



Z0405 (NM、NU、NC、NF1)

主要参数 MAIN CHARACTERISTICS

$I_{T(RMS)}$	4A
V_{DRM}	800V
I_{GT}	5mA

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

低通态电流和高浪
涌电流能力

环保 RoHS 产品

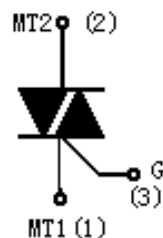
FEATURES

Glass-passivated mesa
chip for reliability and
uniform

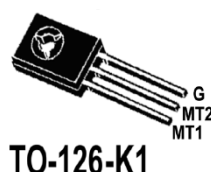
Low on-state voltage and
High I_{TSM}

RoHS products

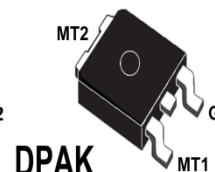
封装 Package



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



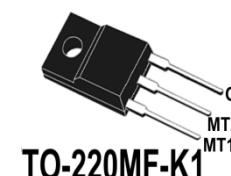
TO-126-K1



DPAK



TO-220C



TO-220MF-K1

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	无卤-编带		
Halogen-Tube	Halogen-Free-Tube	Halogen-Free-Reel		
Z0405NM-M-B	Z0405NM-M-BR	Z0405NM-M-AR	Z0405NM	TO-126-K1
N/A	Z0405NU-R-BR	Z0405NU-R-AR	Z0405NU	DPAK
Z0405NC-CA-B	Z0405NC-CA-BR	N/A	Z0405NC	TO-220C
Z0405NF1-F1-B	Z0405NC-F1-BR	N/A	Z0405NF1	TO-220MF-K1



概述 GENERAL DESCRIPTION

Z0405NM/Z0405NU/Z0405NC/ Z0405NF1是玻璃钝化芯片结构的四象限双向晶闸管。器件封装形式有TO-126-K1、DPAK、TO-220C、TO-220MF-K1。

Z0405NM/Z0405NU/Z0405NC/ Z0405NF1 are Glass passivated four quadrant triacs.

Available package are TO-126-K1、DPAK、TO-220C、TO-220MF-K1.

绝对最大额定值 ABSOLUTE RATINGS (T_c=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	4	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	25	A
		full sine wave ,t=16.7ms	27	A
	I ² t	t=10ms	3.1	A ² s
通态电流临界上升率 Repetitive rate of rise of on-state current after triggering	di/dt	I _{TM} =6A, I _G =0.2A, di _G /dt=0.2A/ μ s	50	A/ μ 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_c=25℃)

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 =25℃, gate open	-	-	10	μ A
		V _{DM} =V _{DRM} , T _j =125℃, gate open	-	-	0.5	mA
峰值通态电压 Peak on-state voltage	V _{TM}	I _{TM} =5A	-	-	1.7	V
门极触发电流 Gate trigger current	I _{GT}	V _{DM} =12V, R _L =100 Ω	MT1(-),MT2(+),G(+)	-	5	mA
			MT1(-),MT2(+),G(-)	-	5	mA
			MT1(+),MT2(-),G(-)	-	5	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(+)	-	1.5	V
			MT1(-),MT2(+),G(-)	-	1.5	V
			MT1(+),MT2(-),G(-)	-	1.5	V
			MT1(+),MT2(-),G(+)	-	1.5	V
维持电流 Holding current	I _H	V _{DM} =12V, I _{GT} =0.1A	-	-	10	mA
擎住电流 Latching current	I _L	I , III	-	-	15	mA
		II , IV	-	-	20	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℃, gate open	-	5	-	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

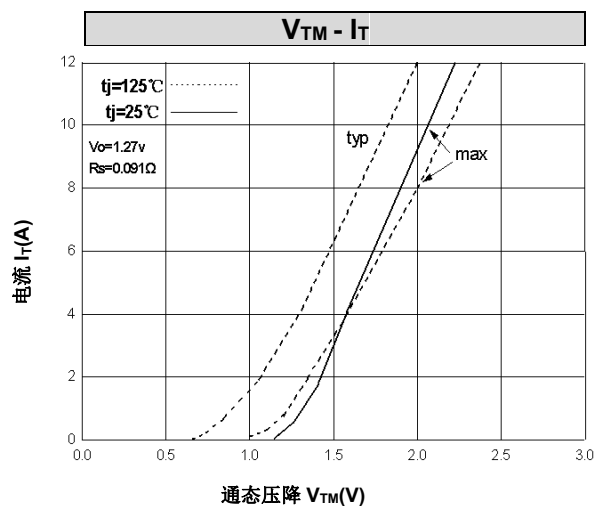
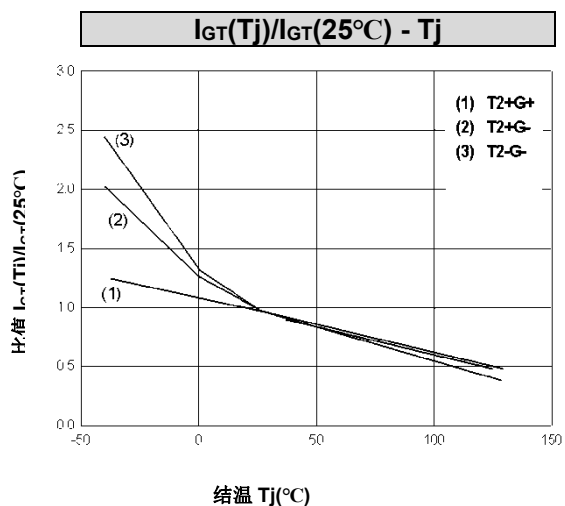
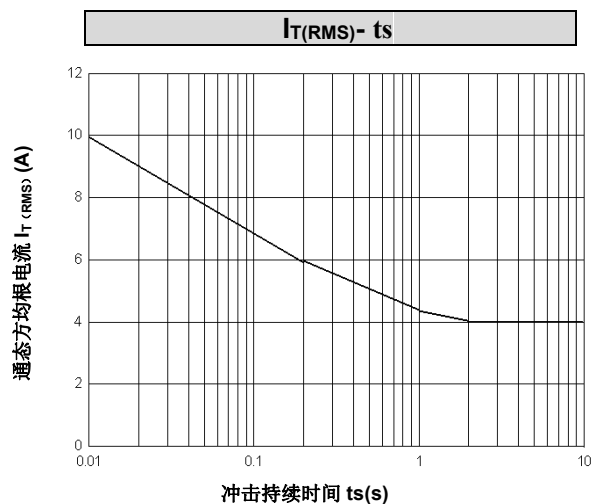
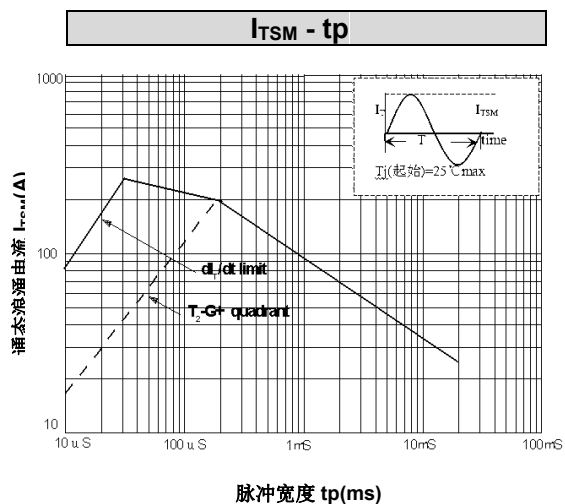
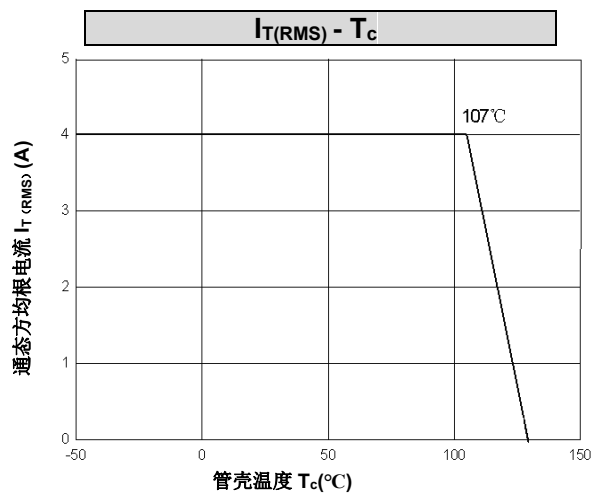
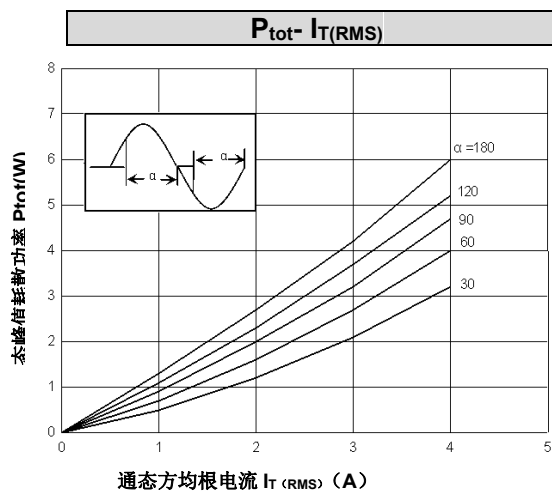
热特性 THERMAL CHARACTERISTIC

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 (TO-126-K1/DPAK/TO-220C)			3.0	℃/W
结到管壳的热阻 Thermal resistance junction to case	R _{th(j-c)}	full cycle (TO-220MF-K1)			5.5	℃/W





特征曲线 ELECTRICAL CHARACTERISTICS (curves)



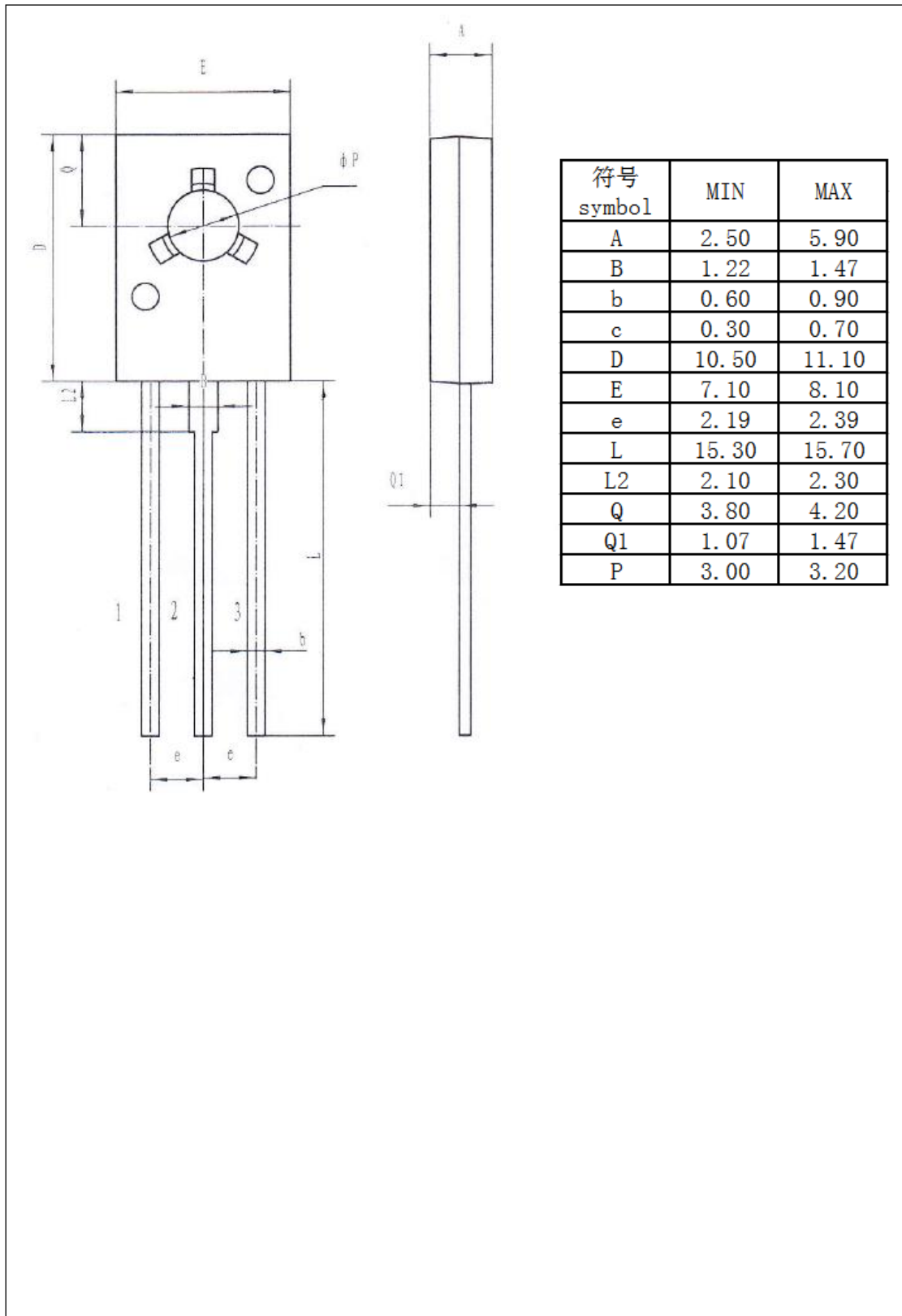


Z0405NM/Z0405NU/Z0405NC/ Z0405NF1

外形尺寸 PACKAGE MECHANICAL DATA

TO-126-K1

单位 Unit :mm



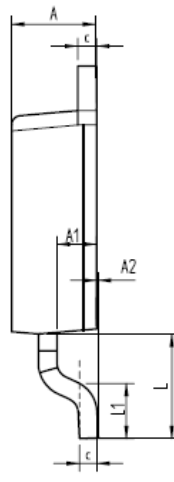
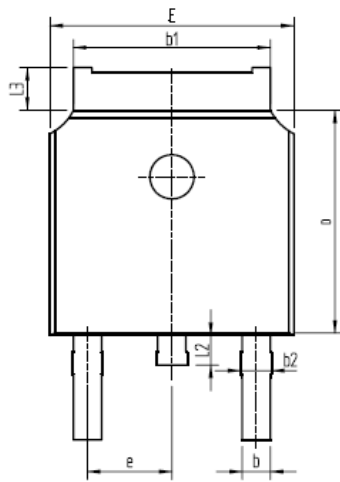


Z0405NM/Z0405NU/Z0405NC/ Z0405NF1

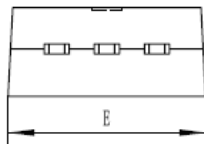
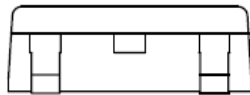
外形尺寸 PACKAGE MECHANICAL DATA

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



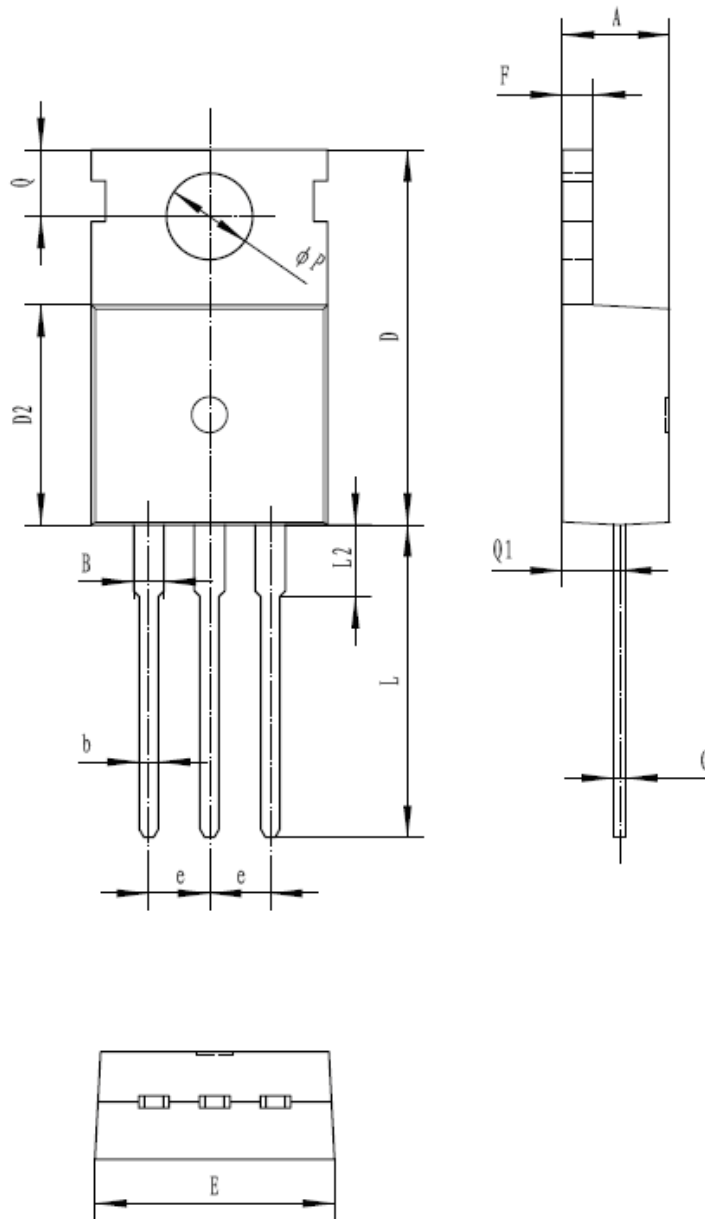


Z0405NM/Z0405NU/Z0405NC/ Z0405NF1

外形尺寸 PACKAGE MECHANICAL DATA

TO-220C

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

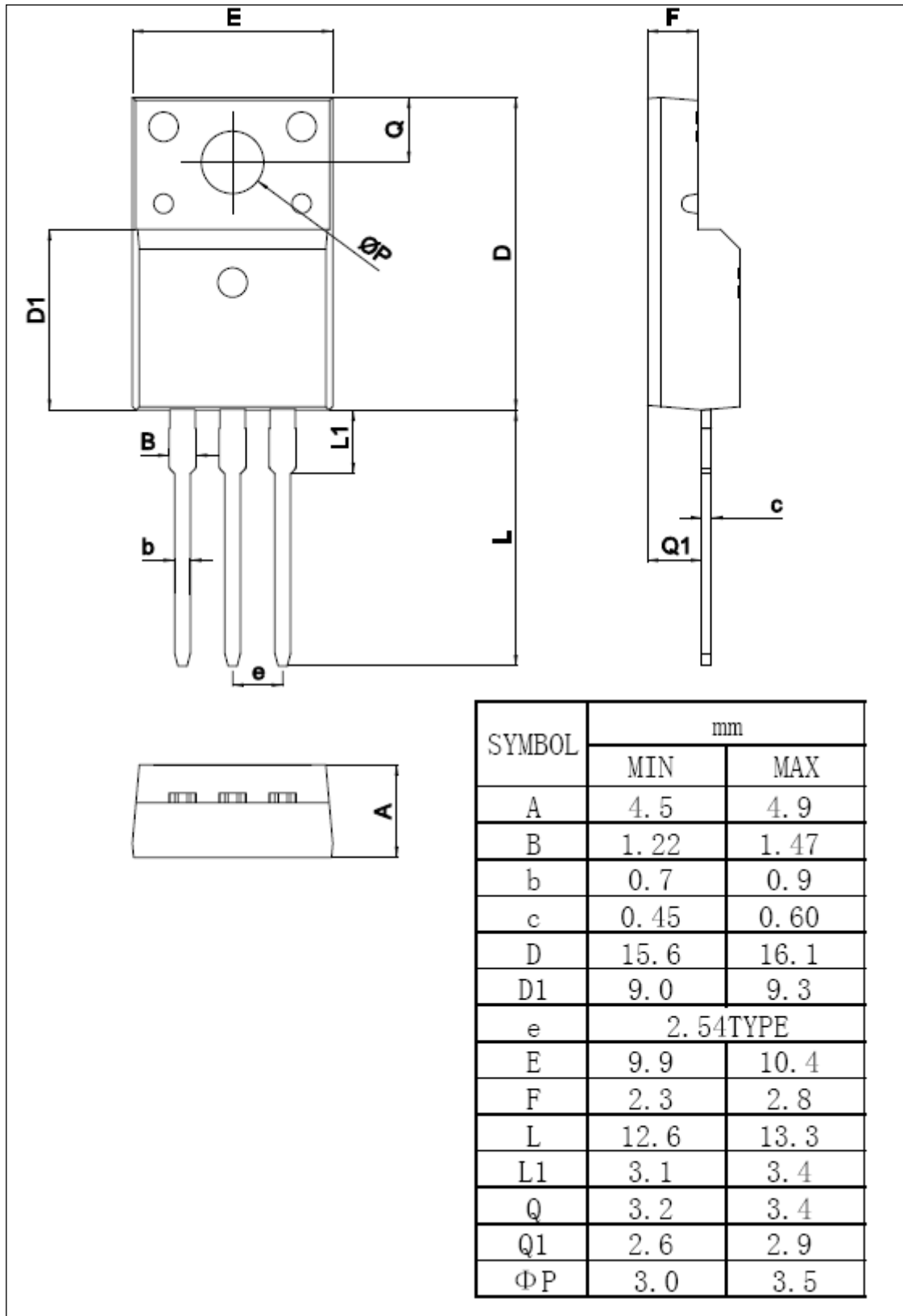


Z0405NM/Z0405NU/Z0405NC/ Z0405NF1

外形尺寸 PACKAGE MECHANICAL DATA

TO-220MF-K1

单位 Unit : mm





注意事项

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