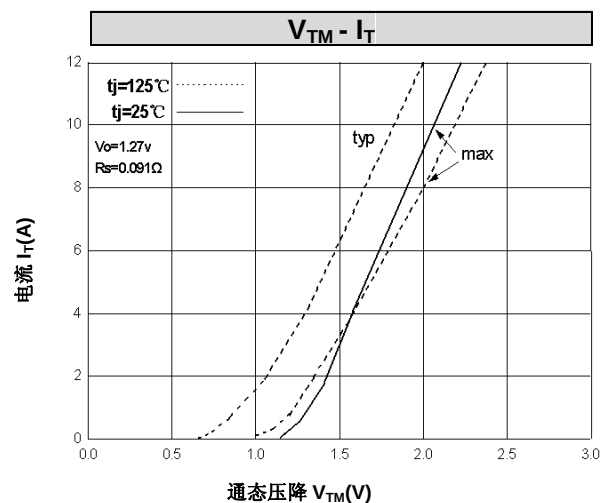
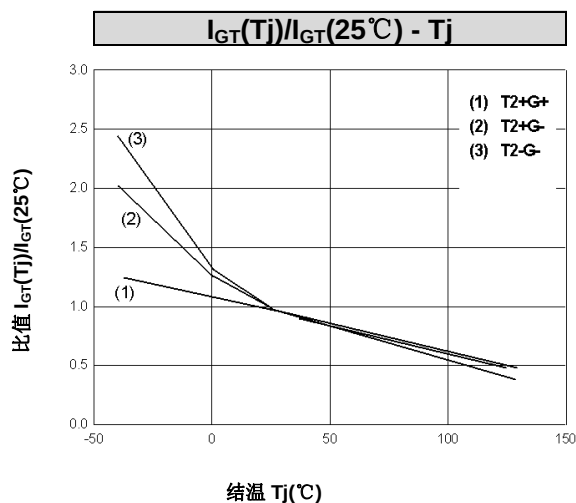
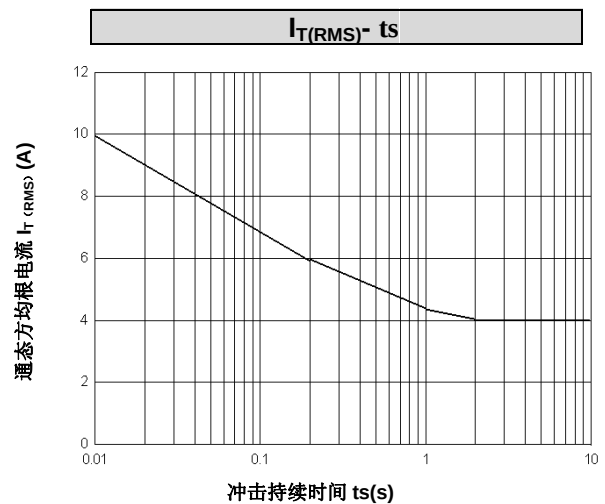
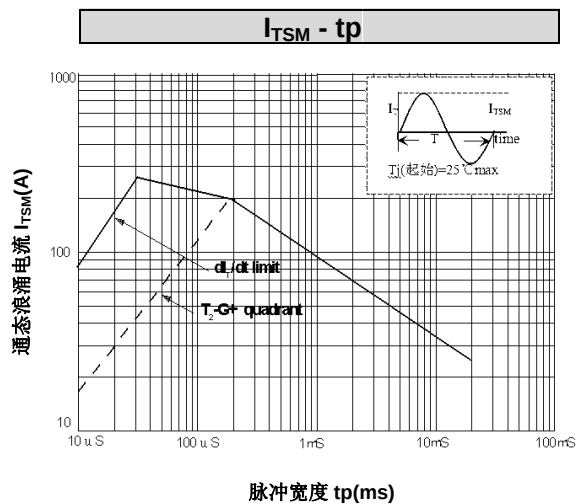
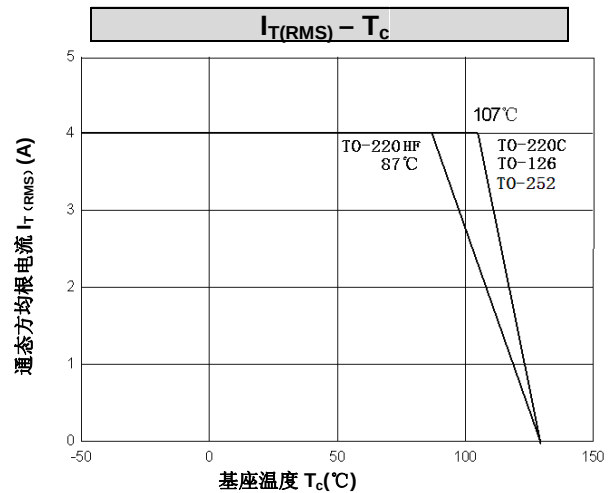
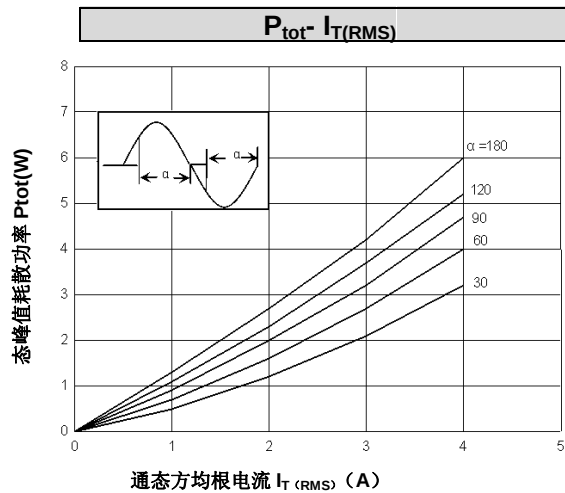
项 目 Parameter	符 号 Symbol	条 件 Condition	最小 Min	典型 Typ	最大 Max	单位 Unit
结到管壳的热阻 Thermal resistance junction to case	$R_{\text{th(j-c)}}$	full cycle (TO-220C/TO-126/TO-252)			3.0	$^{\circ}\text{C}/\text{W}$
		full cycle(TO-220HF)			5.5	$^{\circ}\text{C}/\text{W}$

电绝缘特性 ELECTRICAL ISOLATION

项 目 Parameter	符 号 Symbol	条 件 Condition	数 值 Value	单位 Unit
绝缘电压 Isolation voltage	V_{ISOL}	1 minute, leads to mounting tab TO-220HF	2000	V



特征曲线 ELECTRICAL CHARACTERISTICS (curves)

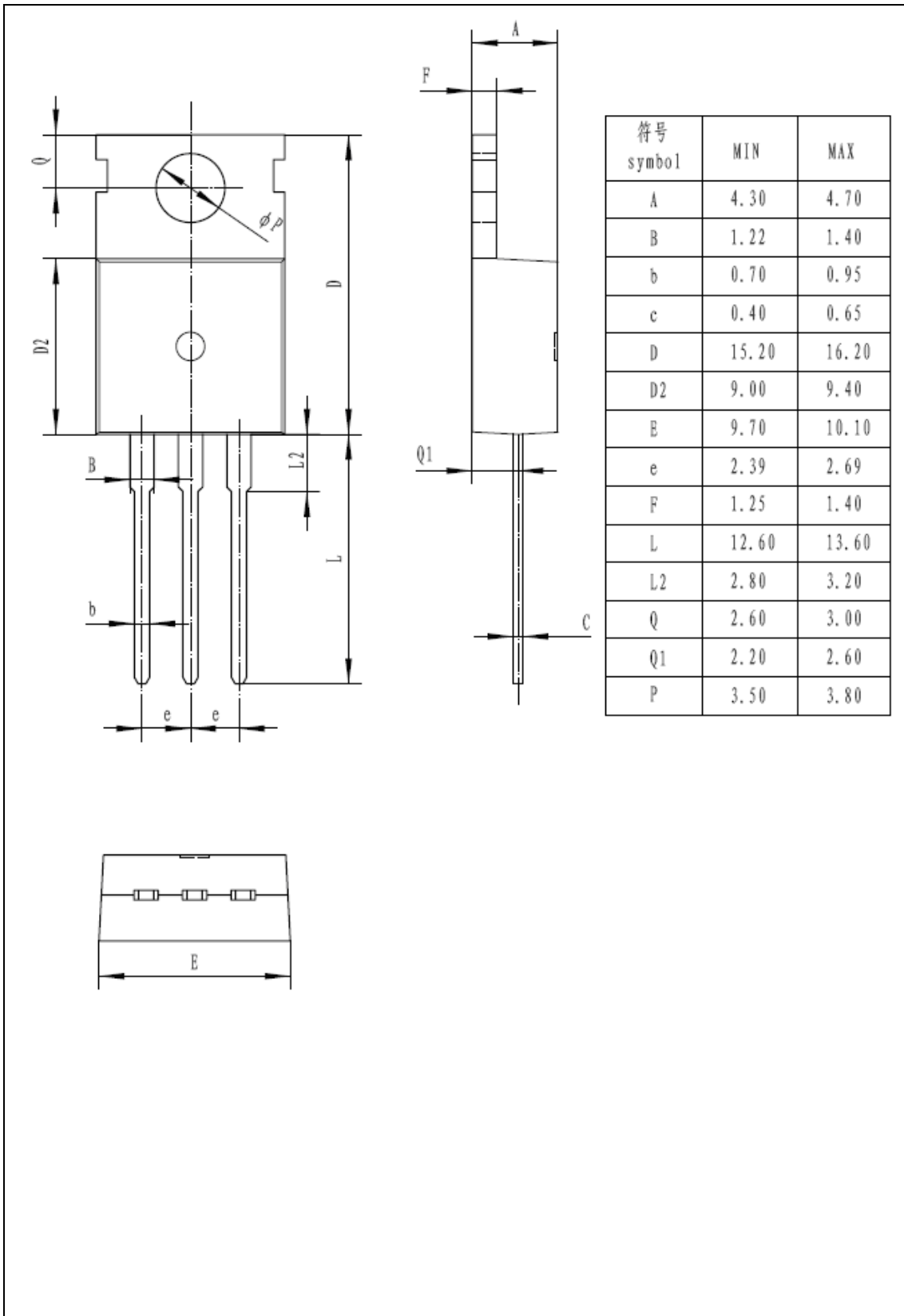




外形尺寸 PACKAGE MECHANICAL DATA

TO-220C

单位 Unit : mm



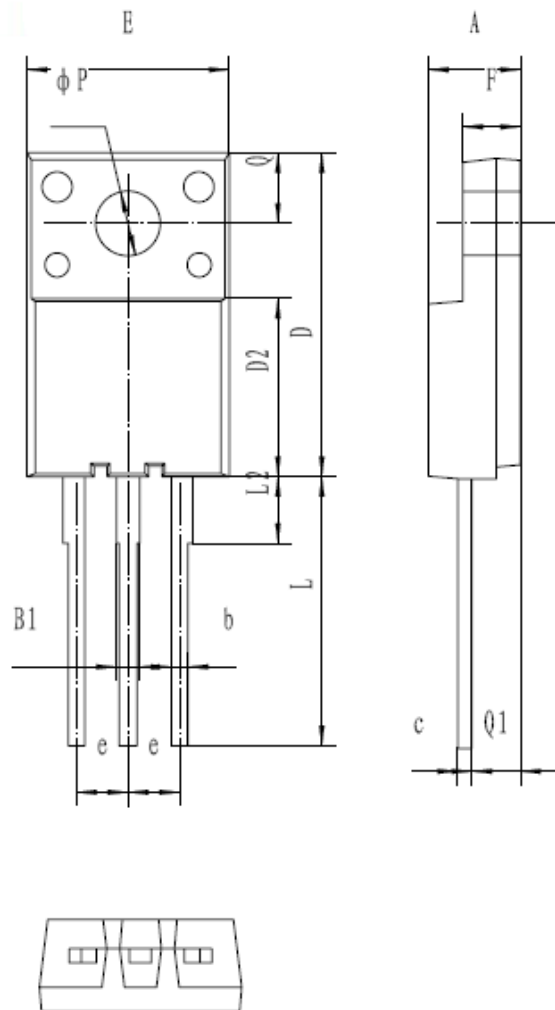


3FT4C/F/M/U

外形尺寸 PACKAGE MECHANICAL DATA

TO-220HF

单位 Unit : mm



符号 symbol	MIN	MAX
A	4.0	5.0
B1	0.87	1.27
b	0.72	0.92
c	0.5	0.7
D	15.0	16.5
D2	7.8	9.4
E	9.62	10.62
e	2.54 TYP	
F	2.3	3.3
L	13.0	14.0
L2	3.1	3.5
ϕP	3.0	3.4
Q	3.15	3.55
Q1	2.2	2.5



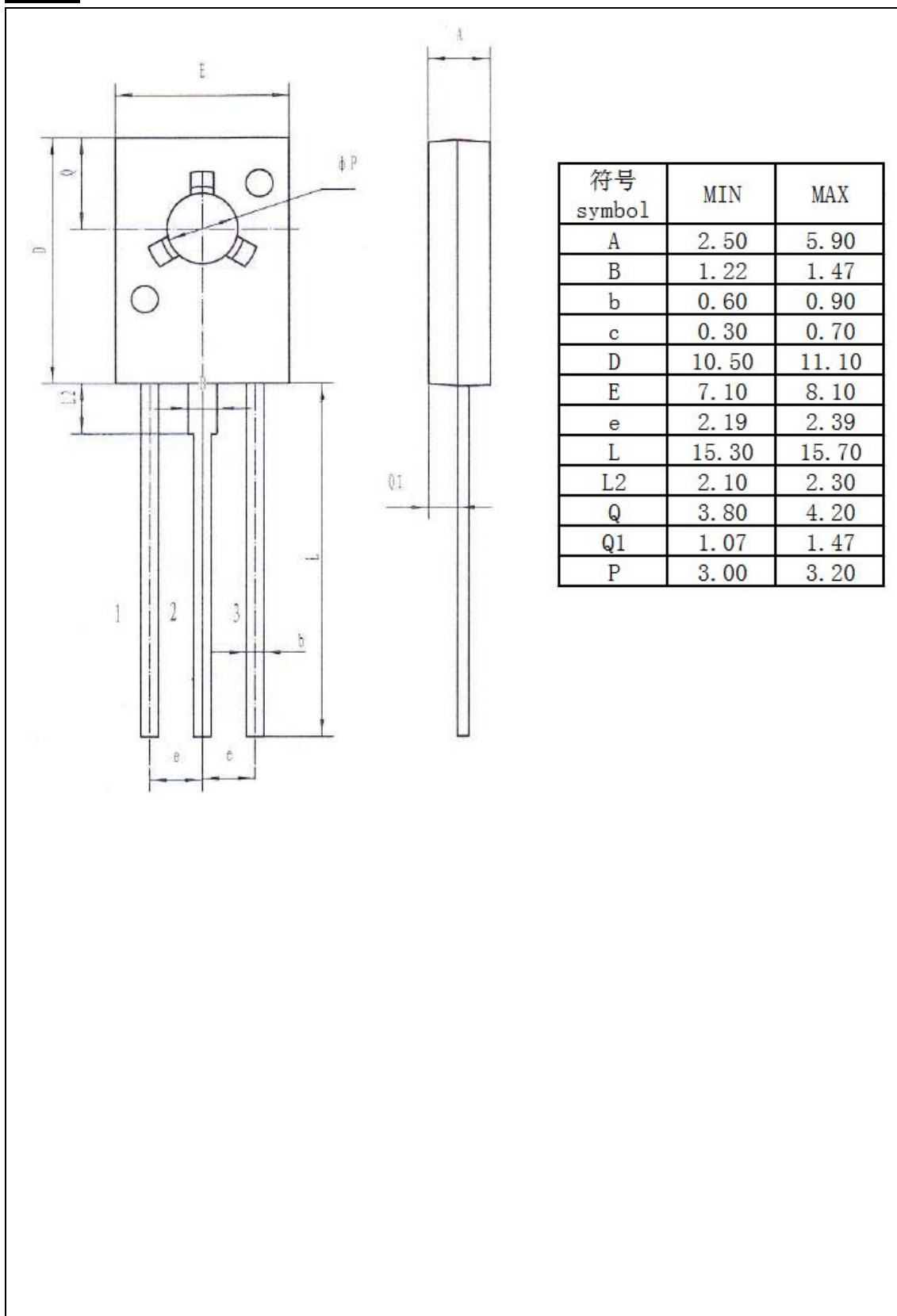


3FT4C/F/M/U

外形尺寸 PACKAGE MECHANICAL DATA

TO-126

单位 Unit : mm

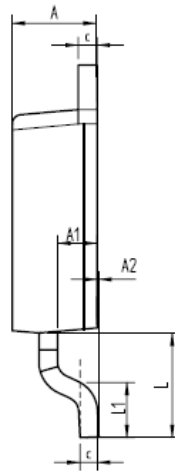
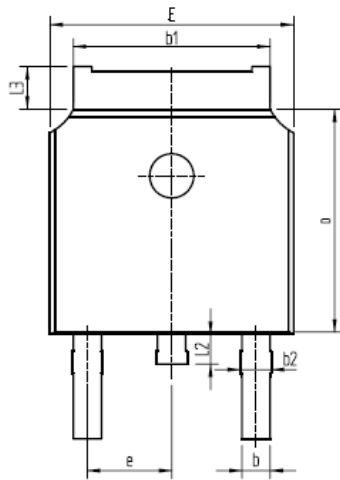




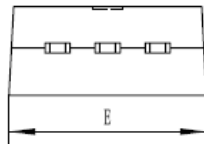
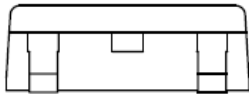
外形尺寸 PACKAGE MECHANICAL DATA

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



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附录（Appendix）：修订记录（Revision History）

日期 Date	旧版本 Last Rev.	新版本 New Rev.	修订内容 Description of Changes
2014-4-21	201112G	201404H	更新 DPAK 外形
2015-1-10	201404H	201501I	更新 DPAK 管腿间距
2015-10-21	201501I	201510J	更改热阻、外形图

