



# CS4100M5A

## 主要参数 MAIN CHARACTERISTICS

$I_{T(RMS)}$	4A
$V_{DRM}/V_{RRM}$	600/800V
$I_{GT}$	10-100 $\mu$ A

### 用途

- 半交流开关
- 相位控制

### 产品特性

- 玻璃钝化芯片，高可靠性和一致性
- 低通态电流和高浪涌电流能力

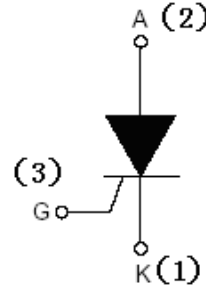
### APPLICATIONS

- Half AC switching
- Phase control

### FEATURES

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

## 封装 Package



序号 Pin	引线名称 Description
1	阴极 K
2	阳极 A
3	门极 G

<p><b>T0-220</b></p>	<p><b>T0-220C</b></p>	<p><b>IPAKM</b></p>
<p><b>T0-126</b></p>	<p><b>DDPAK</b></p>	
<p><b>IPAK</b></p>	<p><b>DDPAKM</b></p>	

- 环保 RoHS 产品
- RoHS products

## 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		
CS4100M5A-M-B	CS4100M5A-M-BR	CS4100M5A-M-C	CS4100M5A-M-CR	CS4100M5	TO-126





## CS4100M5A

CS4100M5A -CA-B	CS4100M5A -CA-BR	CS4100M5A -CA-C	CS4100M5A -CA-CR	CS4100M5	TO-220
CS4100M5A -C-B	CS4100M5A -C-BR	CS4100M5A -C-C	CS4100M5A -C-CR	CS4100M5	TO-220C
CS4100M5A -VM-B	CS4100M5A -VM-BR	CS4100M5A -VM-C	CS4100M5A -VM-CR	CS4100M5	IPAKM
CS4100M5A -V-B	CS4100M5A -V-BR	CS4100M5A -V-C	CS4100M5A -V-CR	CS4100M5	IPAK
有卤-编带	无卤-编带	N/A	N/A	CS4100M5A	DPAK
Halogen-Reel	Halogen-Free-Reel	N/A	N/A		
CS4100M5A-R-A	CS4100M5A -R-AR	N/A	N/A		
CS4100M5A-RM-A	CS4100M5A -RM-AR	N/A	N/A	CS4100M5A	DPAKM



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
断态（反向）重复峰值电压 Repetitive peak off-state (reverse) voltage	$V_{\text{DRM}}$ $/V_{\text{RRM}}$		600/800	V
通态平均电流 Average on-state current	$I_{\text{T(AV)}}$		2.5	A
通态方均根电流 On-state RMS current	$I_{\text{T(RMS)}}$		4	A
非重复浪涌峰值通态电流 Non-repetitive surge peak on-state current	$I_{\text{TSM}}$	half sine wave ,t=10ms	30	A
熔断 $I^2t$ $I^2t$ for fusing	$I^2t$	half sine wave, t=10ms	4.5	$\text{A}^2\text{s}$
通态电流临界上升率 Repetitive rate of rise of on-state current after riggering	$di/dt$	$I_{\text{TM}}=2.0\text{A}$ , $I_{\text{G}}=0.02\text{A}$ , $dI_{\text{G}}/dt=1.0\text{A}/\mu\text{s}$	50	$\text{A}/\mu\text{s}$
峰值门极电流 Peak gate current	$I_{\text{GM}}$		1.2	A
平均门极功率 Average gate power	$P_{\text{G(AV)}}$	over any 20ms period	0.2	W
存储温度 Storage temperature	$T_{\text{stg}}$		40~15 0	$^{\circ}\text{C}$
操作结温 Operation junction temperature	$T_{\text{VJ}}$		-40~125	$^{\circ}\text{C}$

## 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
结到引线的热阻 Thermal resistance junction to lead	$R_{\text{th(j-l)}}$	half cycle (TO-126)	-	-	3.0	$^{\circ}\text{C}/\text{W}$
		full cycle(TO-220/TO-220C)			1.5	$^{\circ}\text{C}/\text{W}$
		full cycle(DPAK\IPAK\DPAKM\IPK AM)			2.0	$^{\circ}\text{C}/\text{W}$





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
断态峰值重复电流 Peak Repetitive Blocking Current	I <sub>DRM</sub>	V <sub>DM</sub> =V <sub>DRM</sub> , T <sub>j</sub> =125°C, R <sub>GK</sub> =1KΩ	-	-	1	mA
反向峰值重复电流 Peak Repetitive Reverse Current	I <sub>RPM</sub>	V <sub>RM</sub> =V <sub>RPM</sub> , T <sub>j</sub> =125°C, R <sub>GK</sub> =1KΩ	-	-	1	mA
峰值通态电压 Peak on-state voltage	V <sub>TM</sub>	I <sub>TM</sub> =8A	-	-	1.8	V
门极触发电流 Gate trigger current	I <sub>GT</sub>	V <sub>AK</sub> =12V, R <sub>L</sub> =100Ω	10	-	100	μA
门极触发电压 Gate trigger voltage	V <sub>GT</sub>	V <sub>AK</sub> =7V, R <sub>L</sub> =100Ω	-	0.62	0.8	V
维持电流 Holding current	I <sub>H</sub>	V <sub>AK</sub> =7V, Initiating Current = 20 mA	-	-	5	mA
擎住电流 Latch current	I <sub>L</sub>	V <sub>AK</sub> =7V, I <sub>T</sub> =200μA	-	-	5	mA
断态临界电压上升率 Rise of off- state voltage	dV/dt	V <sub>DM</sub> =100% V <sub>DRM(MAX)</sub> , T <sub>j</sub> =125°C, R <sub>GK</sub> =1KΩ	15	-	-	V/μs

特征曲线 ELECTRICAL CHARACTERISTICS (curves)

Fig. 1: Maximum average power dissipation versus average on-state current.

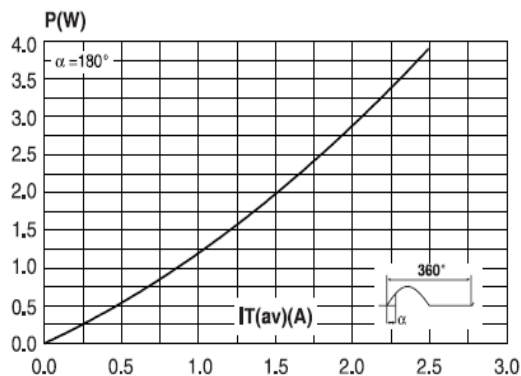


Fig. 2-1: Average and D.C. on-state current versus lead temperature.

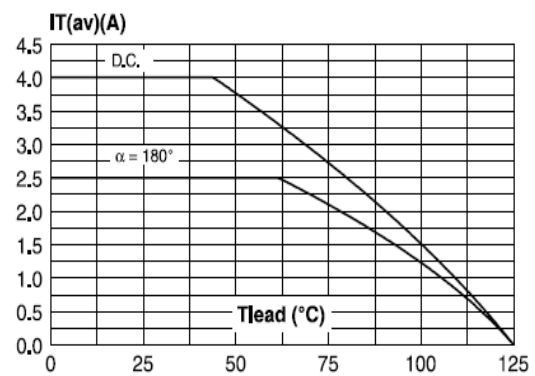




Fig. 2-2: Average and D.C. on-state current versus ambient temperature (device mounted on FR4 with recommended pad layout).

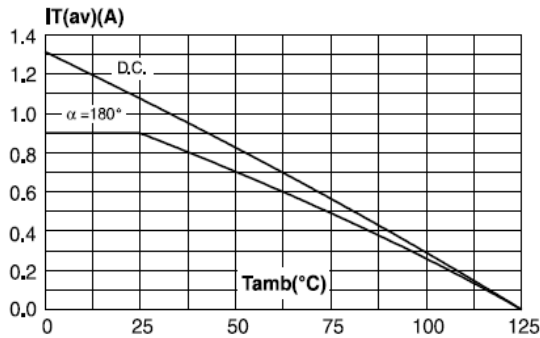


Fig. 3: Relative variation of thermal impedance junction to ambient versus pulse duration.

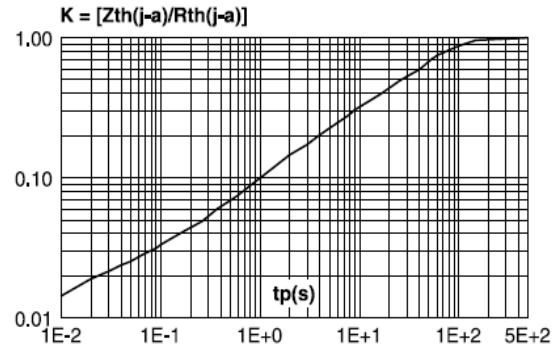


Fig. 4: Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values).

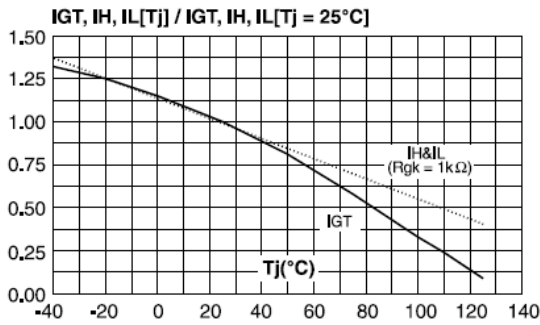


Fig. 5: Relative variation of holding current versus gate-cathode resistance (typical values).

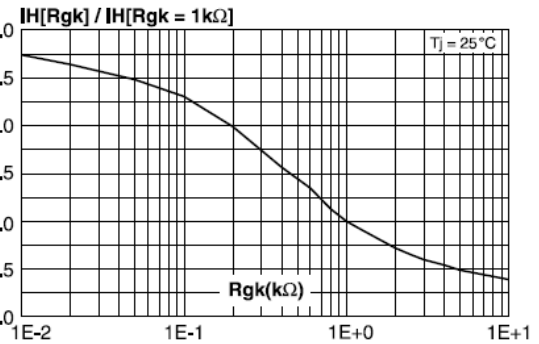


Fig. 6: Relative variation of dV/dt immunity versus gate-cathode resistance (typical values).

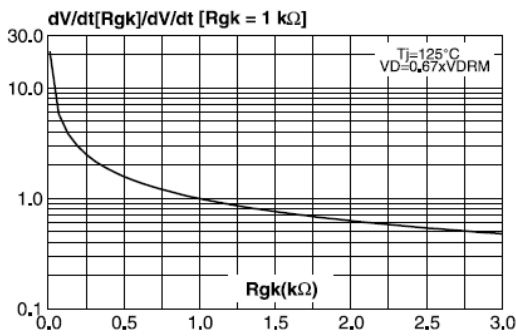
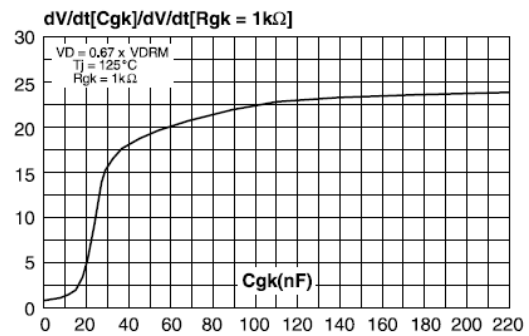


Fig. 7: Relative variation of dV/dt immunity versus gate-cathode capacitance (typical values).

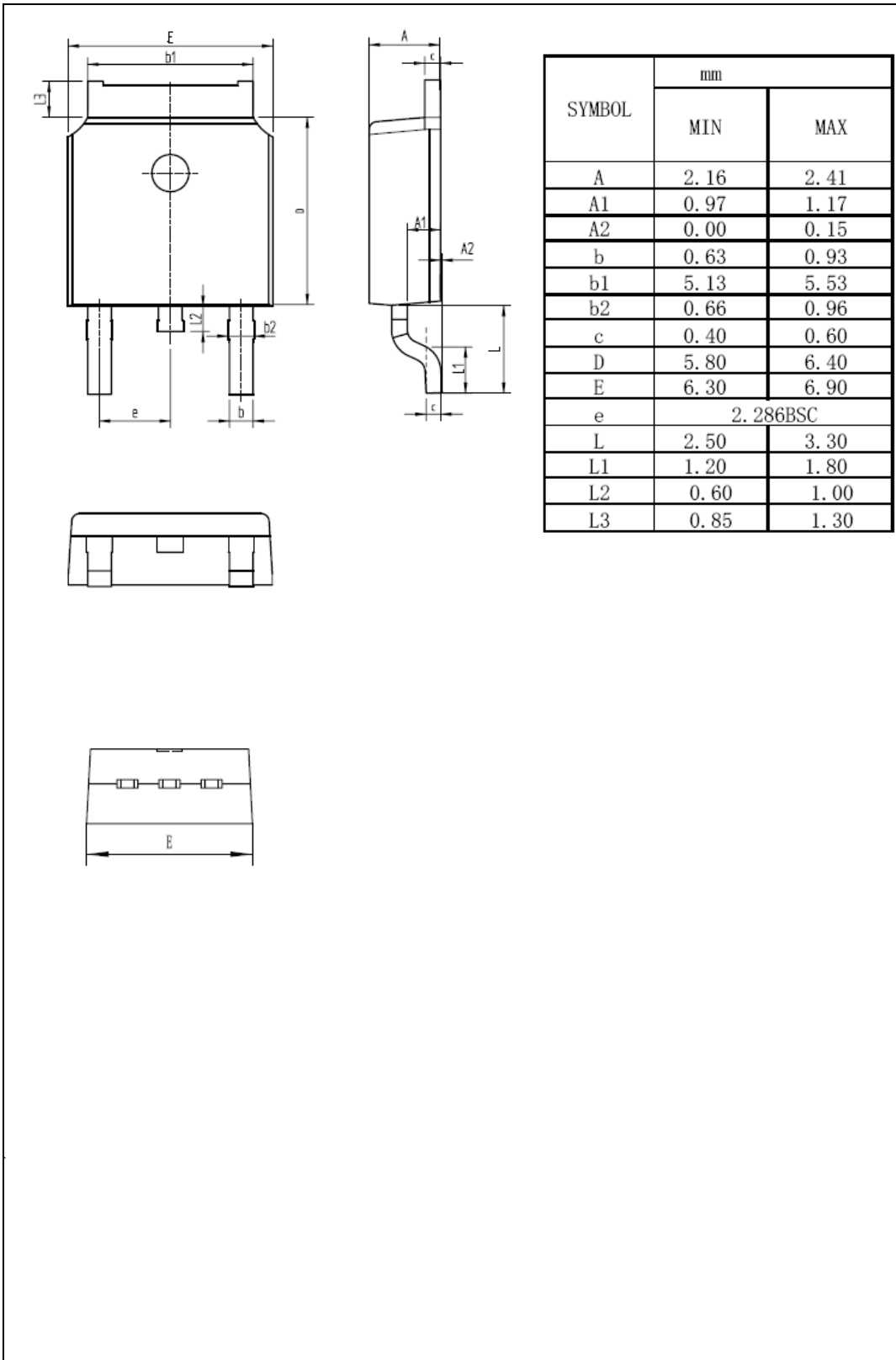




外形尺寸 PACKAGE MECHANICAL DATA

DPAK

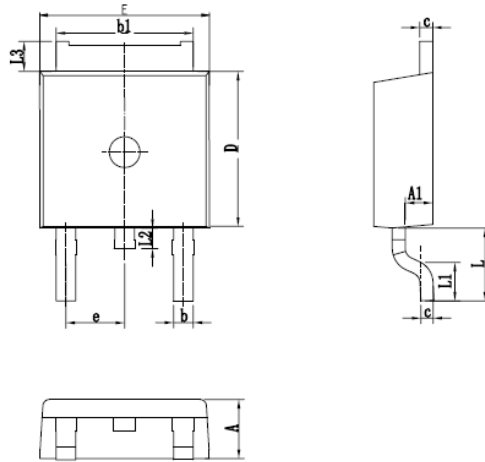
单位 Unit : mm





外形尺寸 PACKAGE MECHANICAL DATA

DPAKM

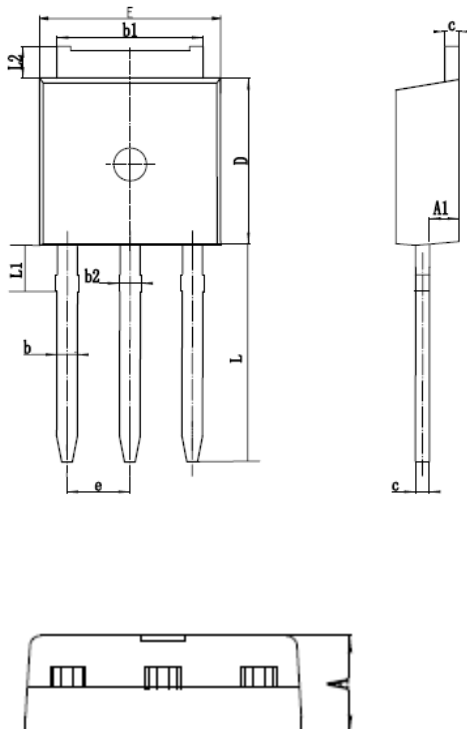


SYMBOL	mm	
	MIN	MAX
A	2.10	2.50
A1	0.80	1.20
b	0.66	0.96
b1	5.10	5.50
c	0.40	0.62
D	5.85	6.45
E	6.30	6.90
e	2.286BSC	
L	2.40	3.00
L1	0.85	1.45
L2	0.60	1.10
L3	0.67	1.07

单位: mm

外形尺寸 PACKAGE MECHANICAL DATA

IPAKM



SYMBOL	mm	
	MIN	MAX
A	2.10	2.50
A1	0.80	1.20
b	0.66	0.96
b1	5.10	5.50
b2	0.85	1.25
c	0.40	0.62
D	5.85	6.45
E	6.30	6.90
e	2.286BSC	
L	9.00	9.60
L1	0.80	2.20
L2	0.67	1.07

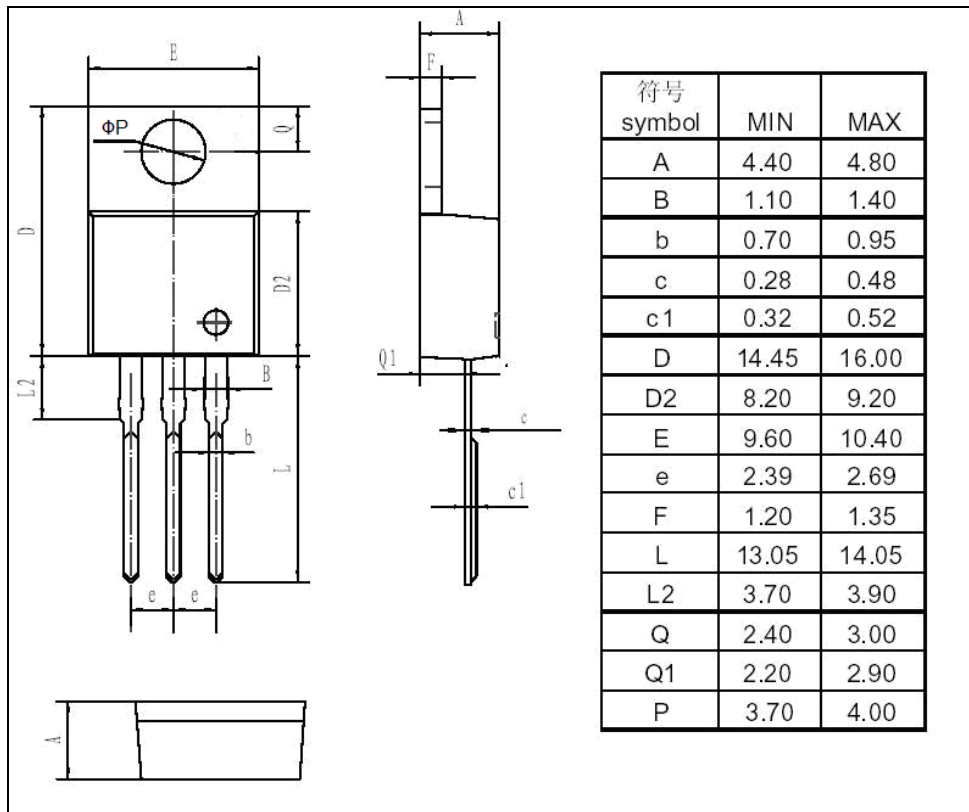




外形尺寸 PACKAGE MECHANICAL DATA

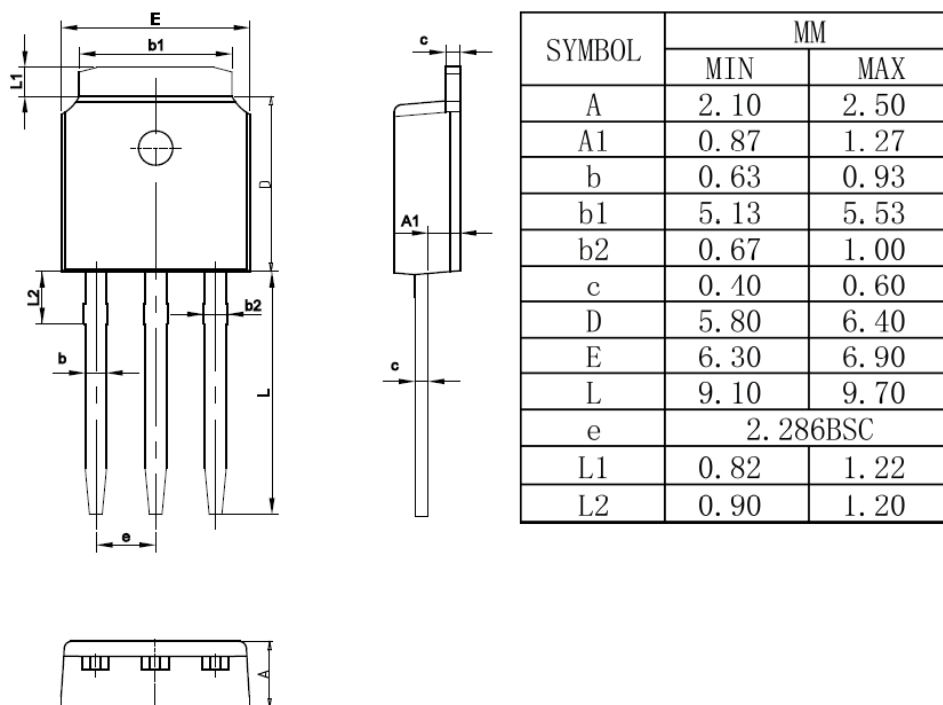
TO-220

单位 Unit : mm



IPAK

单位 Unit : mm



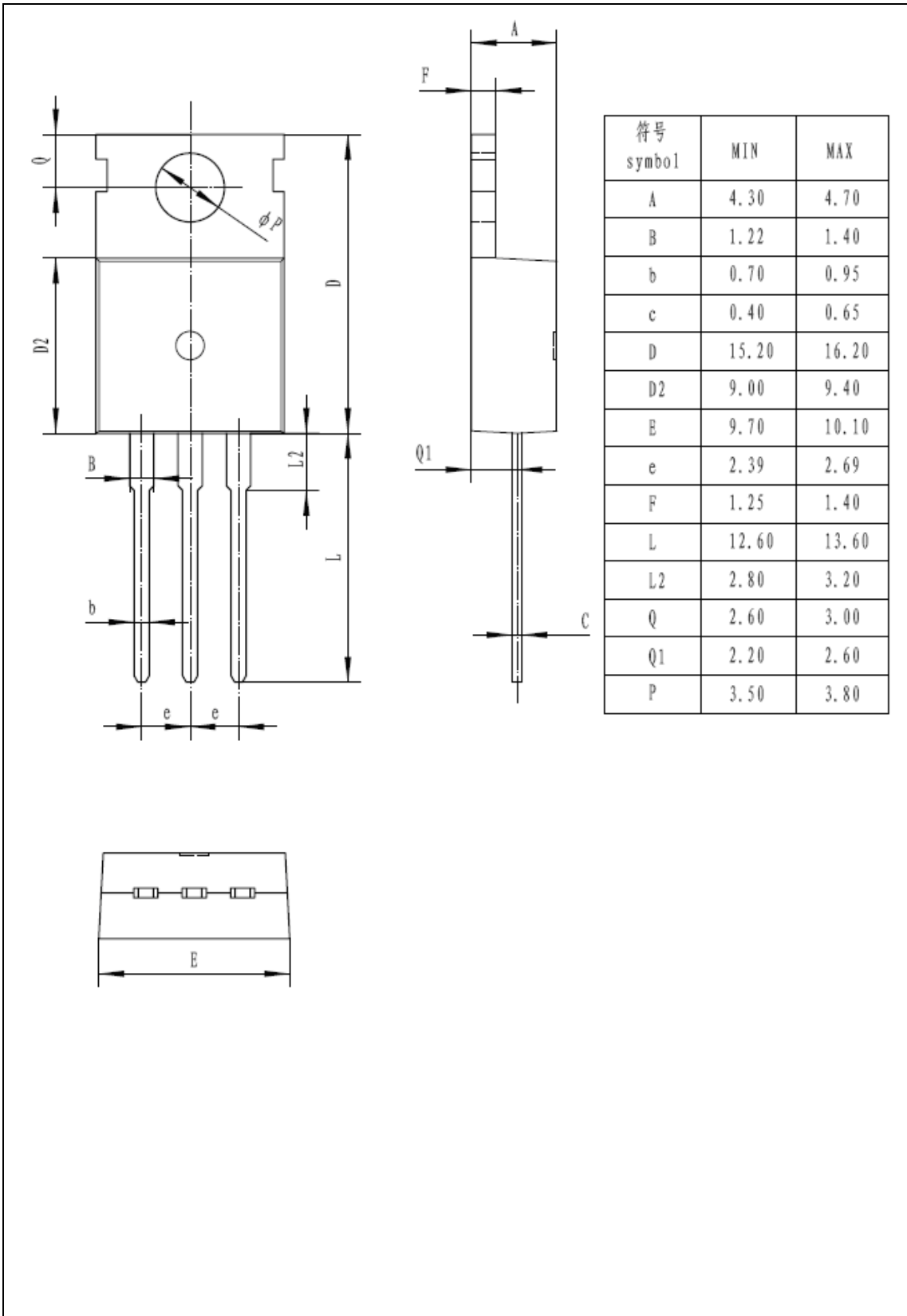




外形尺寸 PACKAGE MECHANICAL DATA

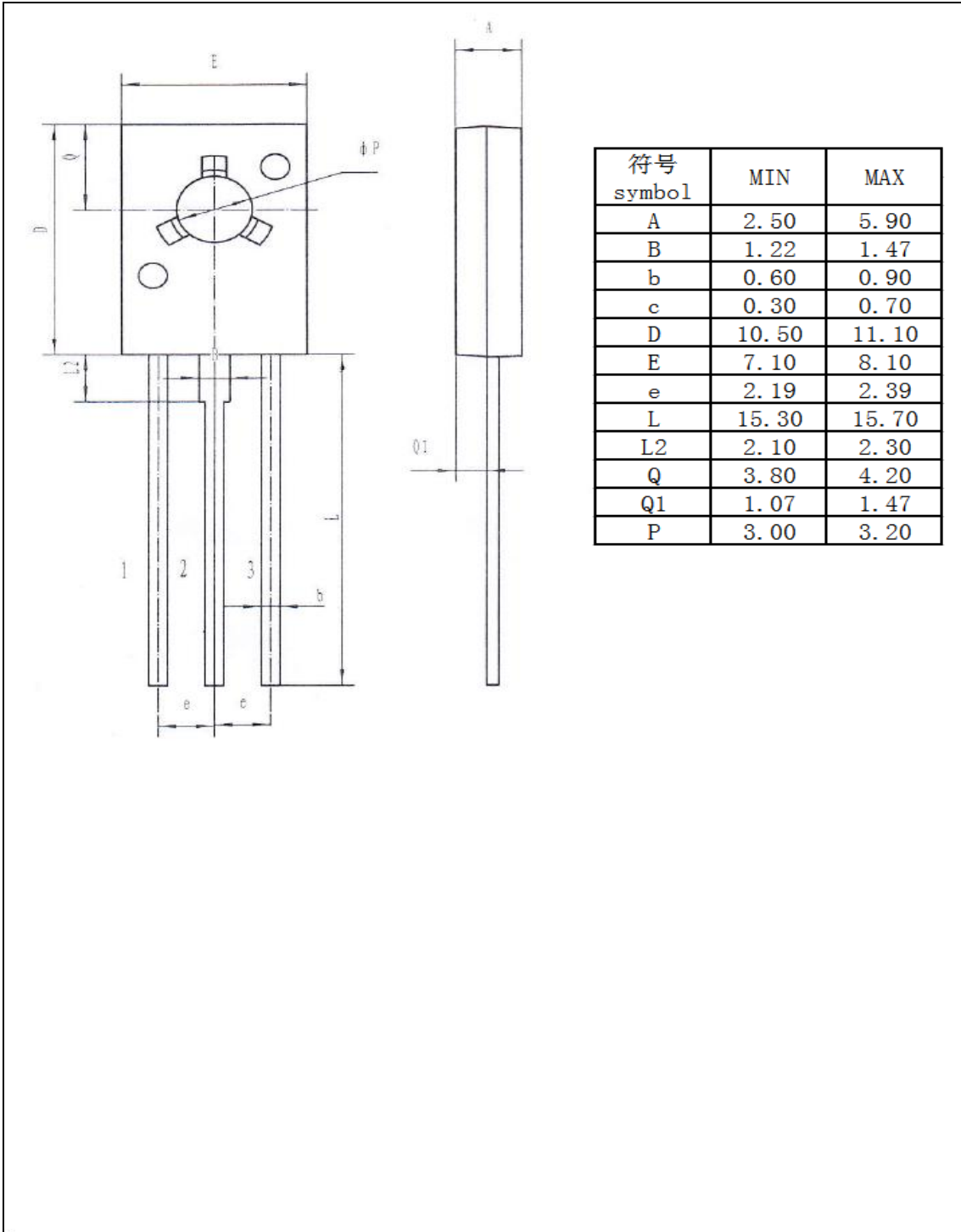
TO-220C

单位 Unit : mm





TO-126





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4. 本说明书如有版本变更不另外告知

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