

CS610N3A

主要参数 MAIN CHARACTERISTICS

$I_T(\text{RMS})$	6A
V_{DRM}	800V
I_{GT}	10mA

用途

- 交流开关
- 相位控制

APPLICATIONS

- AC switching
- Phase control

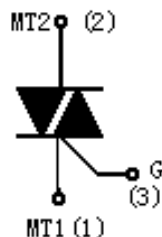
产品特性

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

FEATURES

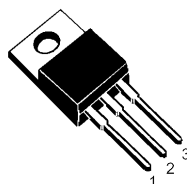
- Glass-passivated mesa chip for reliability and uniform
- Uniform gate trigger currents in three quadrants
- RoHS products

封装 Package

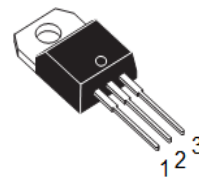


序号 Pin	引线名称 Description
1	主电极 1 MT1
2	主电极 2 MT2
3	门极 G

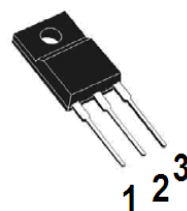
T0-220



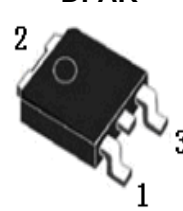
T0-220S



T0-220MF-K1



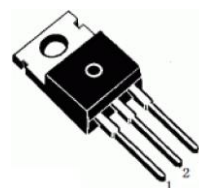
DPAK



IPAK



T0-220C





订货信息 ORDER MESSAGES

订 货 型 号 Order codes				印 记 Marking	封 装 Package
有卤-编带	无卤-编带	N/A	N/A		
Halogen-Reel	Halogen-Free-Reel	N/A	N/A		
CS610N3A-R-A	CS610N3A-R-AR	N/A	N/A	CS610N3A	DPAK
有卤-条管	无卤-条管	有卤-袋装	无卤-袋装	CS610N3A	IPAK
Halogen-Tube	halogen-Free-Tube	Halogen- Bag	Halogen-Free-Bag		
CS610N3A-V-B	CS610N3A-V-BR	CS610N3A-V-C	CS610N3A-V-CR		
有卤-条管	无卤-条管	有卤-袋装	无卤-袋装	CS610N3A	TO-220
Halogen-Tube	halogen-Free-Tube	Halogen- Bag	Halogen-Free-Bag		
CS610N3A-CA-B	CS610N3A-CA-BR	CS610N3A-CA-C	CS610N3A-CA-CR		
有卤-条管	无卤-条管	有卤-袋装	无卤-袋装	CS610N3A	TO-220C
Halogen-Tube	halogen-Free-Tube	Halogen- Bag	Halogen-Free-Bag		
CS610N3A-C-B	CS610N3A-C-BR	CS610N3A-C-C	CS610N3A-C-CR		
有卤-条管	无卤-条管	有卤-袋装	无卤-袋装	CS610N3A	TO-220S
Halogen-Tube	halogen-Free-Tube	Halogen- Bag	Halogen-Free-Bag		
CS610N3A-CB-B	CS610N3A-CB-BR	CS610N3A-CB-C	CS610N3A-CB-CR		
有卤-条管	无卤-条管	有卤-袋装	无卤-袋装	CS610N3A	TO-220MF-K1
Halogen-Tube	halogen-Free-Tube	Halogen- Bag	Halogen-Free-Bag		
CS610N3A-F1-B	CS610N3A-F1-BR	CS610N3A-F1-C	CS610N3A-F1-CR		



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}		± 800	V
通态方均根电流 On-state RMS current	$I_{\text{T(RMS)}}$	full sine wave	6	A
非重复浪涌峰值通态电流 Non-repetitive surge peak on-state current	I_{TSM}	full sine wave, $t=20\text{ms}$	65	A
		full sine wave, $t=16.7\text{ms}$	71	A
	I^2t	$t=10\text{ms}$	21	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°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} =800V, T _j =125°C, gate open	-	-	0.5	mA
峰值通态电压 Peak on-state voltage	V _{TM}	I _{TM} =8A	-	1.35	1.65	V
门极触发电流 Gate trigger current	I _{GT}	V _{DM} =12V, R _L =100 Ω	MT1(-),MT2(+),G(+)	-	-	10 mA
			MT1(-),MT2(+),G(-)	-	-	10 mA
			MT1(+),MT2(-),G(-)	-	-	10 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	-	-	25	mA
擎住电流 Latching current	I _L	V _{DM} =12V, I _{GT} =0.1A	MT1(-),MT2(+),G(+)	-	-	35 mA
			MT1(-),MT2(+),G(-)	-	-	35 mA
			MT1(+),MT2(-),G(-)	-	-	35 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	10	-	-	V/ μ s
门极开通时间 Gate controlled turn-on time	t _{gt}	I _{TM} =6A, V _{DM} =V _{DRM(MAX)} , I _G =0.1A, dI _G /dt=5A/ μ s	-	2	-	μ s

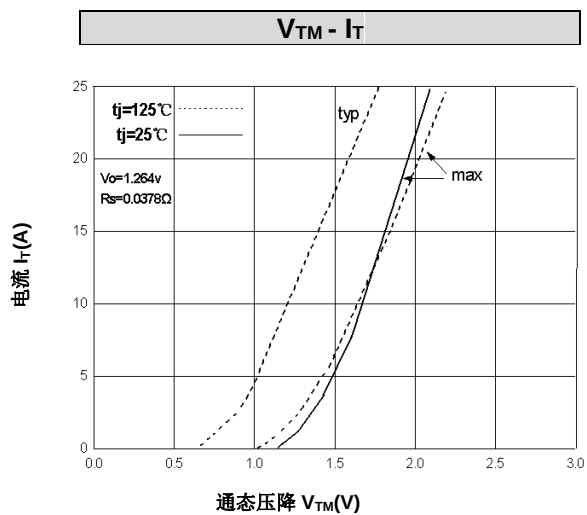
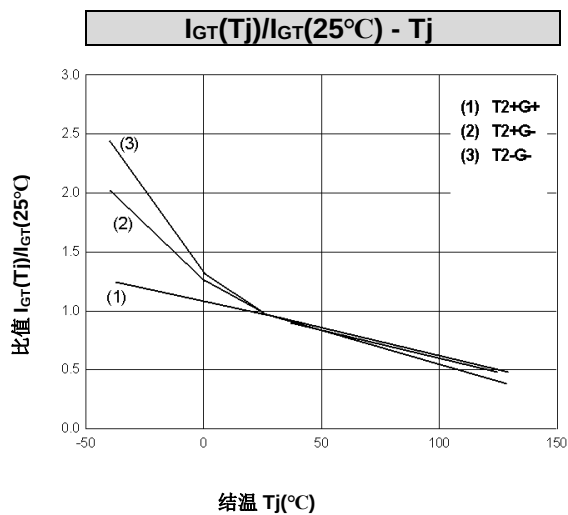
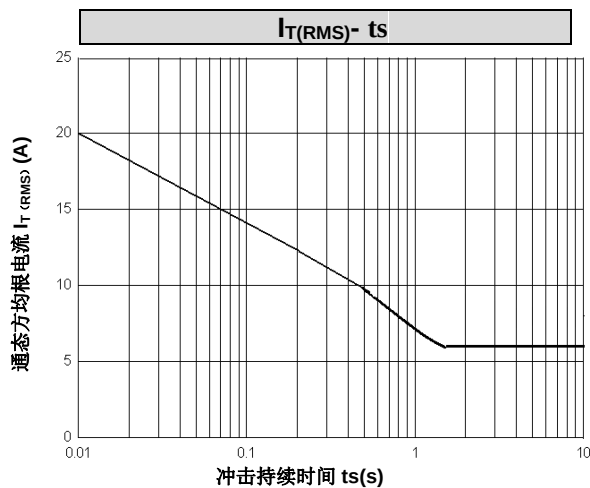
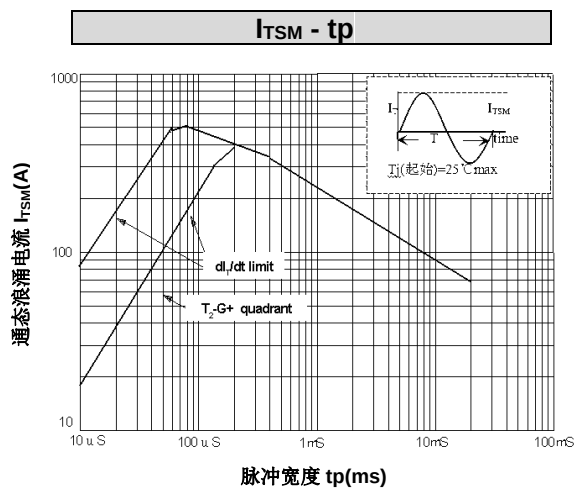
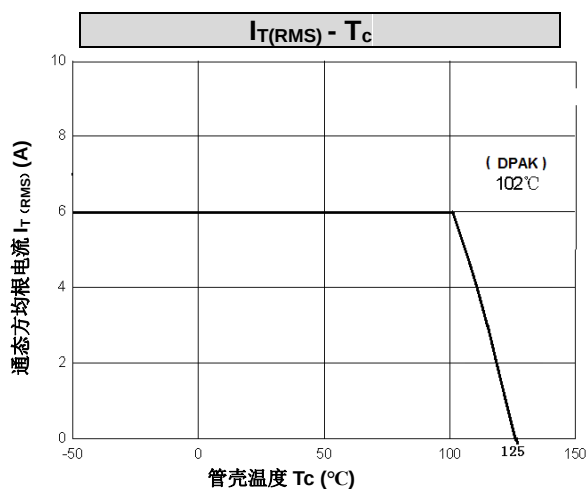
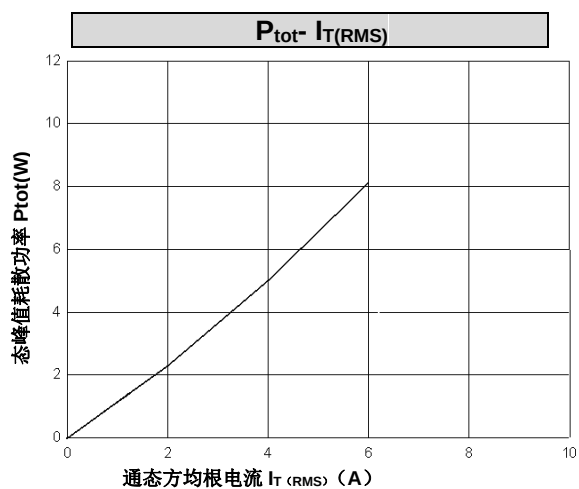
热特性 THERMAL CHARACTERISTIC

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(DPAK\IPAK)			2.0	°C/W
		full cycle(TO-220S\TO-220)			2.8	°C/W
		full cycle(TO-220MF-K1)			4.1	°C/W





特征曲线 ELECTRICAL CHARACTERISTICS (curves)

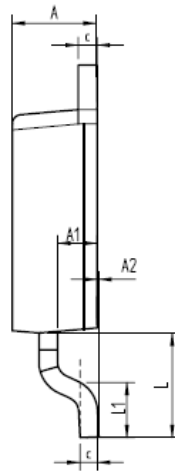
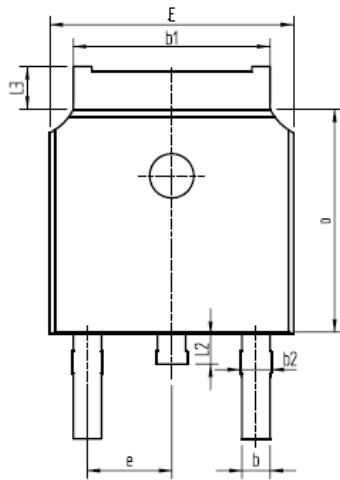




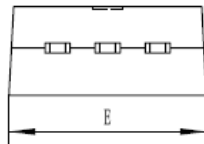
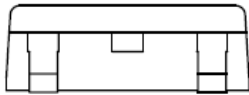
外形尺寸 PACKAGE MECHANICAL DATA

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

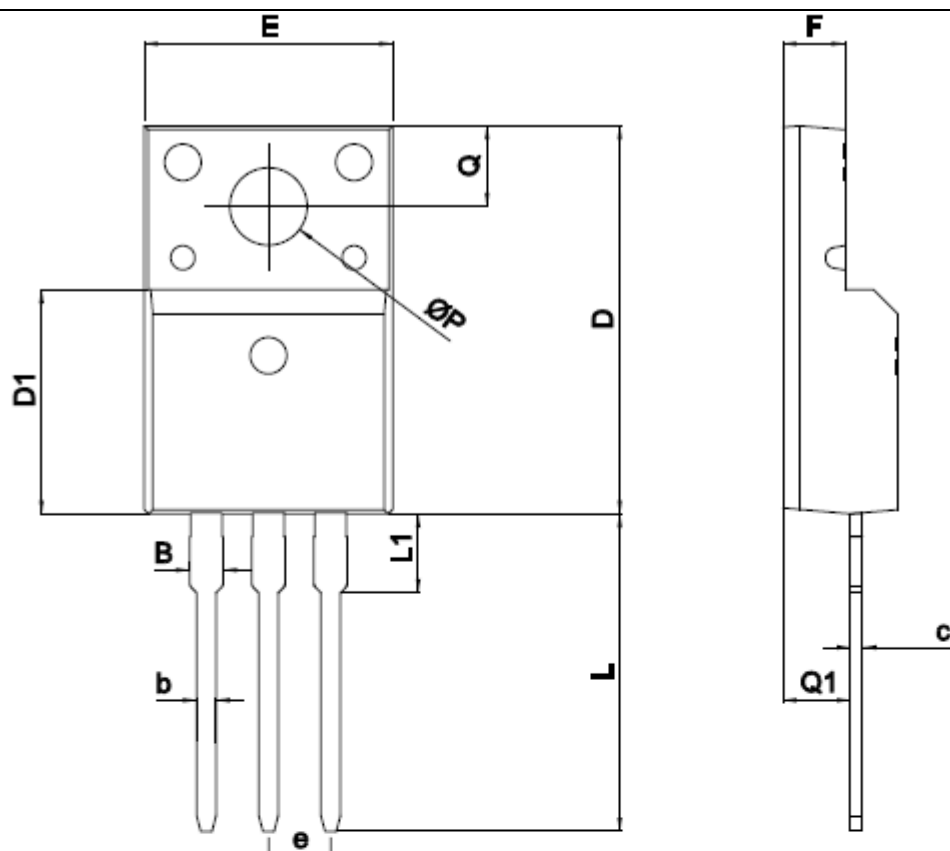




TO-220MF-K1

CS610N3A

单位 Unit : mm



SYMBOL	mm	
	MIN	MAX
A	4.5	4.9
B	1.22	1.47
b	0.7	0.9
c	0.45	0.60
D	15.6	16.1
D1	9.0	9.3
e	2.54TYPE	
E	9.9	10.4
F	2.3	2.8
L	12.6	13.3
L1	3.1	3.4
Q	3.2	3.4
Q1	2.6	2.9
ΦP	3.0	3.5

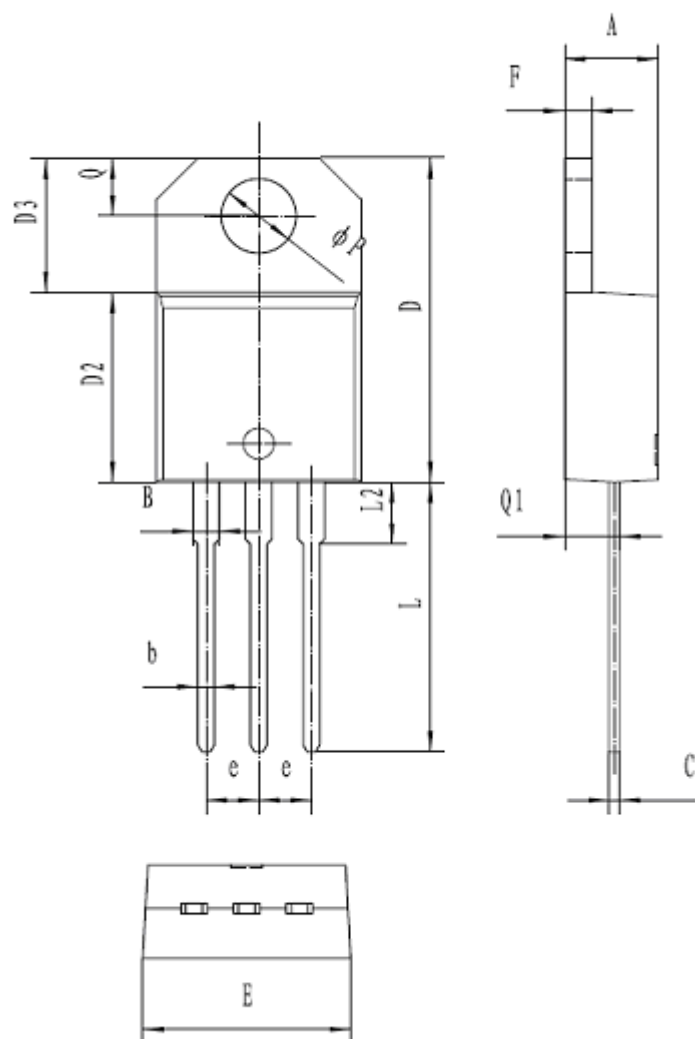




TO-220S

CS610N3A

单位 Unit : mm



符号 symbol	MIN	MAX
A	4.40	4.60
B	1.14	1.70
b	0.61	0.88
C	0.47	0.70
D	15.20	15.90
D2	8.60	9.70
D3	6.20	6.60
E	10.00	10.40
e	2.40	2.70
F	1.23	1.32
L	13.00	14.00
L2	typ. 3.75	
Q	2.65	2.95
Q1	2.89	3.42
P	3.72	3.85

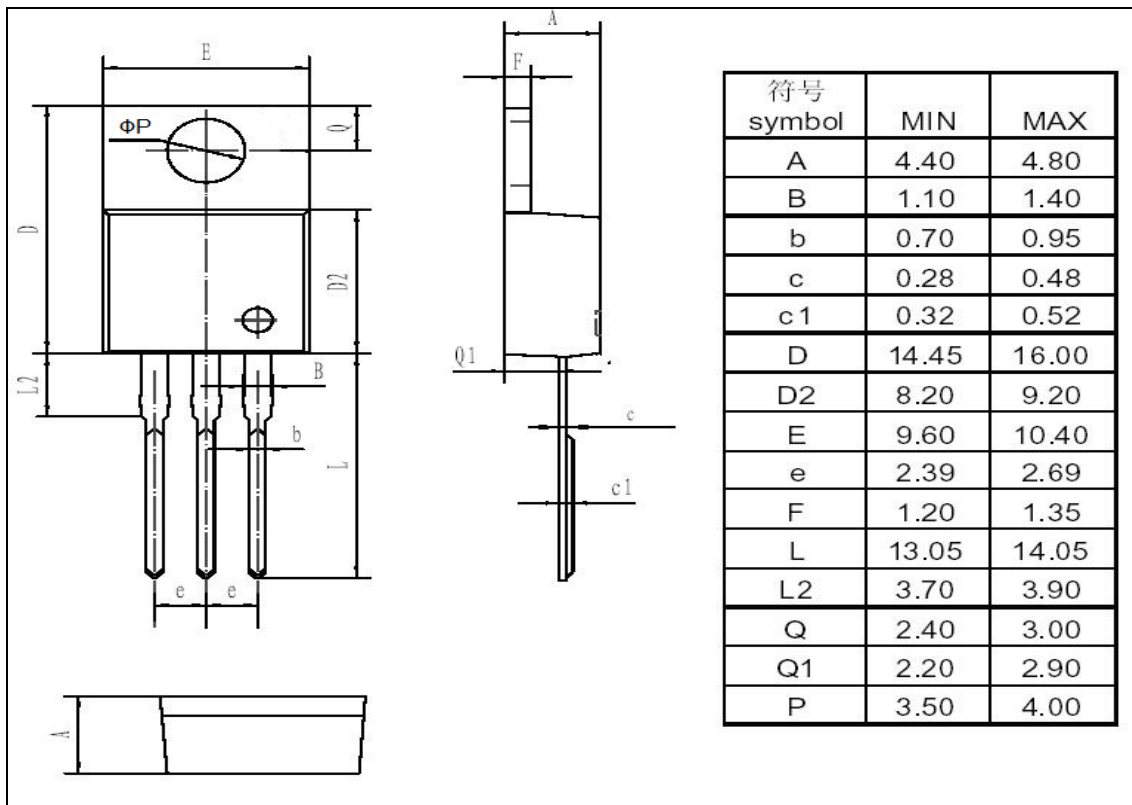




TO-220

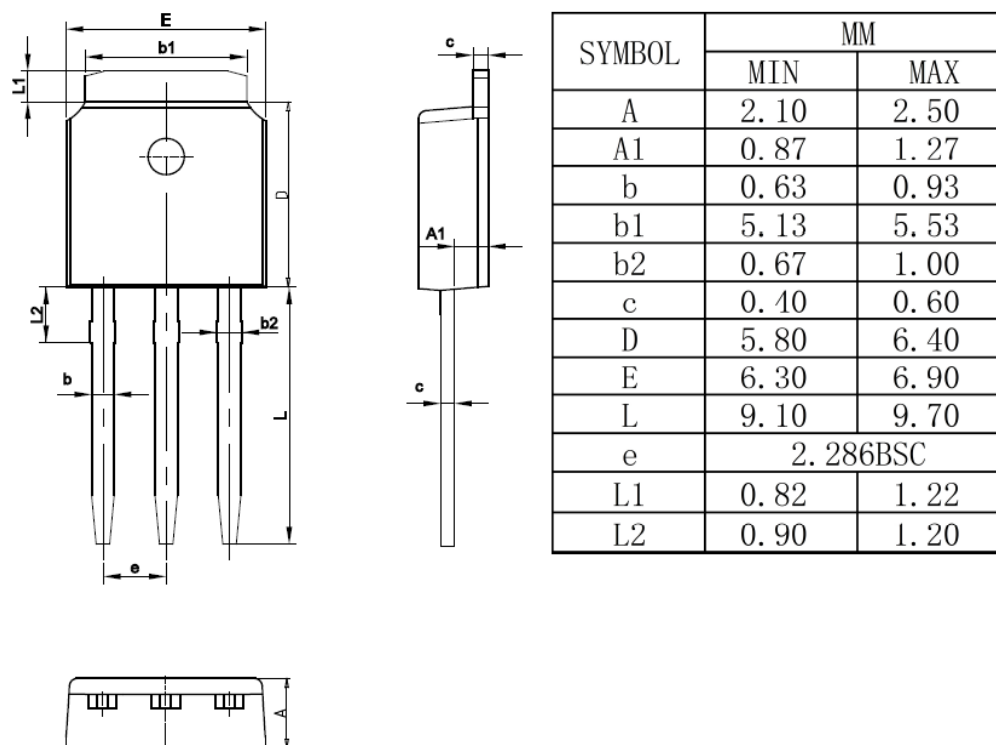
CS610N3A

单位 Unit : mm



IPAK

单位 Unit : mm

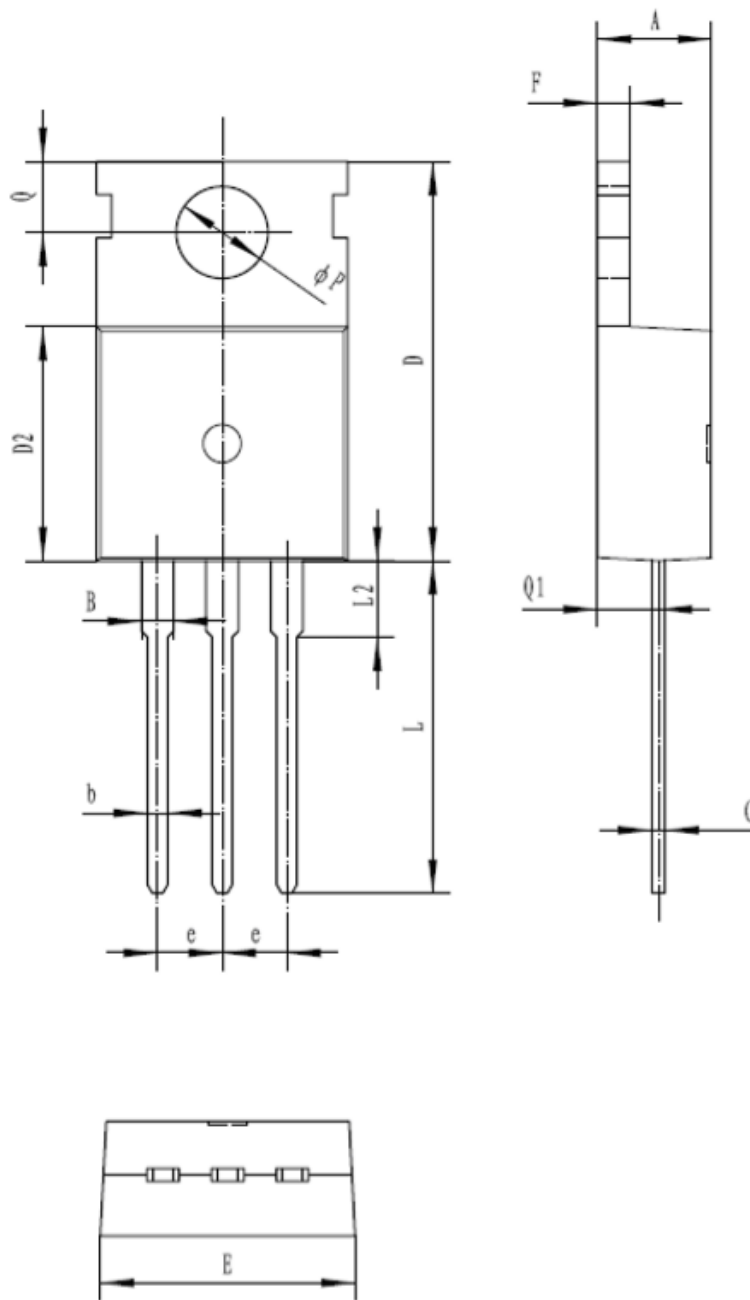




TO-220C

CS610N3A

单位 Unit : mm



符号 symbol	MIN	MAX
A	4.30	4.70
B	1.22	1.40
b	0.70	0.95
c	0.40	0.65
D	15.20	16.20
D2	9.00	9.40
E	9.70	10.10
e	2.39	2.69
F	1.25	1.40
L	12.60	13.60
L2	2.80	3.20
Q	2.60	3.00
Q1	2.20	2.60
P	3.50	3.80





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