



3TT8Z/V/C/J/F/U/S/E/F1

主要参数 MAIN CHARACTERISTICS

$I_{T(RMS)}$	8A
V_{DRM}	600V or 800V
I_{GT}	35mA

用途

- 交流开关
- 相位控制

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

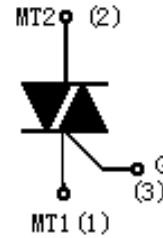
APPLICATIONS

- AC switching
- Phase control

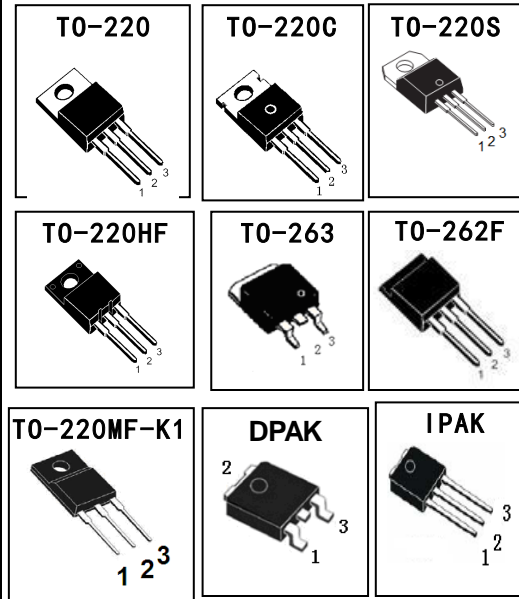
FEATURES

- 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				订货型号 Order codes	订货型号 Order codes
有卤-袋装	无卤-袋装	有卤-条管	无卤-条管	3TT8Z	TO-220
Halogen-Bag	Halogen-Free-Bag	Halogen-Tube	Halogen-Free-Tube		
3TT8Z-CA-C	3TT8Z-CA-CR	3TT8Z-CA-B	3TT8Z-CA-BR		
有卤-袋装	无卤-袋装	有卤-条管	无卤-条管	3TT8C	TO-220C
Halogen-Bag	Halogen-Free-Bag	Halogen-Tube	Halogen-Free-Tube		
3TT8C-CA-C	3TT8C-CA-CR	3TT8C-CA-B	3TT8C-CA-BR		
有卤-袋装	无卤-袋装	有卤-条管	无卤-条管	3TT8J	TO-220S
Halogen-Bag	Halogen-Free-Bag	Halogen-Tube	Halogen-Free-Tube		
3TT8J-CB-C	3TT8J-CB-CR	3TT8J-CB-B	3TT8J-CB-BR		
有卤-袋装	无卤-袋装	有卤-条管	无卤-条管	3TT8F	TO-220HF
Halogen-Bag	Halogen-Free-Bag	Halogen-Tube	Halogen-Free-Tube		
3TT8F-FA-C	3TT8F-FA-CR	3TT8F-FA-B	3TT8F-FA-BR		
有卤-编带	无卤-编带	有卤-袋装	无卤-袋装	3TT8U	DPAK
Halogen-Reel	Halogen-Free-	Halogen-Bag	Halogen-Free-Bag		





	Reel				
3TT8U-R-A	3TT8U-R-AR	N/A	N/A		
有卤-袋装	无卤-袋装	有卤-条管	无卤-条管		
Halogen-Bag	Halogen-Free-Bag	Halogen-Tube	Halogen-Free-Tube	3TT8S	TO-263
3TT8S-S-C	3TT8S-S-CR	3TT8S-S-B	3TT8S-S-BR		
有卤-袋装	无卤-袋装	有卤-条管	无卤-条管		
Halogen-Bag	Halogen-Free-Bag	Halogen-Tube	Halogen-Free-Tube	3TT8E	TO-262F
3TT8Z-BC-C	3TT8Z-BC-CR	3TT8Z-BC-B	3TT8Z-BC-BR		
有卤-袋装	无卤-袋装	有卤-条管	无卤-条管		
Halogen-Bag	Halogen-Free-Bag	Halogen-Tube	Halogen-Free-Tube	3TT8F1	TO-220MF-K1
3TT8F1-F1-C	3TT8F1-F1-CR	3TT8F1-F1-B	3TT8F1-F1-BR		
有卤-条管	无卤-条管	有卤-编带	无卤-编带		
Halogen-Tube	halogen-Free-Tube	Halogen-Reel	Halogen-Free-Reel	3TT8V	IPAK
3TT8V-V-B	N/A	N/A	N/A		

概述 GENERAL DESCRIPTION

3TT8Z/C/J/F/U/S/E/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-220、TO-220C、TO-220S（引线与散热片绝缘）、TO-220HF（塑料全包封）、DPAK、IPAK、TO-263、TO-262F、TO-220MF-K1。

3TT8Z/C/J/F/U/S/E/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-220、TO-220C、TO-220S (internally isolated)、TO-220HF (plastic envelope) 、DPAK、IPAK、TO-263、TO-262F and TO-220MF-K1.



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	8	A
非重复浪涌峰值通态电流 Non-repetitive surge peak on-state current	I_{TSM}	full sine wave , $t=20\text{ms}$	80	A
		full sine wave , $t=16.7\text{ms}$	84	A
		I^2t	$t=10\text{ms}$	32
通态电流临界上升率 Repetitive rate of rise of on-state current after triggering	dI/dt	$I_{\text{TM}}=12\text{A}$, $I_{\text{G}}=0.2\text{A}$, $dI_{\text{G}}/dt=0.2\text{A}/\mu\text{s}$	100	$\text{A}/\mu\text{s}$
峰值门极电流 Peak gate current	I_{GM}		4	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°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 _{DM} =V _{DRM} , T _j =125°C, gate open	-	-	0.5	mA	
峰值通态电压 Peak on-state voltage	V _{TM}	I _{TM} =11.3A	-	1.3	1.7	V	
门极触发电流 Gate trigger current	I _{GT}	V _{DM} =12V, R _L =100 Ω	MT1(-),MT2(+),G(+)	2	-	35	mA
			MT1(-),MT2(+),G(-)	2	-	35	mA
			MT1(+),MT2(-),G(-)	2	-	35	mA
门极触发电压 Gate trigger voltage	V _{GT}	V _{DM} =12V, R _L =100 Ω	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	-	-	50	mA	
擎住电流 Latching current	I _L	V _{DM} =12V, I _{GT} =0.1A	MT1(-),MT2(+),G(+)	-	-	50	mA
			MT1(-),MT2(+),G(-)	-	-	75	mA
			MT1(+),MT2(-),G(-)	-	-	50	mA
断态临界电压上升率 Rise of off- state voltage	dV/dt	V _{DM} =67% V _{DRM(MAX)} , T _j =125°C, gate open	1000	-	-	V/μs	
门极开通时间 Gate controlled turn-on time	t _{gt}	I _{TM} =12A, 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(TO-220/TO-220C/DPAK/TO-263/IPAK)			2.0	°C/W
		full cycle(TO-220S)			2.8	°C/W
		full cycle(TO-220HF/TO-262F/TO-220MF-K1)			4.1	°C/W

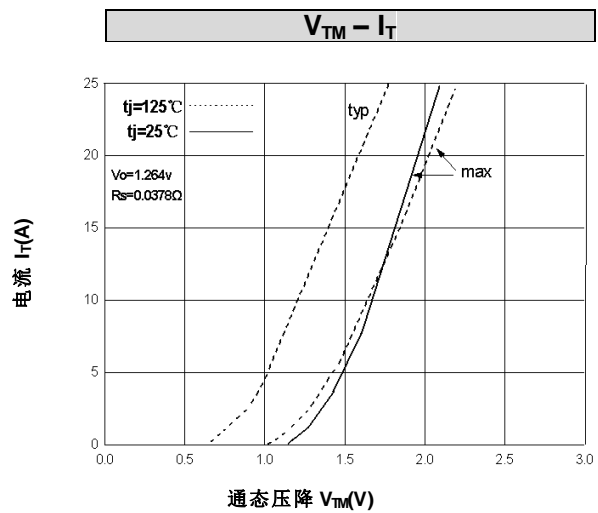
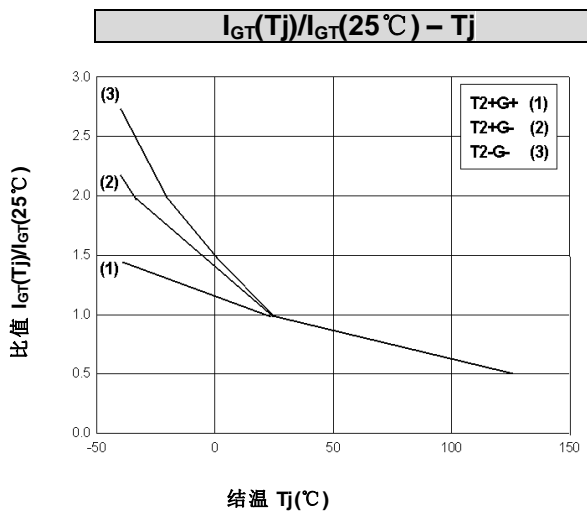
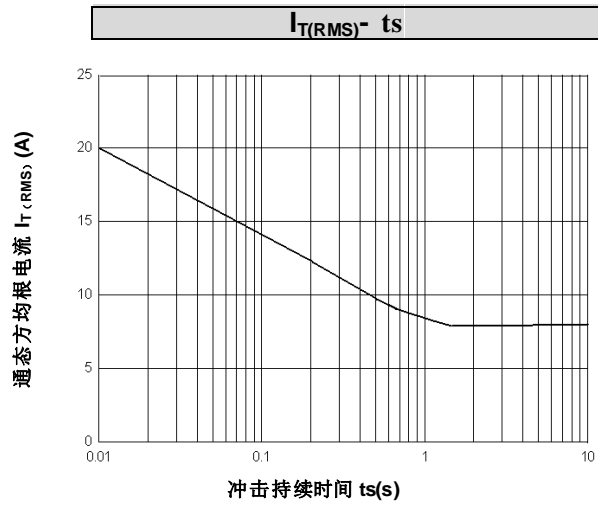
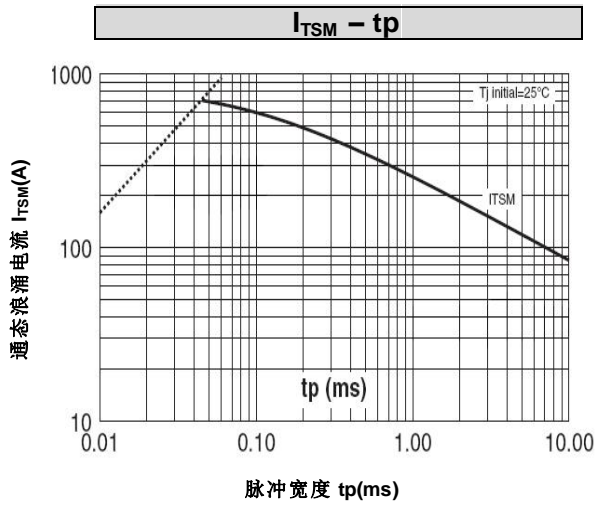
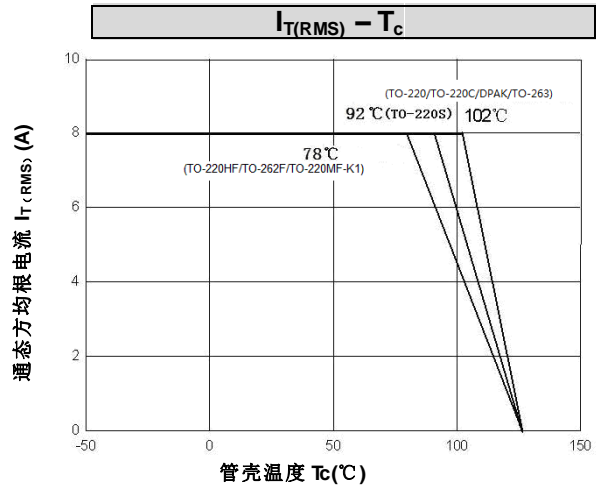
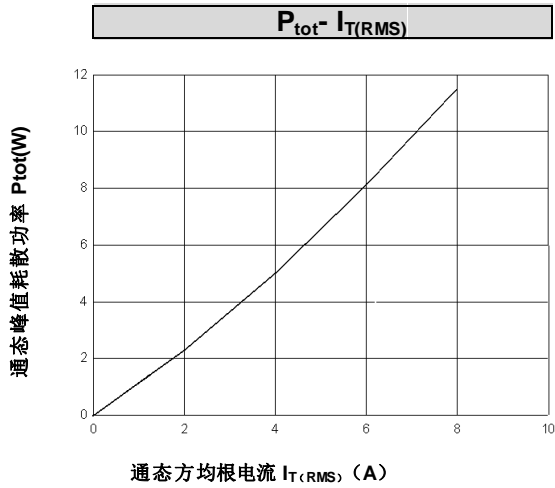
电绝缘特性 ELECTRICAL ISOLATION

项 目 Parameter	符 号 Symbol	条 件 Condition	数 值 Value	单位 Unit
绝缘电压 Isolation voltage	V _{ISOL}	1 minute, leads to mounting tab TO-220S	2000	V
		1 minute, leads to mounting tab TO-220HF/TO-262F/TO-220MF-K1	2000	V





征曲线 ELECTRICAL CHARACTERISTICS (curves)

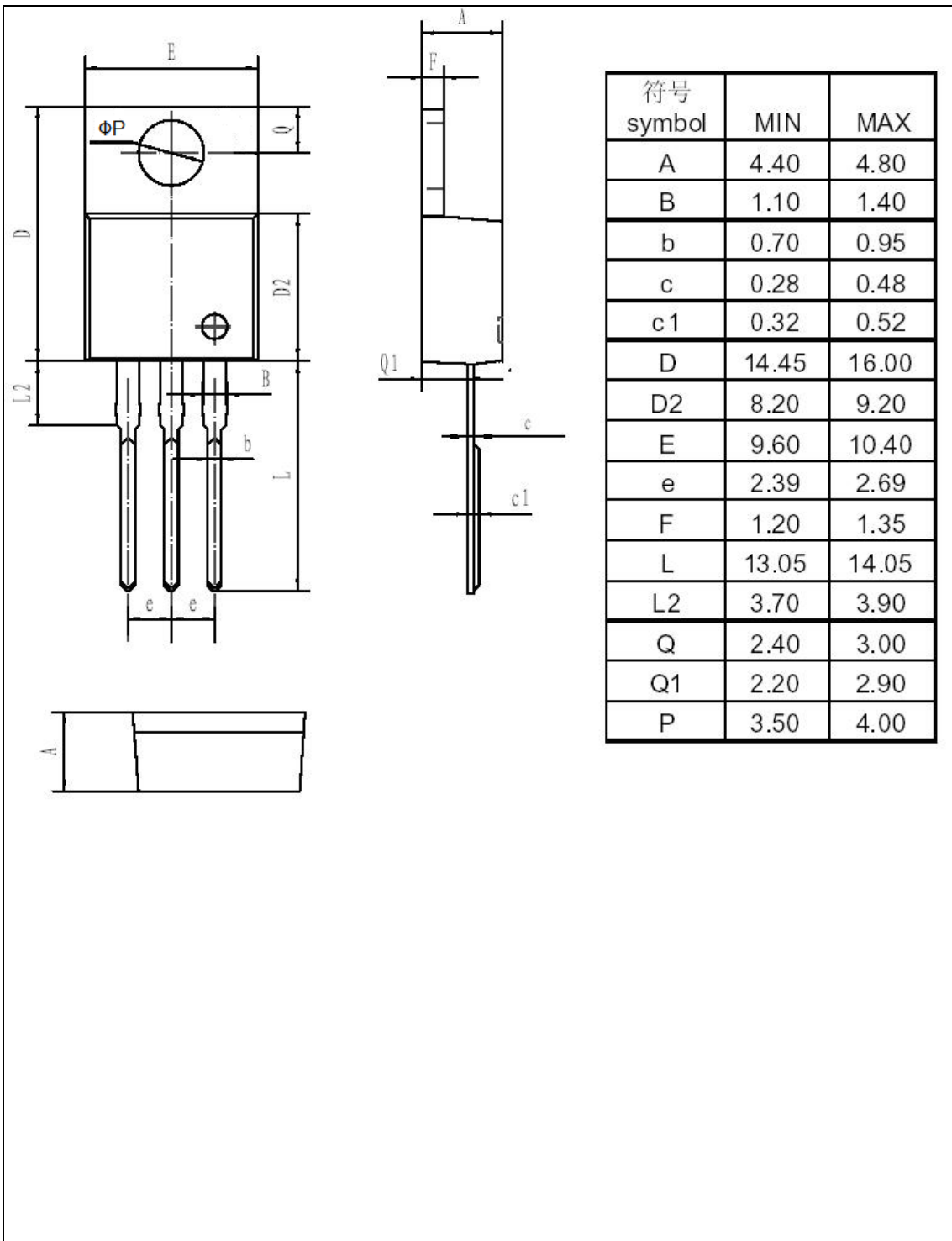




外形尺寸 PACKAGE MECHANICAL DATA

TO-220

单位 Unit : mm

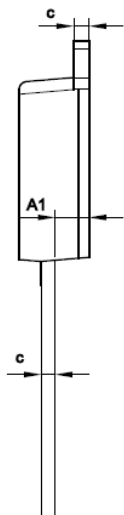
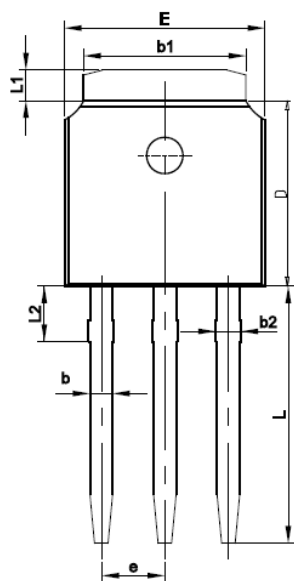




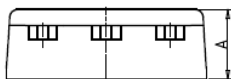
IPAK

3TT8Z/V/C/J/F/U/S/E/F1

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

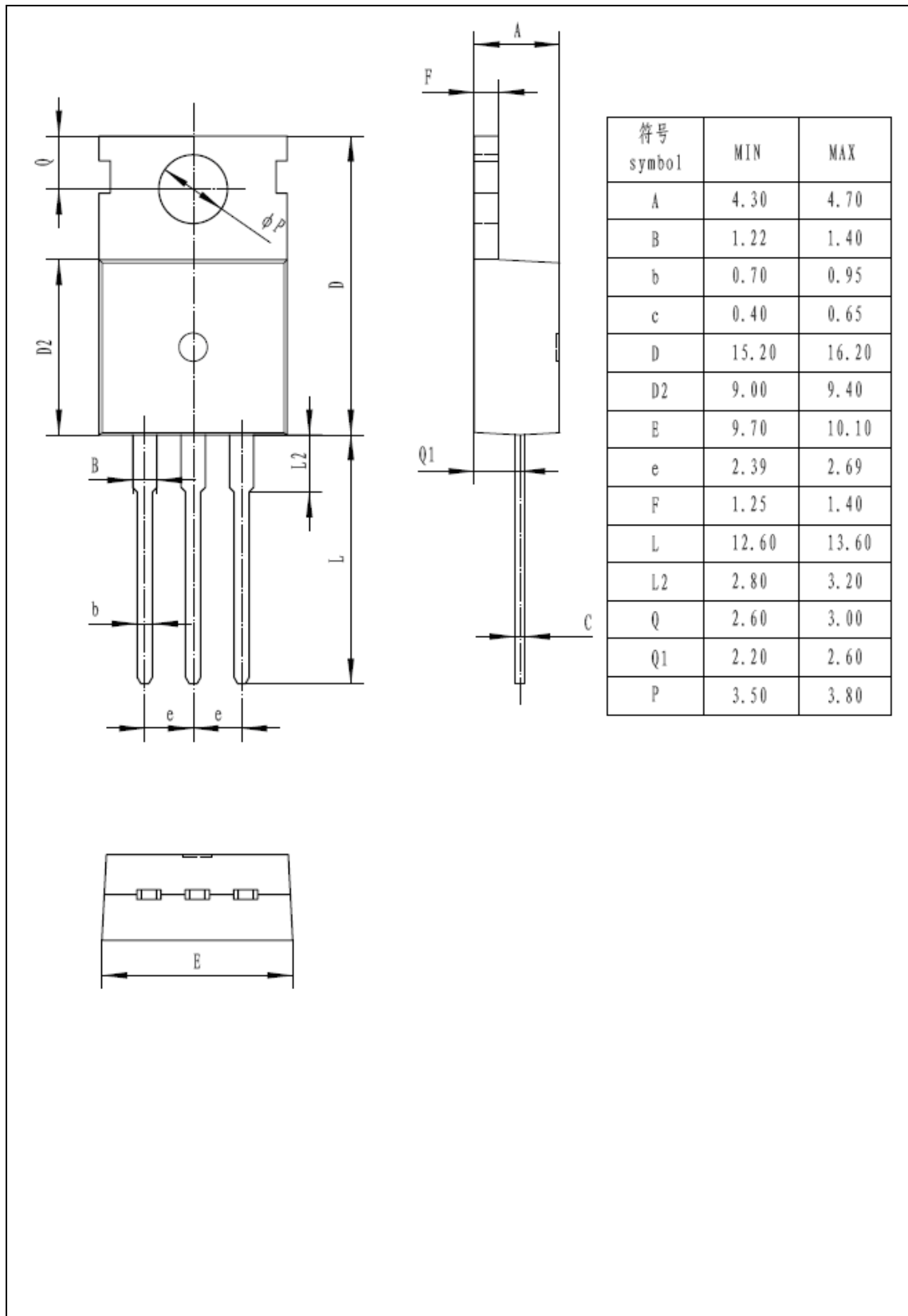




外形尺寸 PACKAGE MECHANICAL DATA

TO-220C

单位 Unit : mm

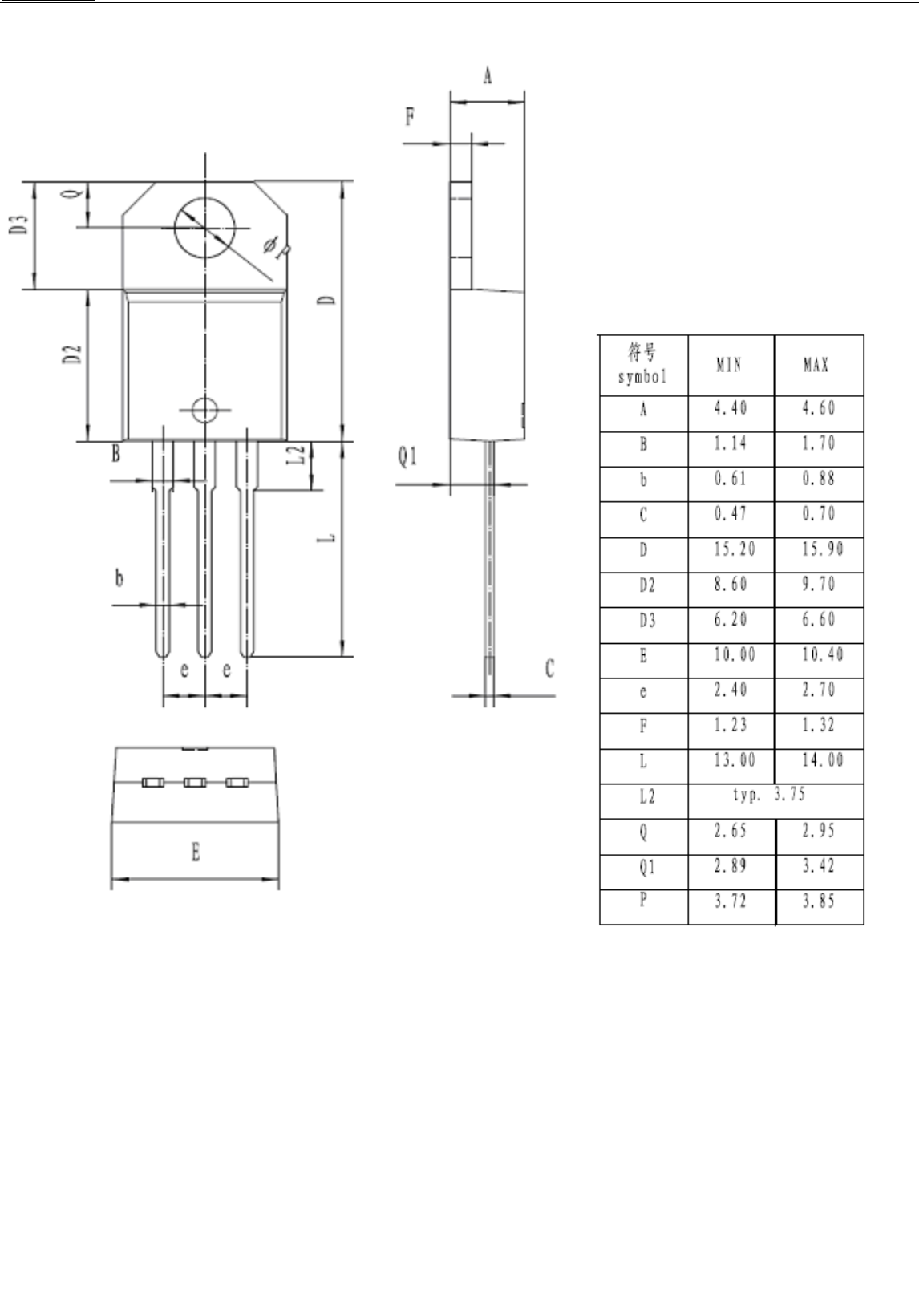




外形尺寸 PACKAGE MECHANICAL DATA

TO-220S

单位 Unit : mm

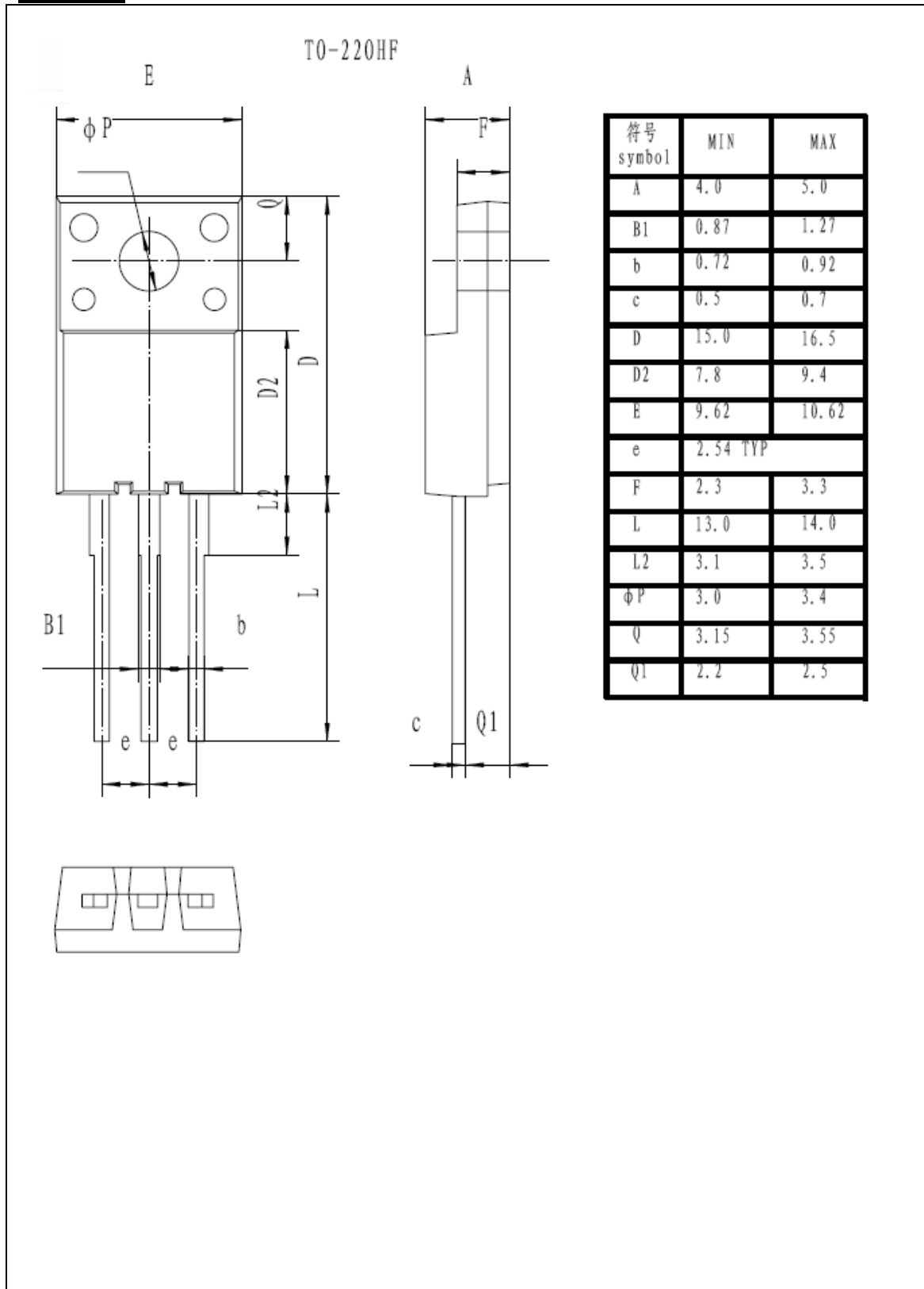




外形尺寸 PACKAGE MECHANICAL DATA

TO-220HF

单位 Unit : mm

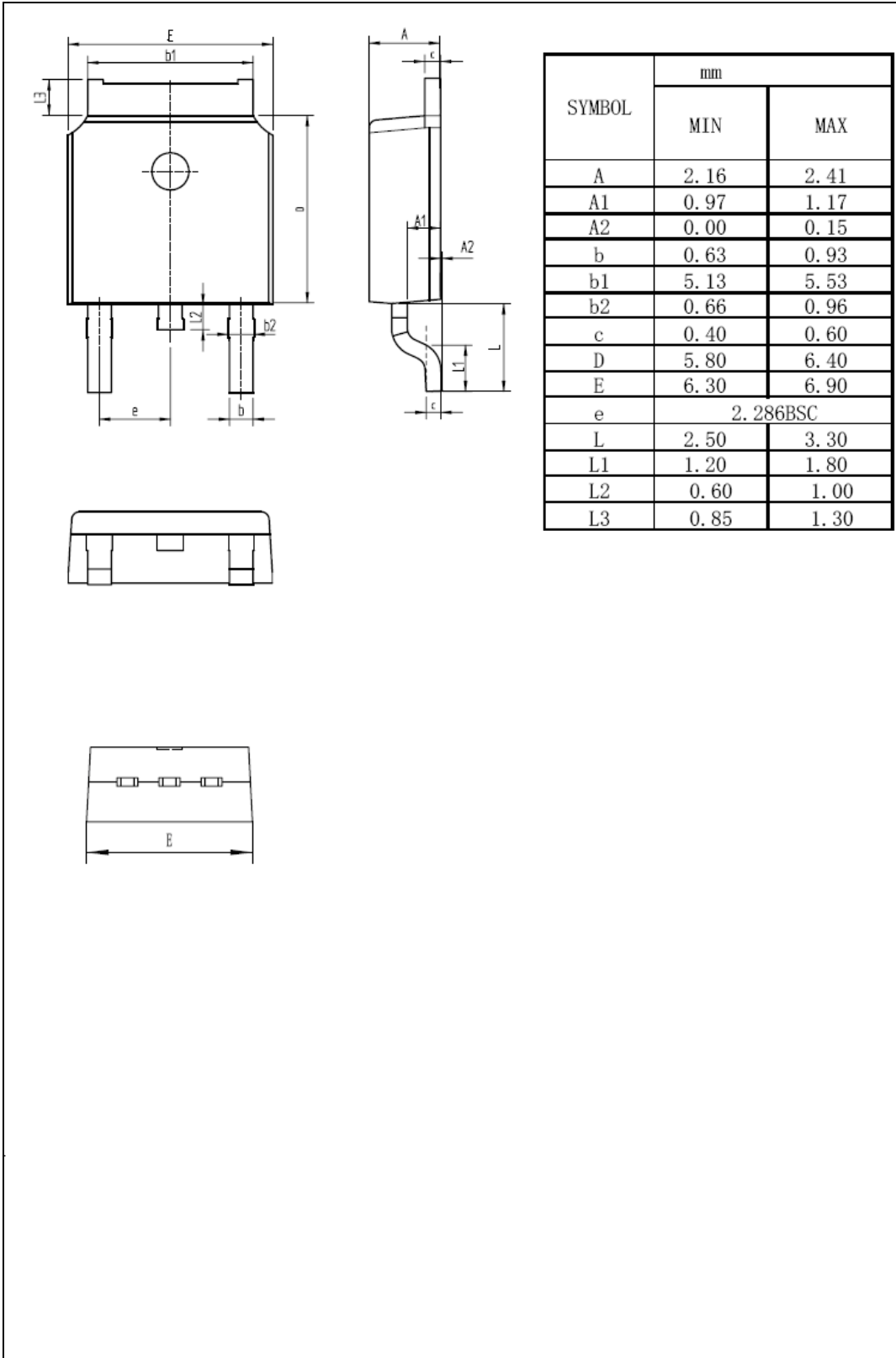




外形尺寸 PACKAGE MECHANICAL DATA

DPAK

单位 Unit : mm

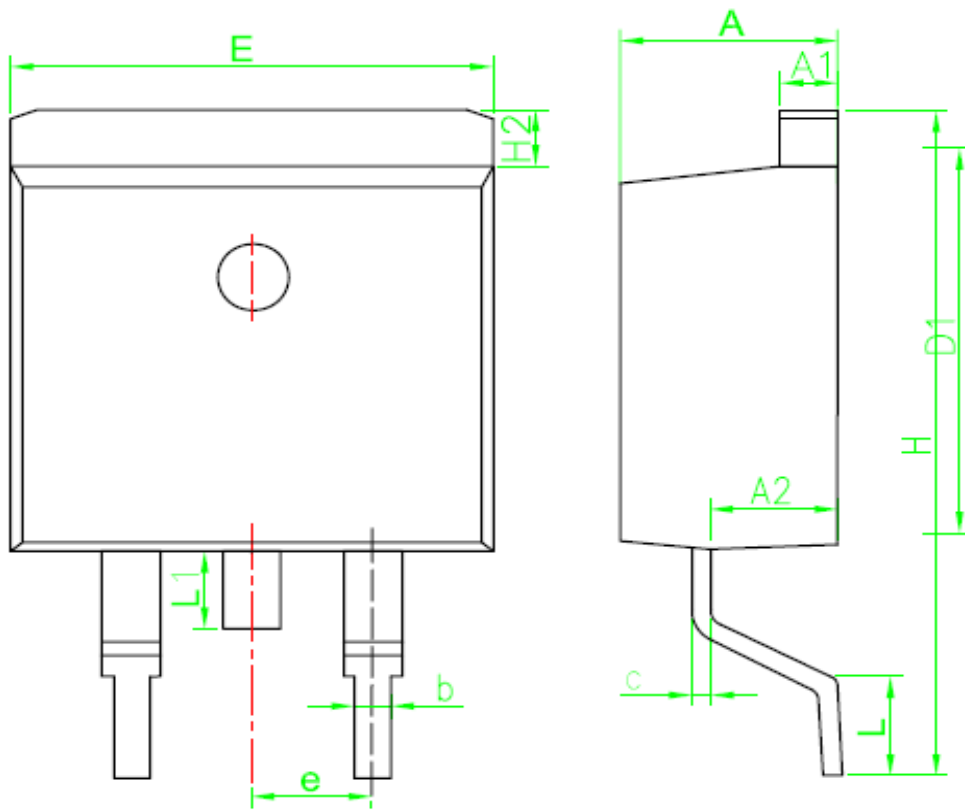




外形尺寸 PACKAGE MECHANICAL DATA

TO-263

单位 Unit : mm



SYMBOL	MM	
	MIN	MAX
A	4.30	4.80
A1	1.12	1.42
A2	2.54	2.84
b	0.67	1.00
c	0.29	0.52
D1	8.40	9.00
E	9.80	10.46
e	2.54BSC	
H	14.00	16.00
H2	1.12	1.45
L	1.50	3.10
L1	1.45	1.70

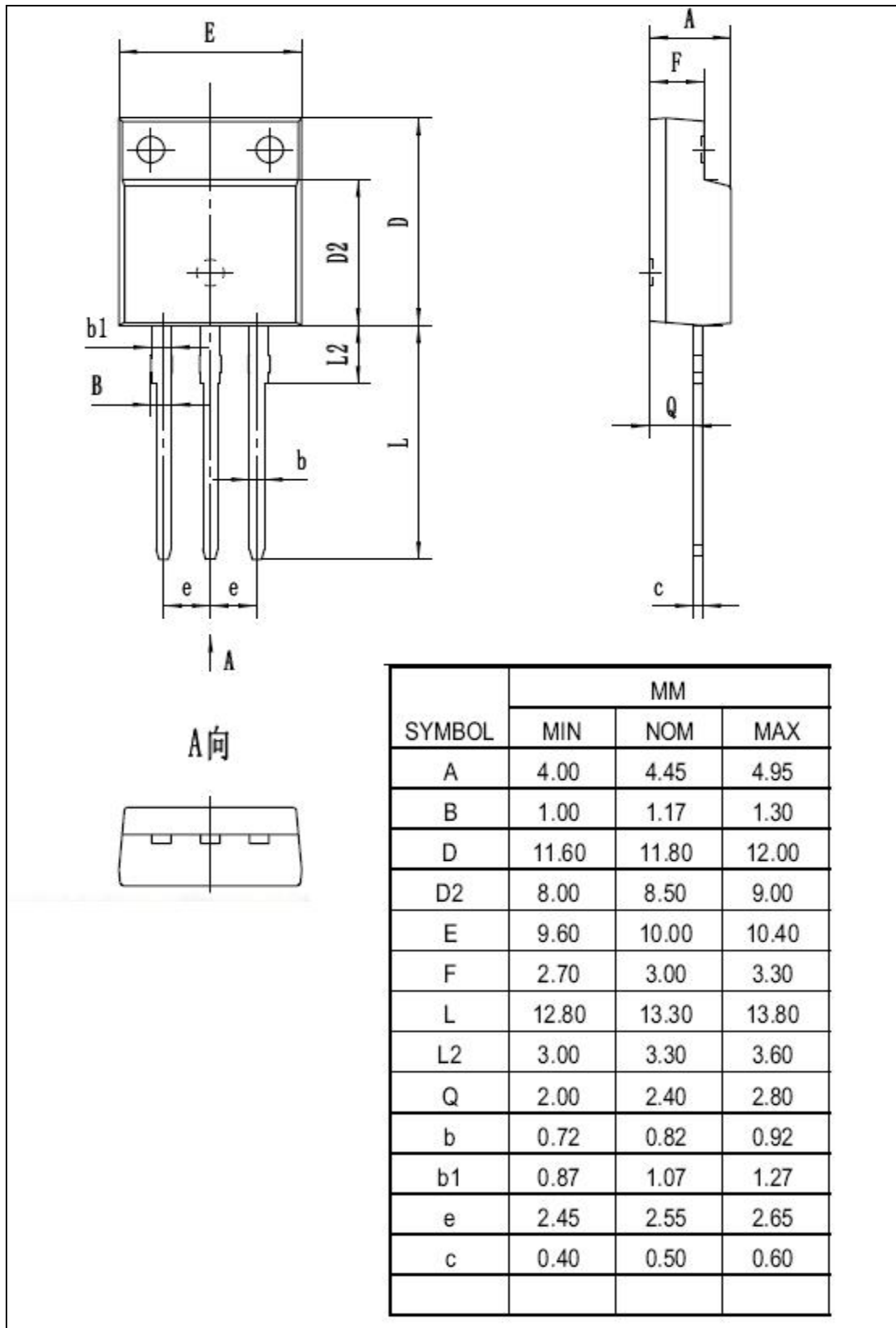




外形尺寸 PACKAGE MECHANICAL DATA

TO-262F

单位 Unit : mm

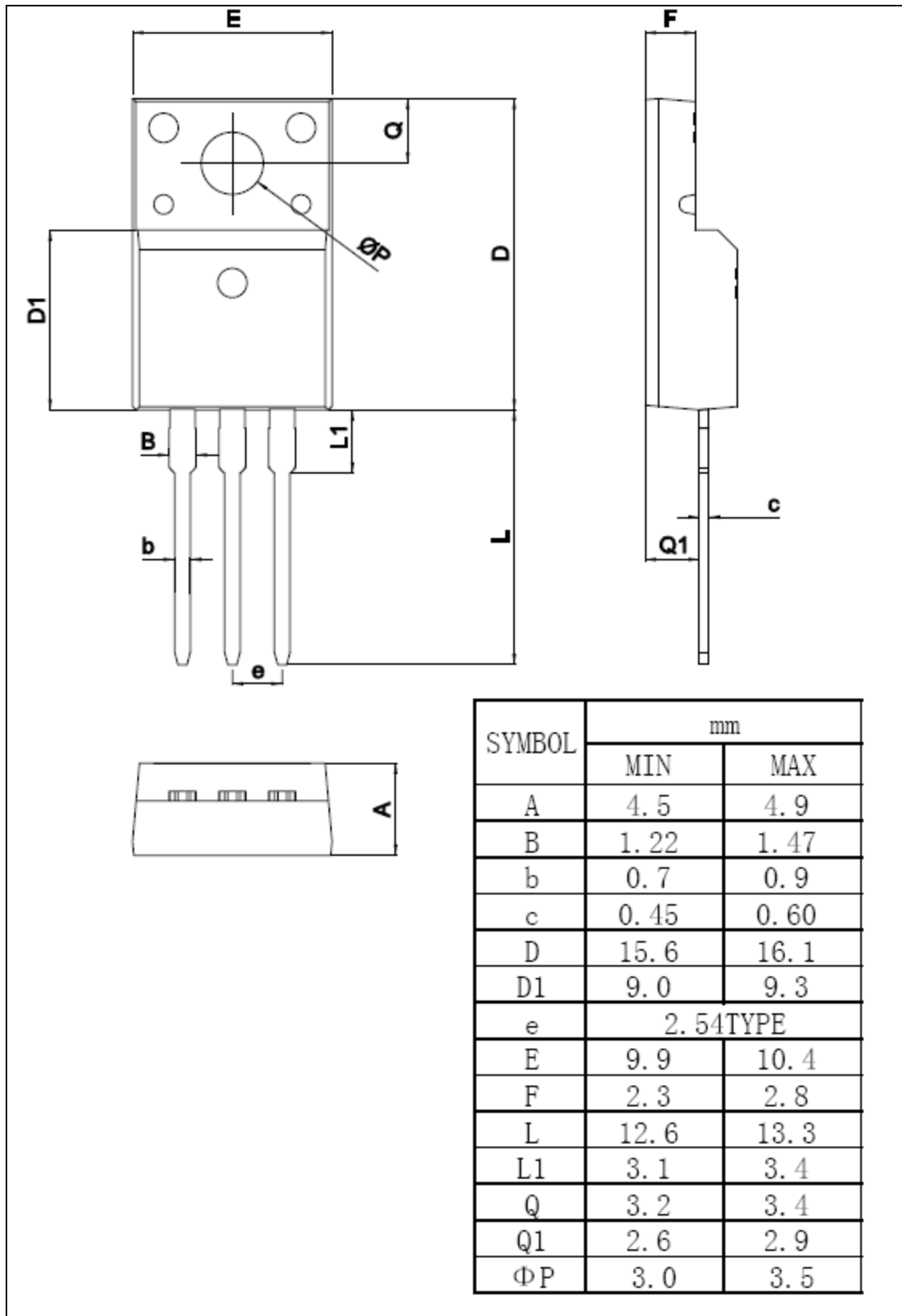




外形尺寸 PACKAGE MECHANICAL DATA

TO-220MF-K1

单位 Unit : mm



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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.
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