



# 3TT25Z/C/S/J/F/AB/F1

## 主要参数 MAIN CHARACTERISTICS

$I_T(RMS)$	25A
$V_{DRM}$	800V
$I_{GT}$	50mA

## 用途

- 交流开关
- 相位控制

## APPLICATIONS

- AC switching
- Phase control

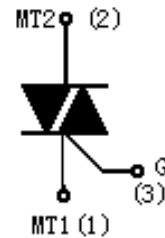
## 产品特性

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

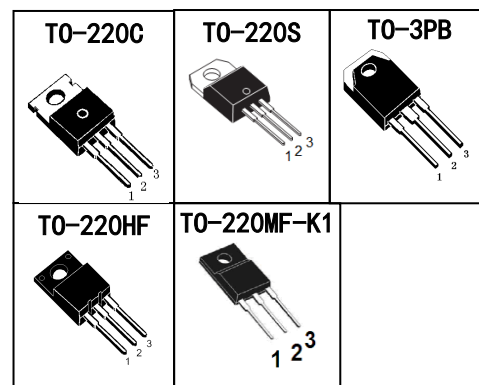
## FEATURES

- 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



## 订货信息 ORDER MESSAGES

订货型号 Order codes				印 记 Marking	封 装 Package
有卤-条管	无卤-条管	有卤-袋装	无卤-袋装		
Halogen-Tube	Halogen-Free-Tube	Halogen-Bag	Halogen-Free-Bag		
3TT25C-C-B	3TT25C-C-BR	3TT25C-C-C	3TT25C-C-CR	3TT25C	T0-220C
3TT25J-FA-B	3TT25J-FA-BR	3TT25J-FA-C	3TT25J-FA-CR	3TT25J	T0-220S
3TT25F-F1-B	3TT25F-F1-BR	3TT25F-F1-C	3TT25F-F1-CR	3TT25F	T0-220HF
3TT25F1-F1-B	3TT25F1-F1-BR	3TT25F1-F1-C	3TT25F1-F1-CR	3TT25F1	T0-220MF-K1
3TT25AB-GD-B	3TT25AB-GD-BR	N/A	N/A	3TT25AB	T0-3PB

**概述 GENERAL DESCRIPTION**

3TT25Z/C/S/J/F/AB/F1是玻璃钝化芯片结构的三象限双向晶闸管，产品在第四象限不可触发，具有较高的使用可靠性。可适用于容易出现较高dV/dt或dI/dt的交流全波控制线路中，特别推荐应用与电感性负载控制（如电机控制线路）。器件封装形式有TO-220C、TO-220S（引线与散热片绝缘）、TO-220HF（塑料全包封）、TO-3PB、TO-220MF-K1（塑料全包封）。

3TT25Z/C/S/J/F/AB/F1 are Glass passivated three quadrant triacs, designed for high performance full-wave ac control applications where high static and dynamic dV/dt and high dI/dt can occur. They are specially recommended for use on inductive loads such as motor control circuits. Available packages are TO-220C、TO-220S (internally isolated) 、TO-220HF (plastic envelope) TO-3PB and TO-220MF-K1 (plastic envelope).

**绝对最大额定值 ABSOLUTE RATINGS (Tc=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,	25	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	190	A
		full sine wave ,t=16.7ms	209	A
	$I^2t$	t=10ms	180	A <sup>2</sup> s
通态电流临界上升率 Repetitive rate of rise of on-state current after triggering	dI/dt	$I_{TM}=30A, I_G=0.2A,$ $dI_G/dt=0.2A/\mu s$	100	A/ $\mu s$
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	$P_{G(AV)}$	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<sub>C</sub>=25°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 <sub>DRM</sub>	V <sub>DM</sub> =V <sub>DRM</sub> , T <sub>j</sub> =25°C, gate open	-	-	10	μA
		V <sub>DM</sub> =V <sub>DRM</sub> , T <sub>j</sub> =125°C, gate open	-	-	3.0	mA
峰值通态电压 Peak on-state voltage	V <sub>TM</sub>	I <sub>TM</sub> =30A	-	-	1.7	V
门极触发电流 Gate trigger current	I <sub>GT</sub>	V <sub>DM</sub> =12V, MT1(-),MT2(+),G(+)	5	-	50	mA
		R <sub>L</sub> =100 Ω, MT1(-),MT2(+),G(-)	5	-	50	mA
		Ω, MT1(+),MT2(-),G(-)	5	-	50	mA
门极触发电压 Gate trigger voltage	V <sub>GT</sub>	V <sub>DM</sub> =12V, MT1(-),MT2(+),G(+)	-	0.7	1.5	V
		R <sub>L</sub> =100 Ω, MT1(-),MT2(+),G(-)	-	0.7	1.5	V
		Ω, MT1(+),MT2(-),G(-)	-	0.7	1.5	V
维持电流 Holding current	I <sub>H</sub>	V <sub>DM</sub> =12V, I <sub>GT</sub> =0.1A	-	-	50	mA
擎住电流 Latching current	I <sub>L</sub>	V <sub>DM</sub> =12V, MT1(-),MT2(+),G(+)	-	-	60	mA
		I <sub>GT</sub> =0.1A, MT1(-),MT2(+),G(-)	-	-	90	mA
		MT1(+),MT2(-),G(-)	-	-	60	mA
断态临界电压上升率 Rise of off- state voltage	dV/dt	V <sub>DM</sub> =67% V <sub>DRM(MAX)</sub> , T <sub>j</sub> =125°C, gate open	1000	-	-	V/μs
门极开通时间 Gate controlled turn-on time	tgt	I <sub>TM</sub> =30A, V <sub>DM</sub> =V <sub>DRM(MAX)</sub> , I <sub>G</sub> =0.1A, dl <sub>G</sub> /dt=5A/μS	-	2	-	μs

## 热特性 THERMAL CHARACTERISTIC

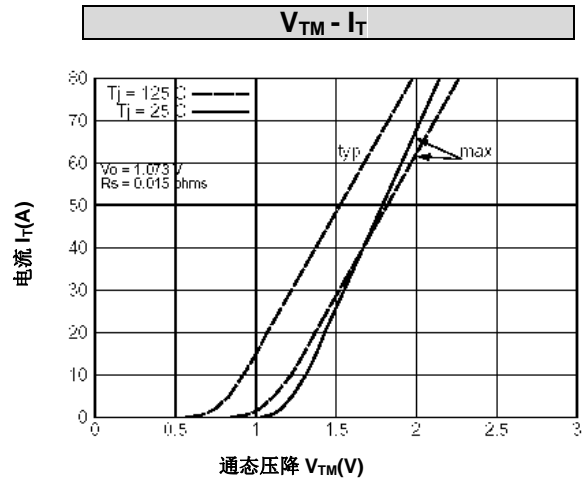
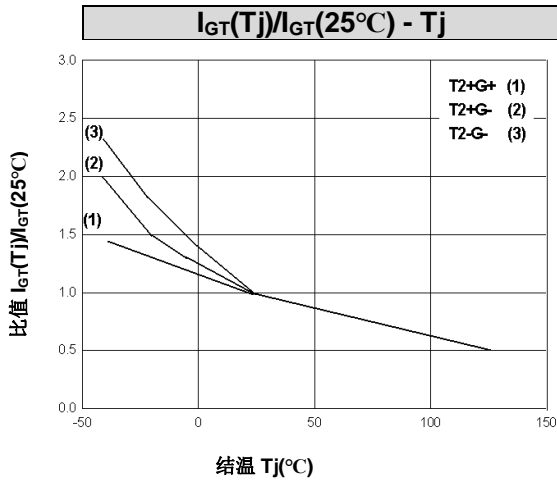
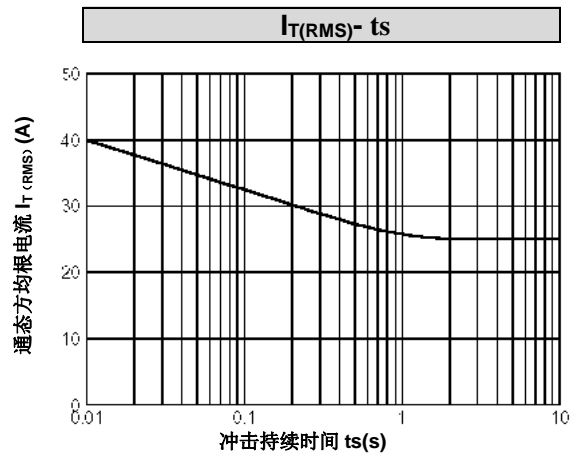
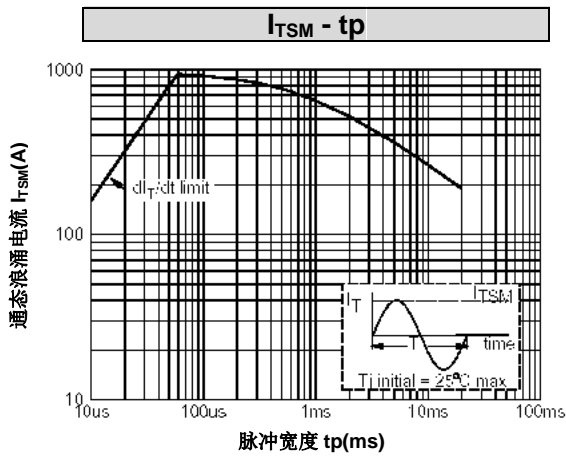
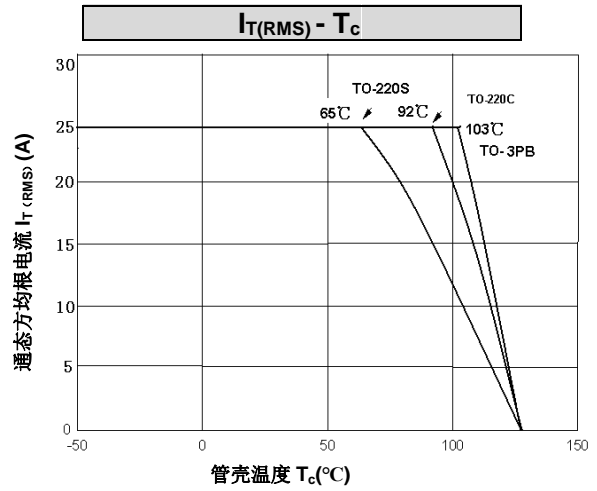
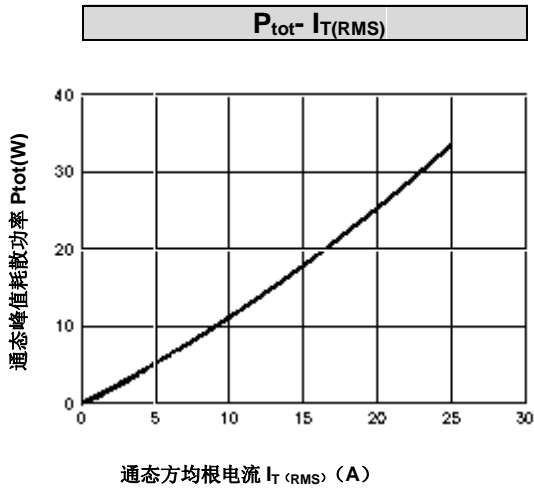
项 目 Parameter	符 号 Symbol	条 件 Condition	最小 Min	典型 Typ	最大 Max	单位 Unit
结到管壳的热阻 Thermal resistance junction to case	R <sub>th(j-c)</sub>	full cycle(TO-220C)			1.0	°C/W
		full cycle(TO-220S)			1.8	°C/W
		full cycle(TO-220HF/TO-220MF-K1)			2.8	°C/W
		full cycle(TO-3PB)			0.6	°C/W

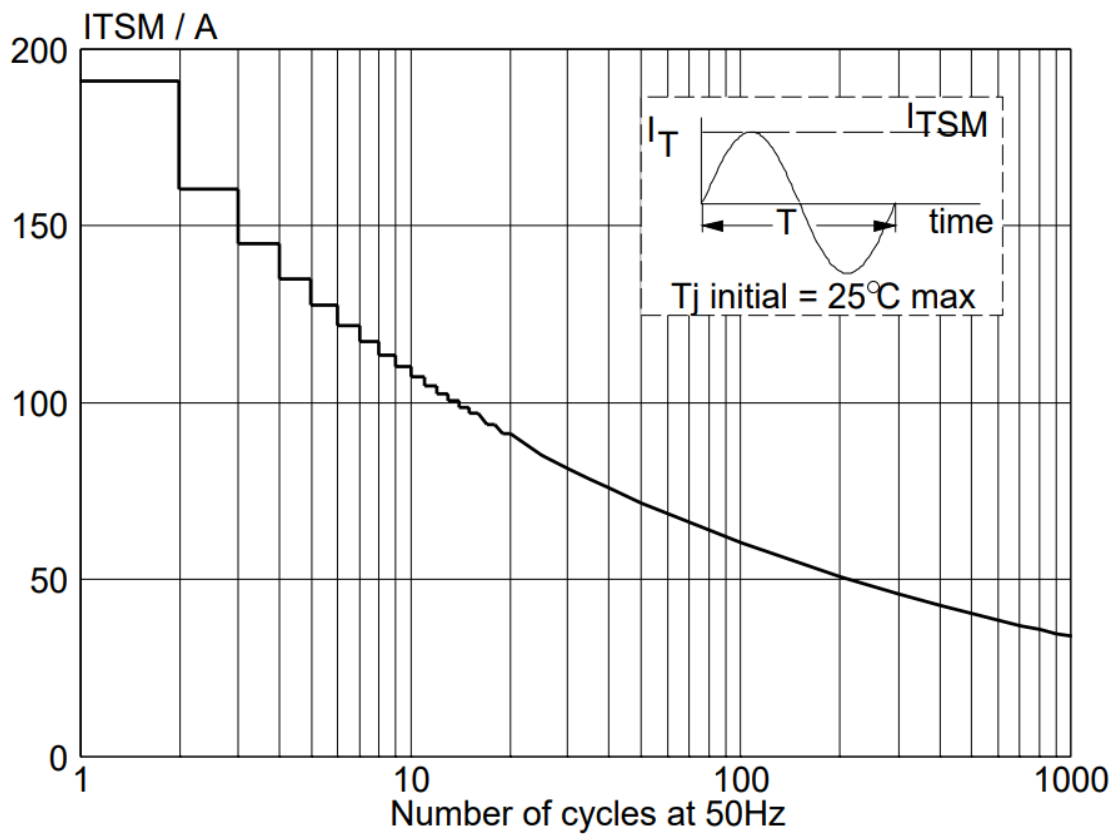
## 电绝缘特性 ELECTRICAL ISOLATION

项 目 Parameter	符 号 Symbol	条 件 Condition	数 值 Value	单位 Unit
绝缘电压 Isolation voltage	V <sub>ISOL</sub>	1 minute, leads to mounting tab TO-220S	2000	V
		1 minute, leads to mounting tab (TO-220HF/TO-220MF-K1)	2000	V



特征曲线 ELECTRICAL CHARACTERISTICS (curves)



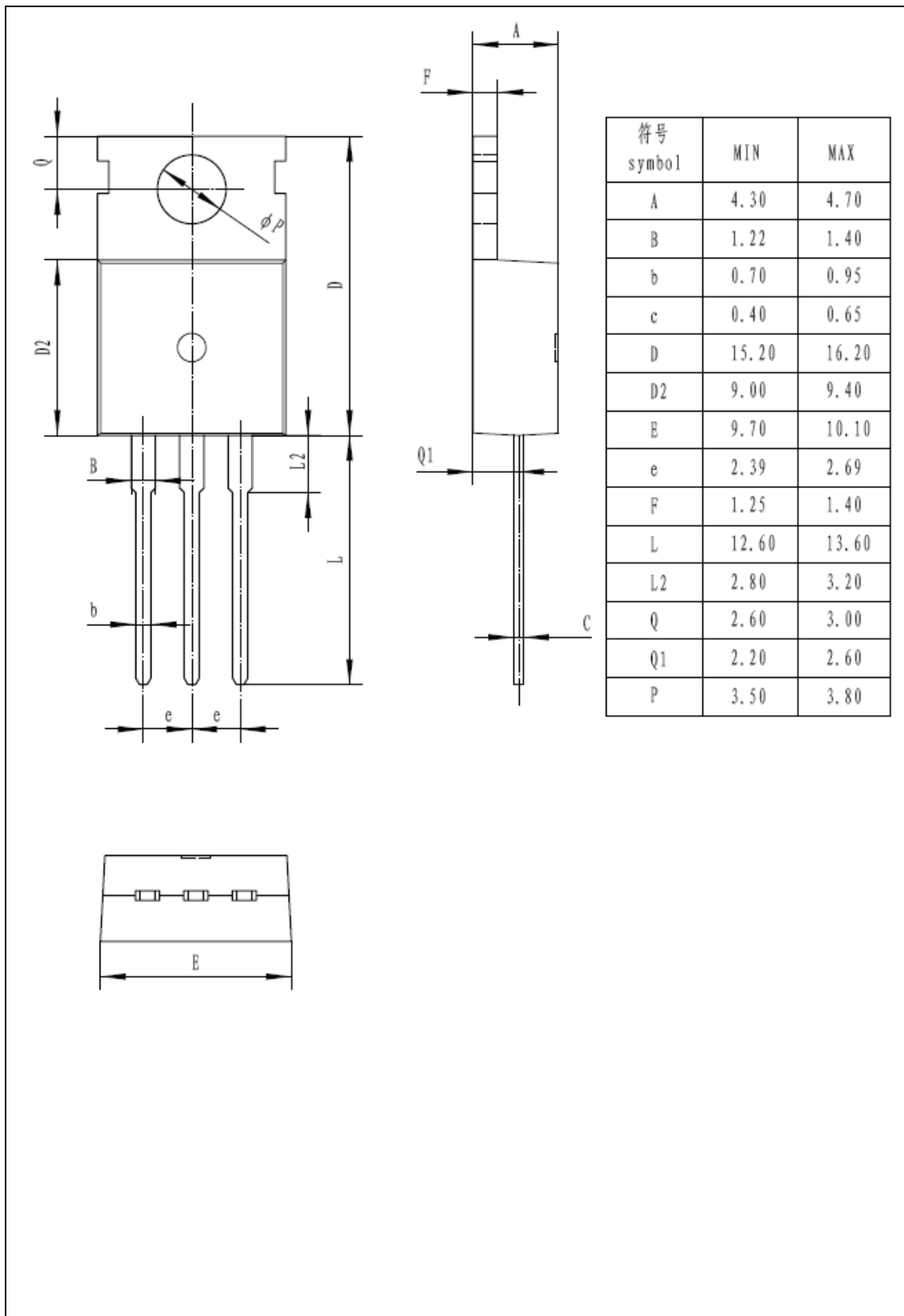




## 外形尺寸 PACKAGE MECHANICAL DATA

TO-220C

单位 Unit : mm

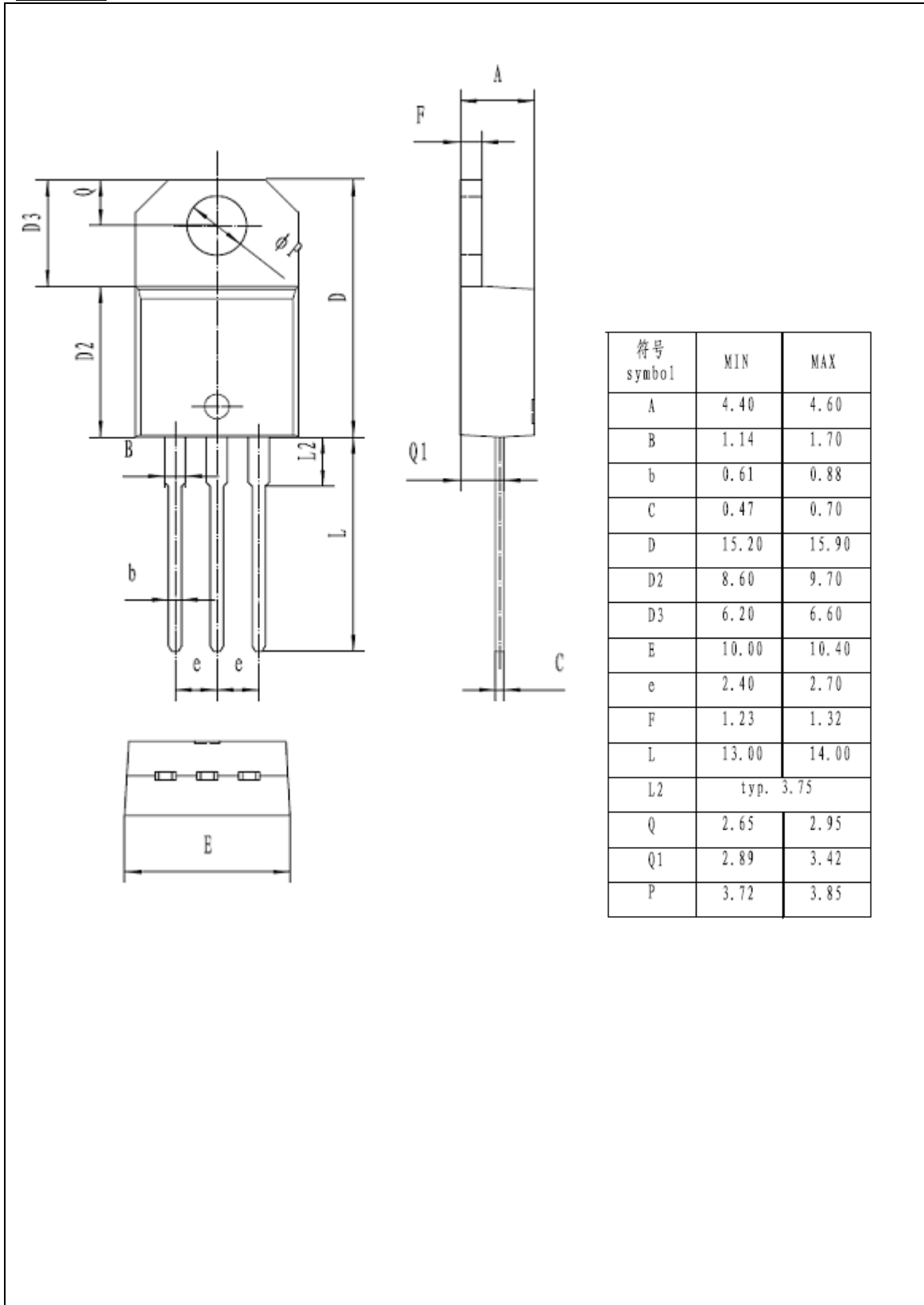




## 外形尺寸 PACKAGE MECHANICAL DATA

TO-220S

单位 Unit : mm

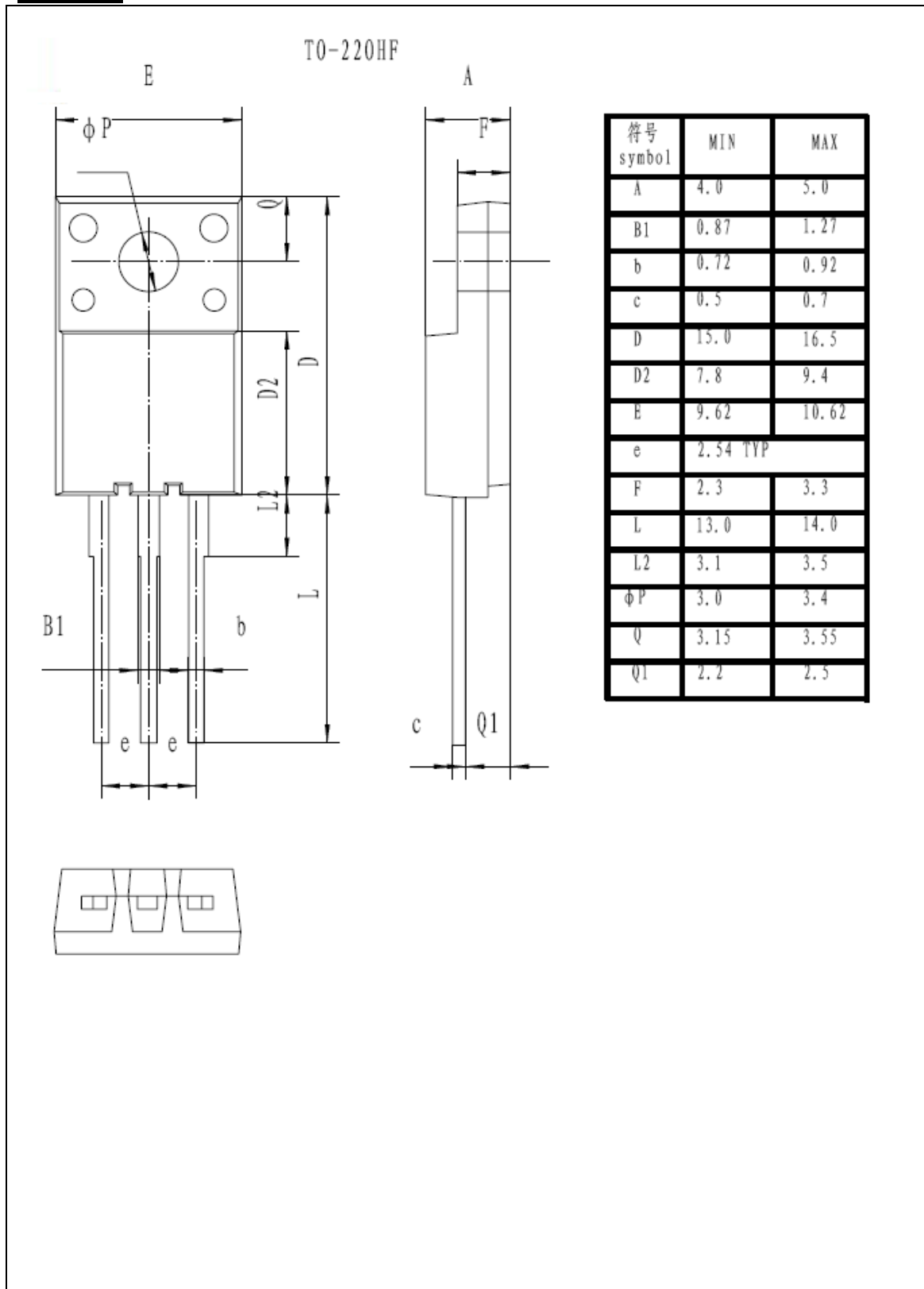




## 外形尺寸 PACKAGE MECHANICAL DATA

TO-220HF

单位 Unit : mm



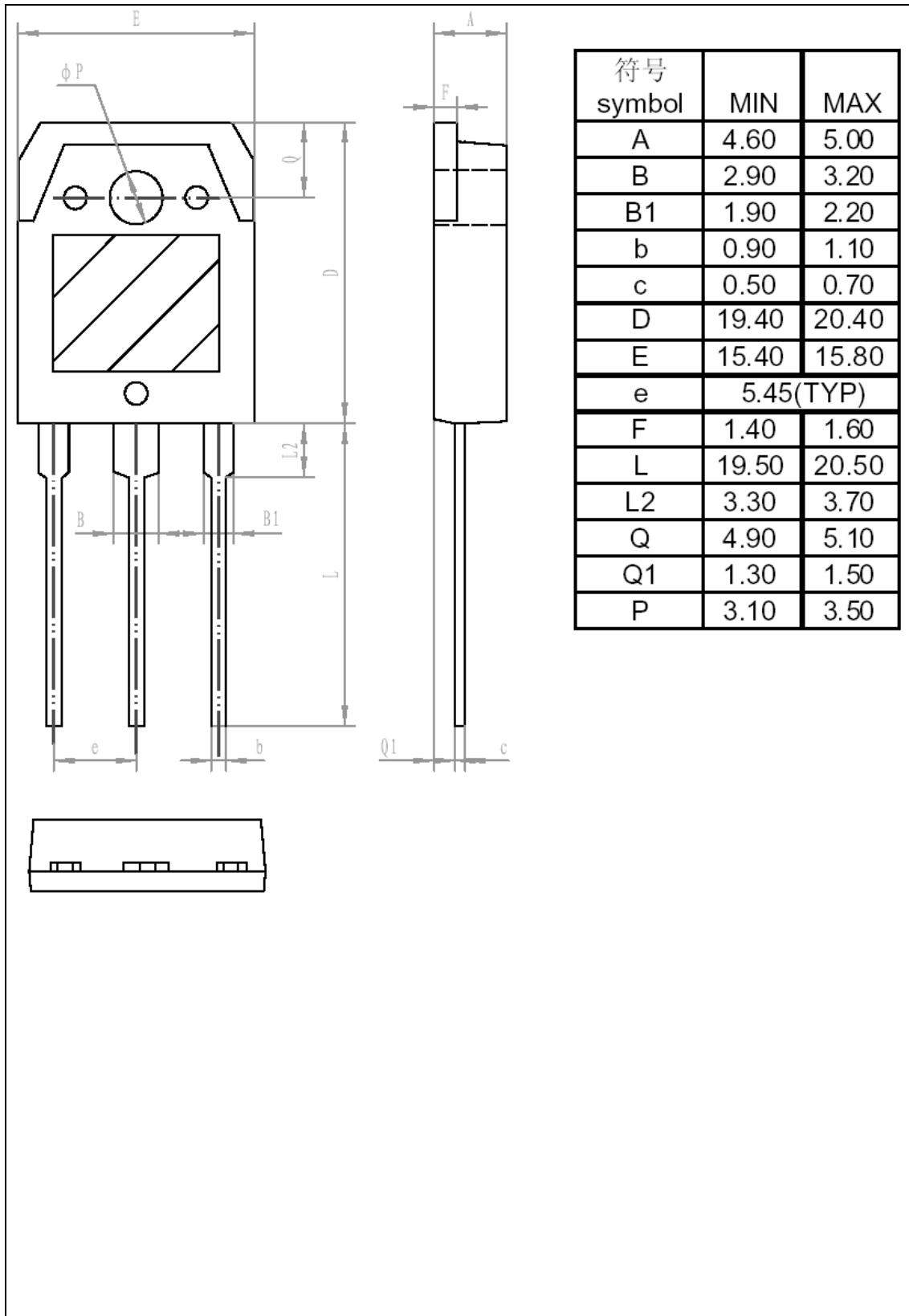




## 外形尺寸 PACKAGE MECHANICAL DATA

TO-3PB

单位 Unit : mm

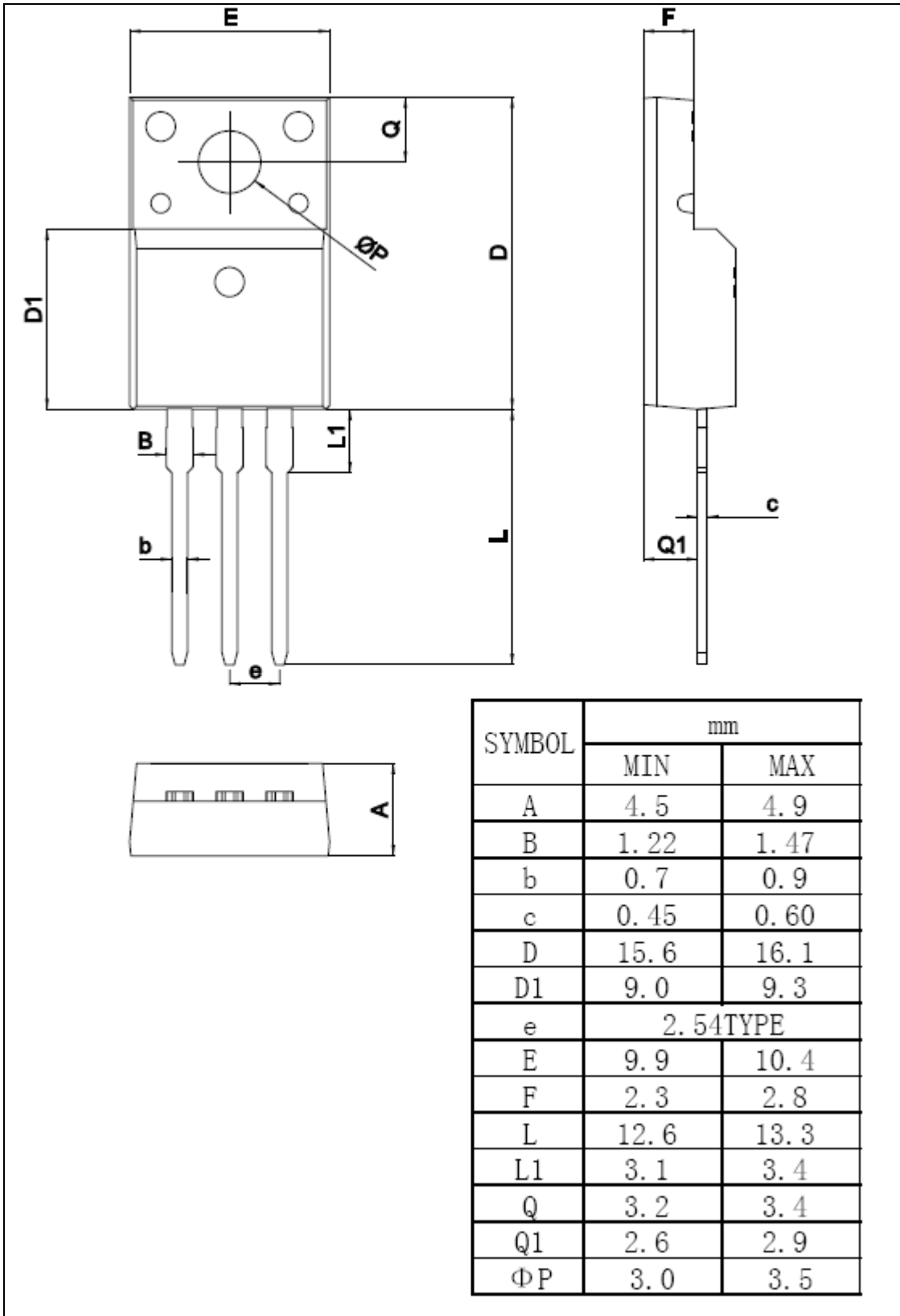




## 外形尺寸 PACKAGE MECHANICAL DATA

TO-220MF-K1

单位 Unit : mm





## 注意事项

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3. Please do not exceed the absolute maximum ratings of the device when circuit designing.
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