



# CP850N3C

## 主要参数 MAIN CHARACTERISTICS

$I_{T(RMS)}$	8A
$V_{DRM}$	800V
$I_{GT(I,II,III)}$	<50mA

## 用途

- 交流开关
- 相位控制

## APPLICATIONS

- AC switching
- Phase control

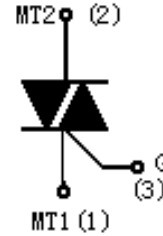
## 产品特性

- 平面工艺芯片，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
- 150℃高结温产品

## FEATURES

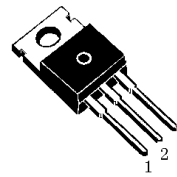
- The planar process chip for reliability and uniform
- Uniform gate trigger currents in three quadrants
- RoHS products
- 150℃ High operating junction temperature

## 封装 Package

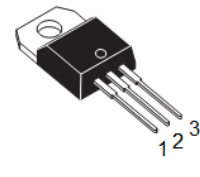


序号 Pin	引线名称 Description
1	主电极 1 MT1
2	主电极 2 MT2
3	门极 G

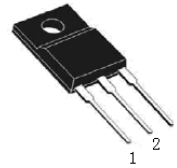
T0-220C



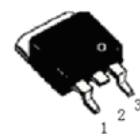
T0-220S



T0-220MF-K1



T0-263



## 订货信息 ORDER MESSAGES

订货型号 Order codes				印 记 Marking	封 装 Package
有卤-条管 Halogen-Tube	无卤-条管 halogen-Free-Tube	有卤-编带 Halogen-Reel	无卤-编带 Halogen-Free-Reel		
CP850N3C-C-B	CP850N3C-C-BR	N/A	N/A	CP850N3C	TO-220C
CP850N3C-CB-B	CP850N3C-CB-BR	N/A	N/A	CP850N3C	TO-220S
CP850N3C-F1-B	CP850N3C-F1-BR	N/A	N/A	CP850N3C	TO-220MF-K1
CP850N3C-S-B	CP850N3C-S-BR	CP850N3C-S-A	CP850N3C-S-AR	CP850N3C	TO-263



**概述 GENERAL DESCRIPTION**

CP850N3C是平面可控硅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-220MF-K1（plastic envelope）和TO-263。

**CP850N3C** are The planar process chip 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 insulated), TO-220MF-K1 (plastic envelope) and TO-263.

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

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	$V_{DRM}$		$\pm 800$	V
通态方均根电流 On-state RMS current	$I_{T(RMS)}$	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 , $t=20ms$	80	A
		full sine wave , $t=16.7ms$	84	A
	$I^2t$	$t=10ms$	32	$A^2s$
通态电流临界上升率 Repetitive rate of rise of on-state current after triggering	$dI/dt$	$I_{TM}=12A, I_G=0.2A,$ $dI_G/dt=0.2A/\mu s$	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	$^{\circ}C$
工作结温 Operation junction temperature	$T_{VJ}$		-40~150	$^{\circ}C$



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> =150°C, gate open		--	1.5	mA
峰值通态电压 Peak on-state voltage	V <sub>TM</sub>	I <sub>TM</sub> =11.3A, T <sub>j</sub> =25°C,		--	1.7	V
门极触发电流 Gate trigger current	I <sub>GT</sub>	V <sub>DM</sub> =12V, R <sub>L</sub> =100 Ω, MT1(-),MT2(+),G(+)		--	50	mA
		MT1(-),MT2(+),G(-)		--	50	mA
		MT1(+),MT2(-),G(-)		--	50	mA
门极触发电压 Gate trigger voltage	V <sub>GT</sub>	V <sub>DM</sub> =12V, R <sub>L</sub> =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 <sub>H</sub>	V <sub>DM</sub> =12V, I <sub>GT</sub> =0.1A		--	60	mA
擎住电流 Latching current	I <sub>L</sub>	V <sub>DM</sub> =12V, I <sub>GT</sub> =0.1A, MT1(-),MT2(+),G(+)		-	70	mA
		MT1(-),MT2(+),G(-)		-	90	mA
		MT1(+),MT2(-),G(-)		-	70	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> =150°C, gate open	1000	-	-	V/μs
门极开通时间 Gate controlled turn-on time	t <sub>gt</sub>	I <sub>TM</sub> =11.3A, V <sub>DM</sub> =V <sub>DRM(MAX)</sub> , I <sub>G</sub> =0.1A, dI <sub>G</sub> /dt=5A/μs	-	2	-	μs

## 热特性 THERMAL CHARACTERISTIC

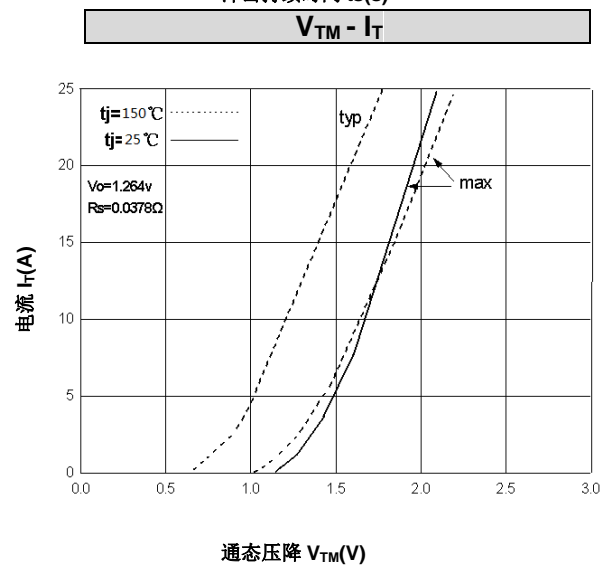
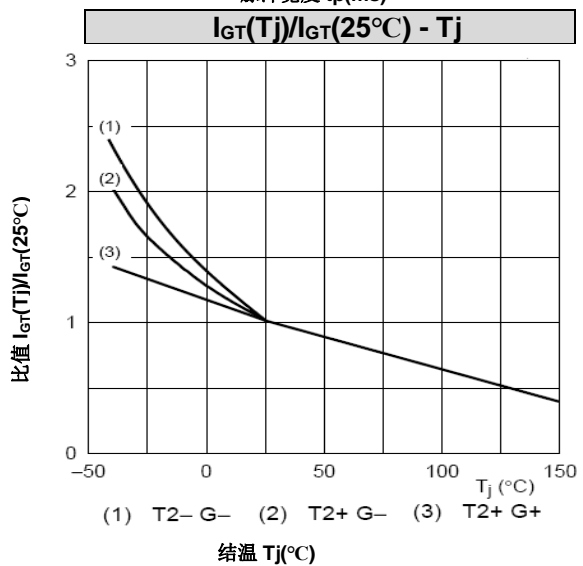
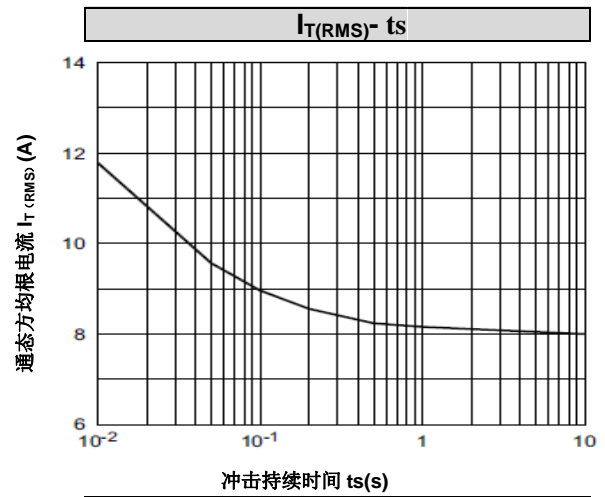
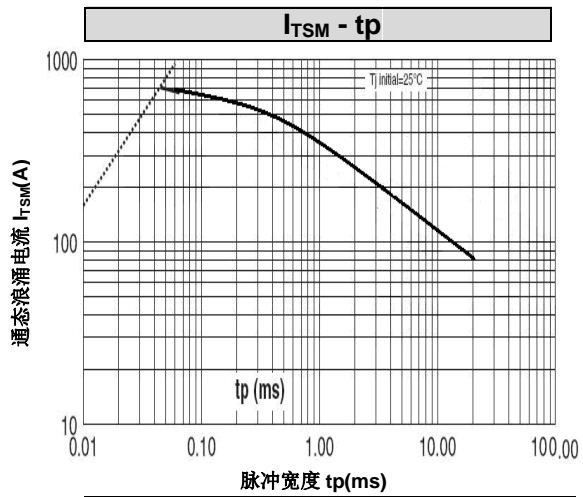
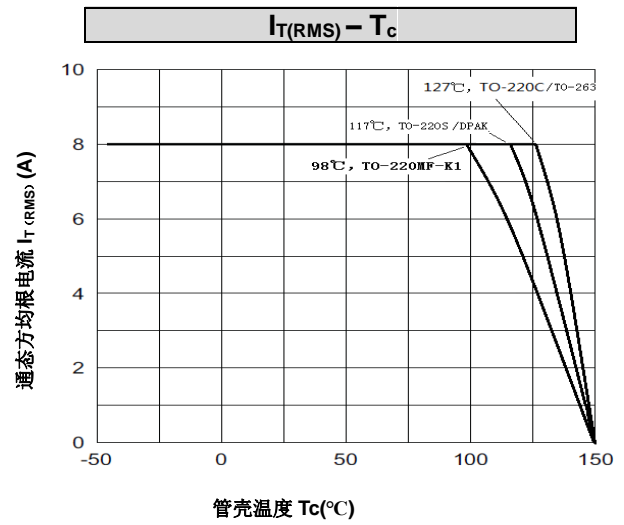
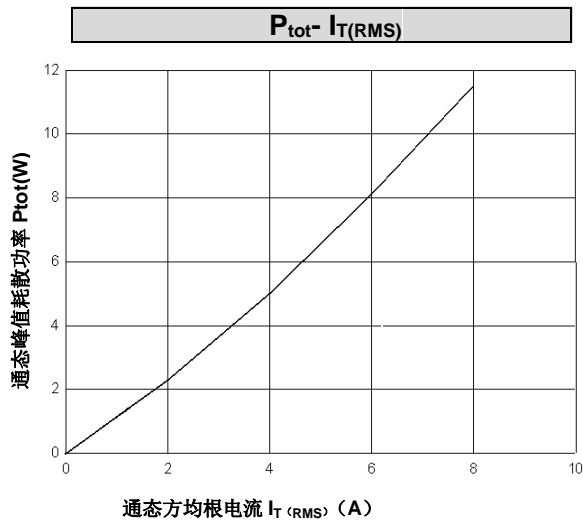
项 目 Parameter	符 号 Symbol	条 件 Condition	最小 Min	典型 Typ	最大 Max	单位 Unit
结到安装面的热阻 Thermal resistance junction to case	R <sub>th(j-c)</sub>	full cycle(TO-220C/TO-263)			2.0	°C/W
		full cycle(TO-220S/DPAK)			2.8	°C/W
		full cycle(TO-220MF-K1)			4.5	°C/W

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/ TO-220MF-K1	2000	V





特征曲线 ELECTRICAL CHARACTERISTICS (curves)

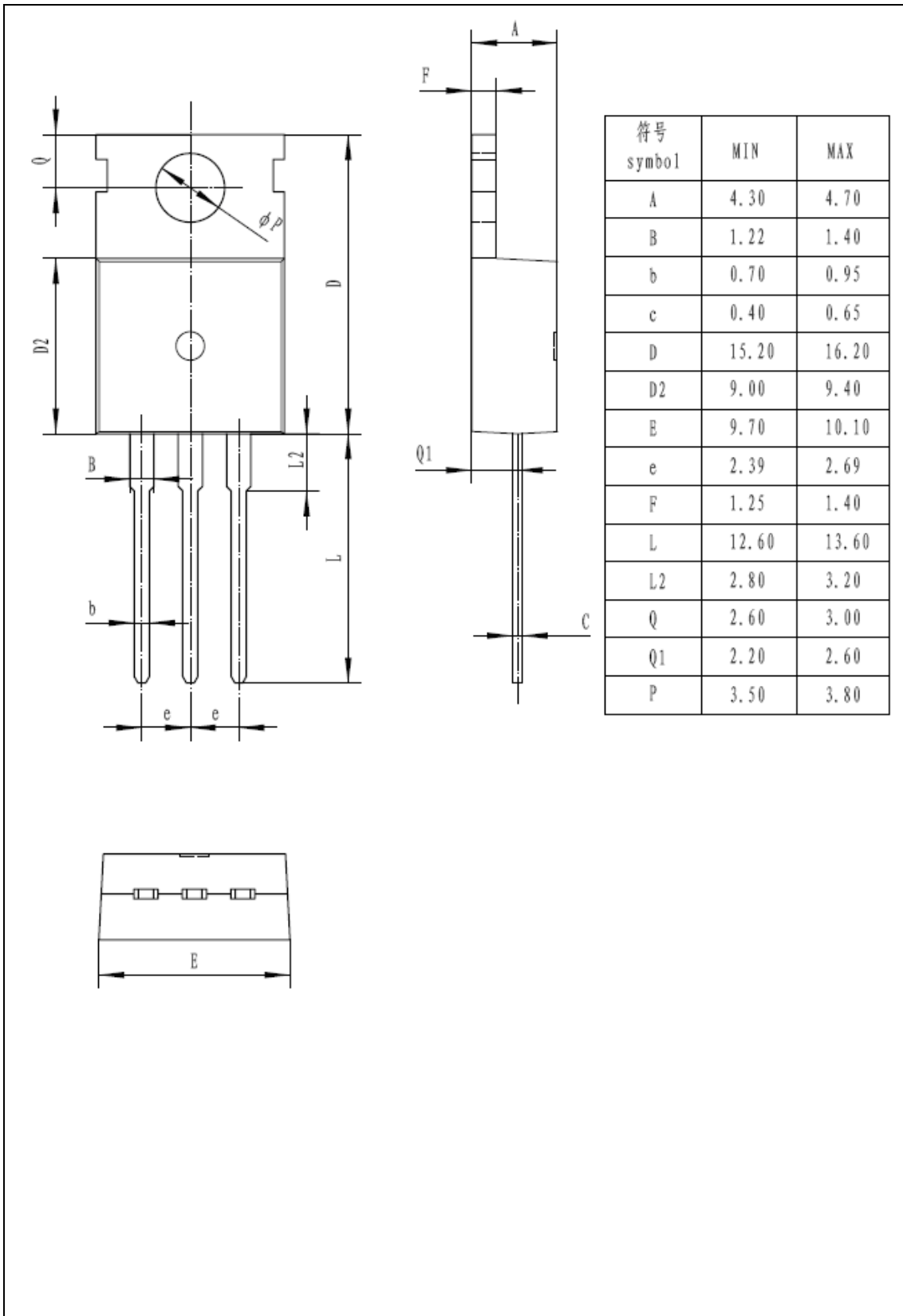




## 外形尺寸 PACKAGE MECHANICAL DATA

TO-220C

单位 Unit : mm

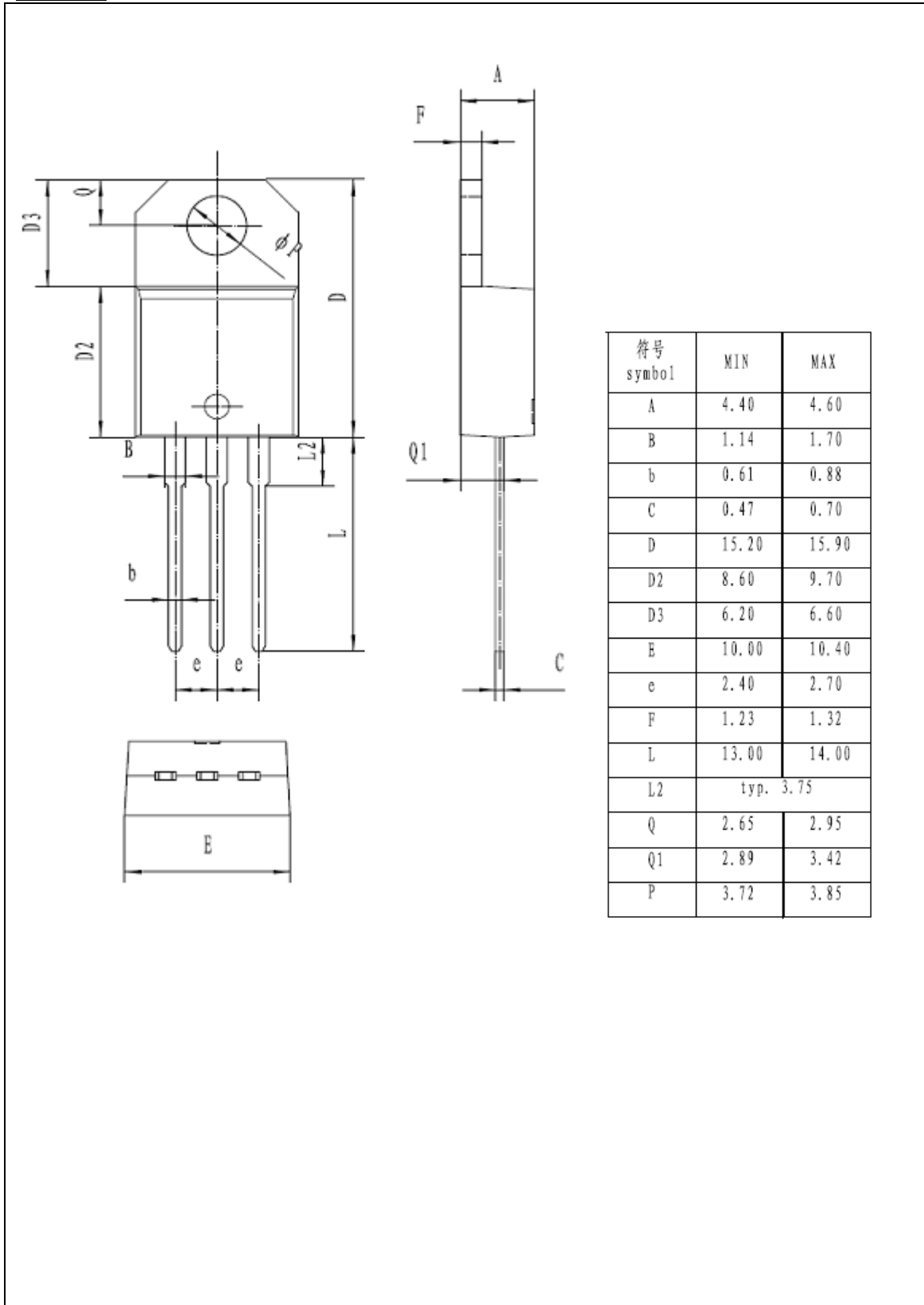




## 外形尺寸 PACKAGE MECHANICAL DATA

TO-220S

单位 Unit : mm

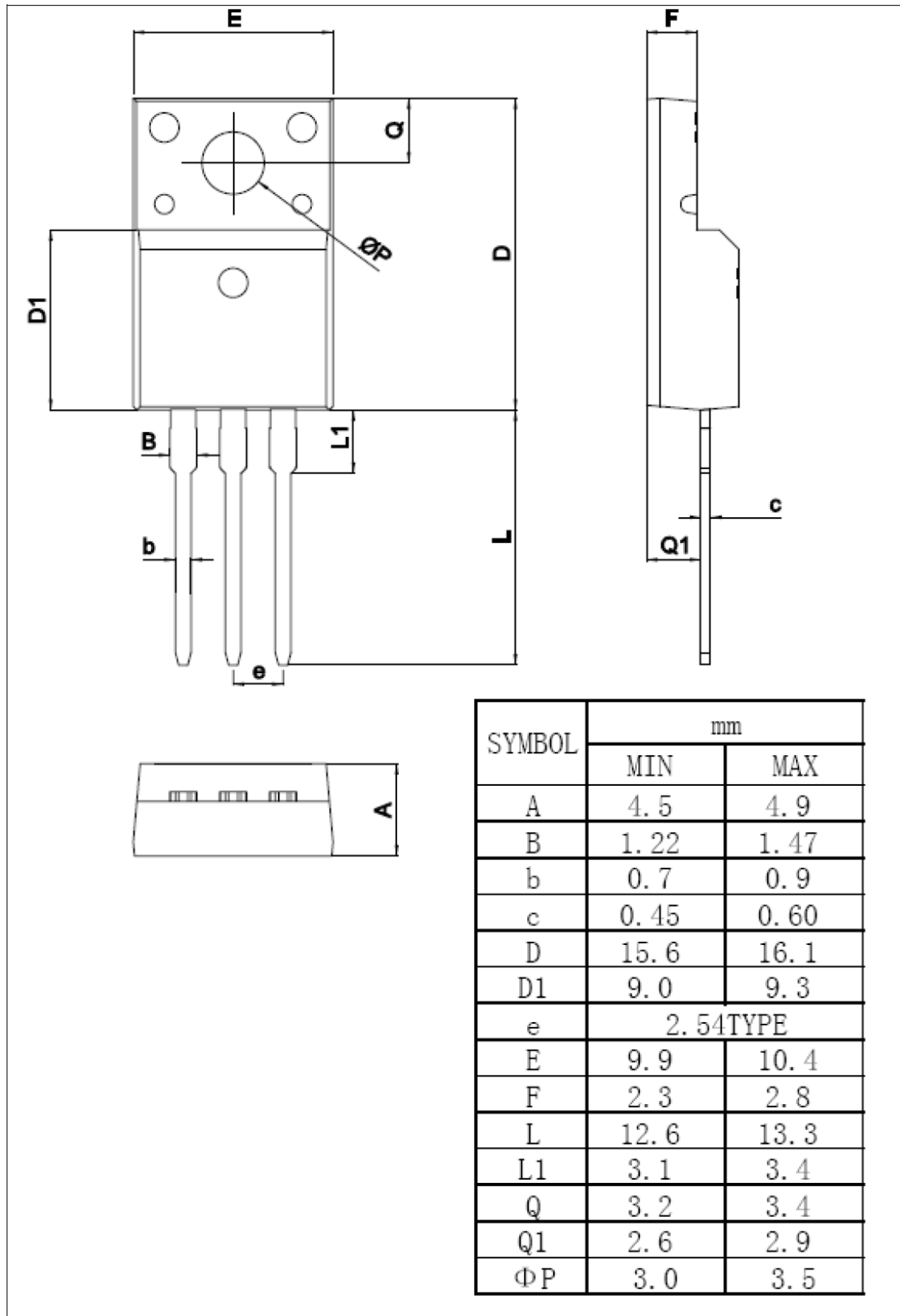




## 外形尺寸 PACKAGE MECHANICAL DATA

TO-220MF-K1

单位 Unit : mm

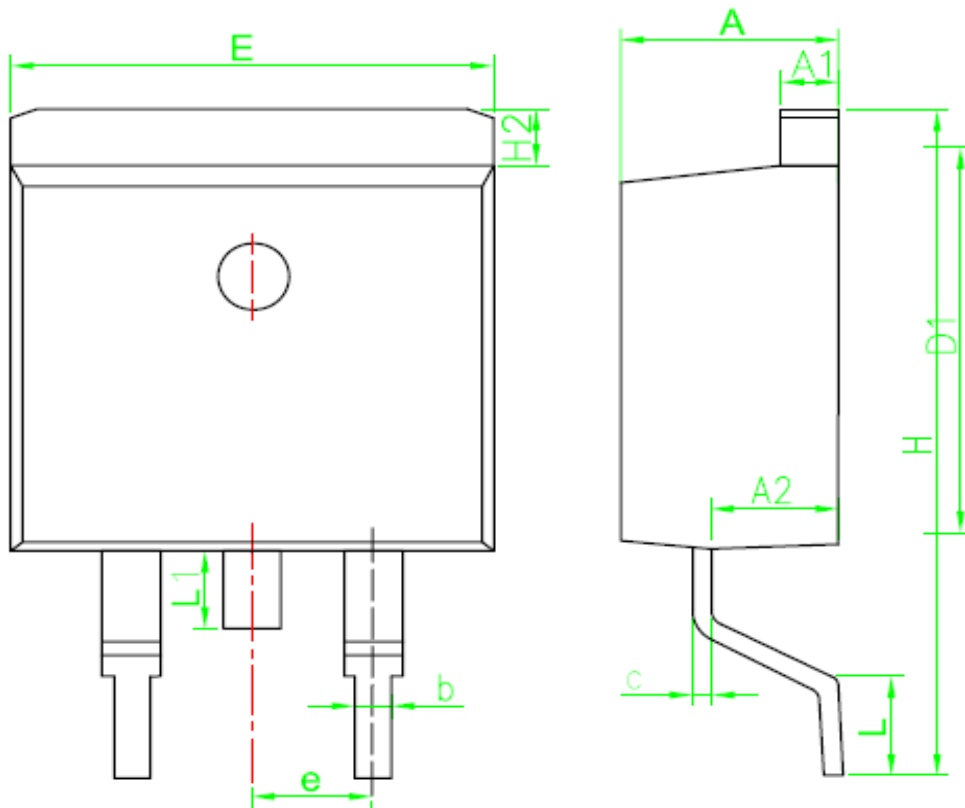




## 外形尺寸 PACKAGE MECHANICAL DATA

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







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