3FT4C/F/M/U

主要参数　MAIN CHARACTERISTICS

$I_{T(RMS)}$	4A
V_{DRM}	600V or 800V
I_{GT}	10mA

用途　APPLICATIONS

- 交流开关
- 相位控制

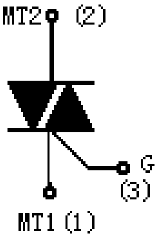
- AC switching
- Phase control

产品特性　FEATURES

- 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

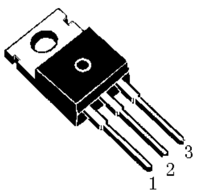
- Glass-passivated mesa chip for reliability and uniform
- Low on-state voltage and High I_{TSM}
- RoHS products

封装 Package

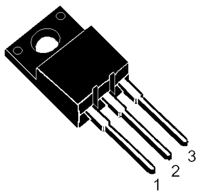


序号 Pin	引线名称 Description
1	主电极 1　MT1
2	主电极 2　MT2
3	门极　G

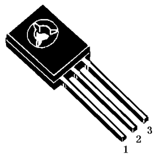
TO-220C



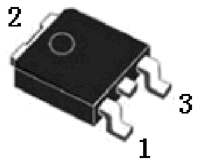
TO-220HF



TO-126



DPAK



订货信息 ORDER MESSAGES

订货型号 Order code	印记 Marking	封装 Package	包装 Packaging
3FT4C-O-C-N-B	3FT4C	TO-220C	条管　Tube
3FT4F-O-HF-N-B	3FT4F	TO-220HF	条管　Tube
3FT4M-O-M-N-C	3FT4M	TO-126	袋装　Bag
3FT4U-O-U-B-A	3FT4U	DPAK	编带　Tape

概述 GENERAL DESCRIPTION

3FT4C/F/M/U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-220C、TO-220HF、TO-126和DPAK。

3FT4C/F/M/U are Glass passivated four quadrant triacs. Available packages are TO-220C、TO-220HF、TO-126 and DPAK.

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}		±600 ±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^2t	t=10ms	3.1	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}=6A, I_G=0.2A, dI_G/dt=0.2A/μs	50	A/μs
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}, Tj=25℃, gate open		-	-	10	μA
		V_{DM}=V_{DRM}, Tj=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=100Ω	MT1(-),MT2(+),G(+)	-	-	10	mA
			MT1(-),MT2(+),G(-)	-	-	10	mA
			MT1(+),MT2(-),G(-)	-	-	10	mA
			MT1(+),MT2(-),G(+)	-	-	45	mA
门极触发电压 Gate trigger voltage	V_{GT}	V_{DM}=12V, R_L=100Ω	MT1(-),MT2(+),G(+)	-	-	1.5	V
			MT1(-),MT2(+),G(-)	-	-	1.5	V
			MT1(+),MT2(-),G(-)	-	-	1.5	V
			MT1(+),MT2(-),G(+)	-	-	2.0	V
维持电流 Holding current	I_H	V_{DM}=12V, I_{GT}=0.1A		-	-	15	mA
擎住电流 Latching current	I_L	V_{DM}=12V,I_{GT}=0.1A		-	-	30	mA
断态临界电压上升率 Rise of off- state voltage	dV/dt	V_{DM}=67% $V_{DRM(MAX)}$, Tj=125℃, gate open		-	50	-	V/μs
门极开通时间 Gate controlled turn-on time	tgt	I_{TM}=6A, V_{DM}=$V_{DRM(MAX)}$, I_G=0.1A, dI_G/dt=5A/μS		-	2	-	μs

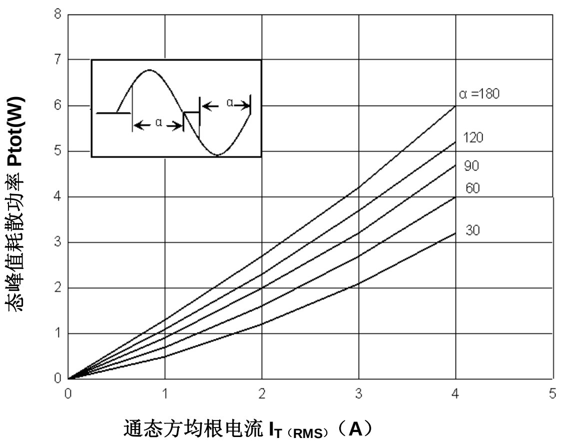
热特性 THERMAL CHARACTERISTIC

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-220C/TO-126/TO-252)			3.0	℃/W
		full cycle(TO-220HF)			5.5	℃/W

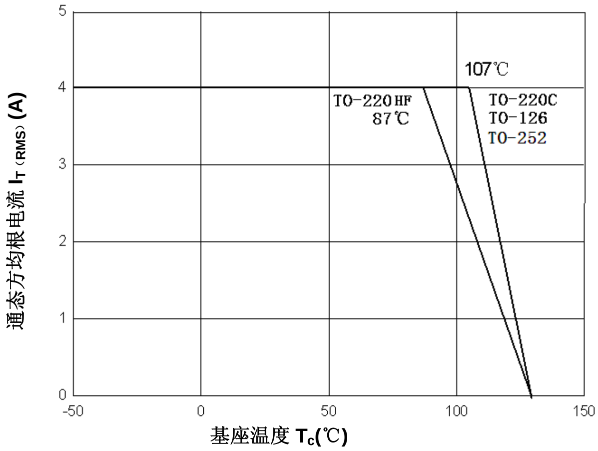
电绝缘特性 ELECTRICAL ISOLATION

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-220HF	2000	V

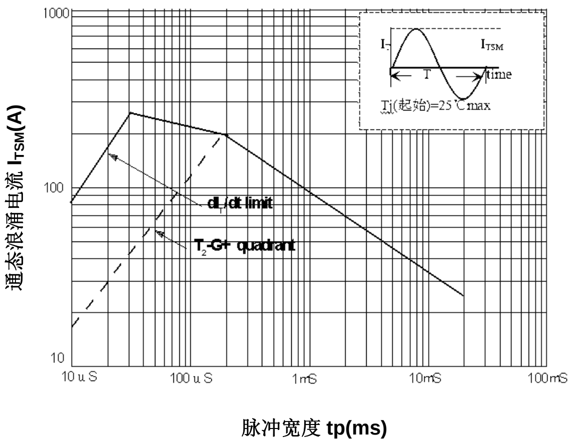
特征曲线　ELECTRICAL CHARACTERISTICS (curves)



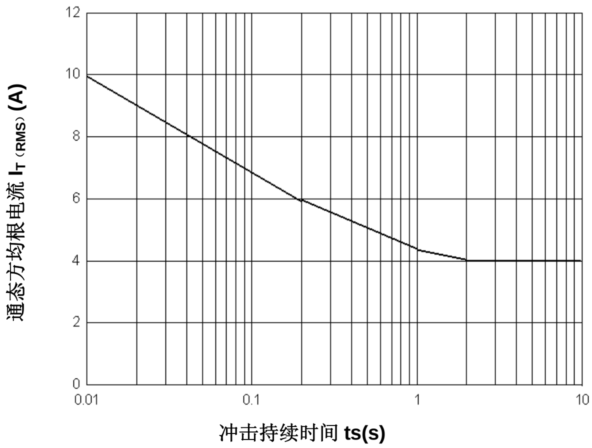
P_{tot}- $I_{T(RMS)}$



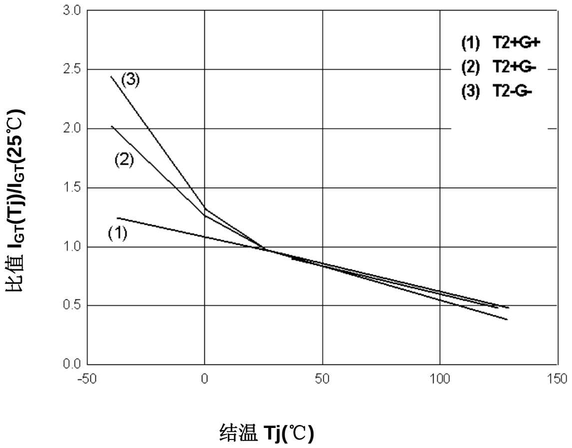
$I_{T(RMS)}$ – T_c



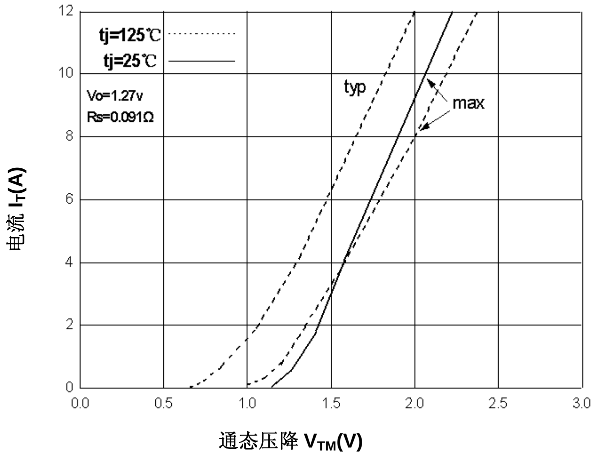
I_{TSM} - tp



$I_{T(RMS)}$- ts



I_{GT}(Tj)/I_{GT}(25℃) - Tj

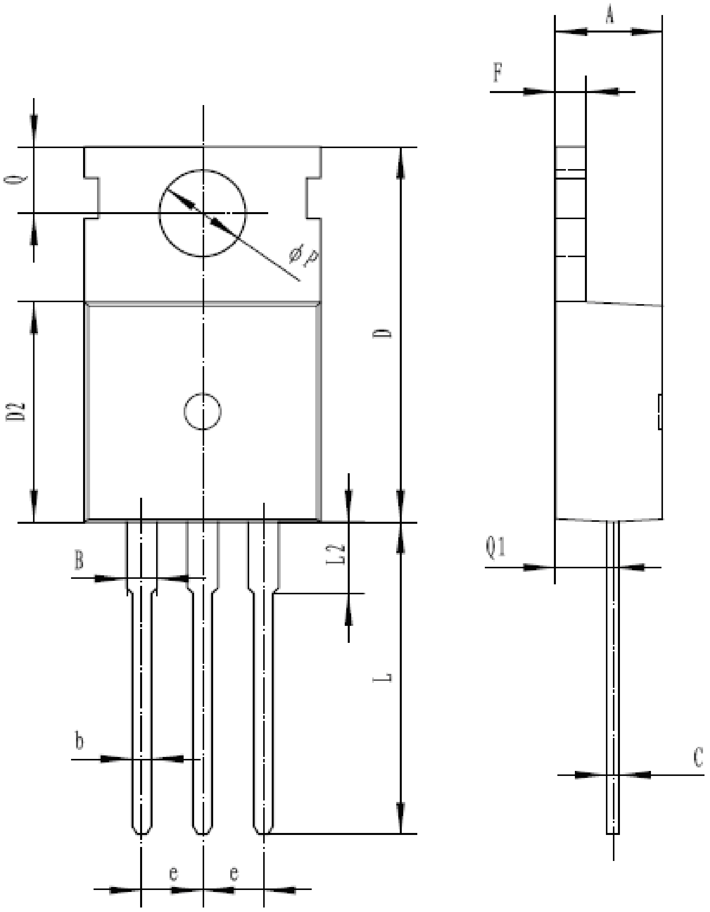


V_{TM} - I_T

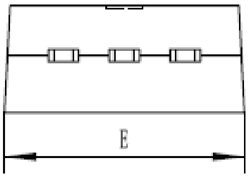
外形尺寸 PACKAGE MECHANICAL DATA

TO-220C

单位 **Unit ：mm**

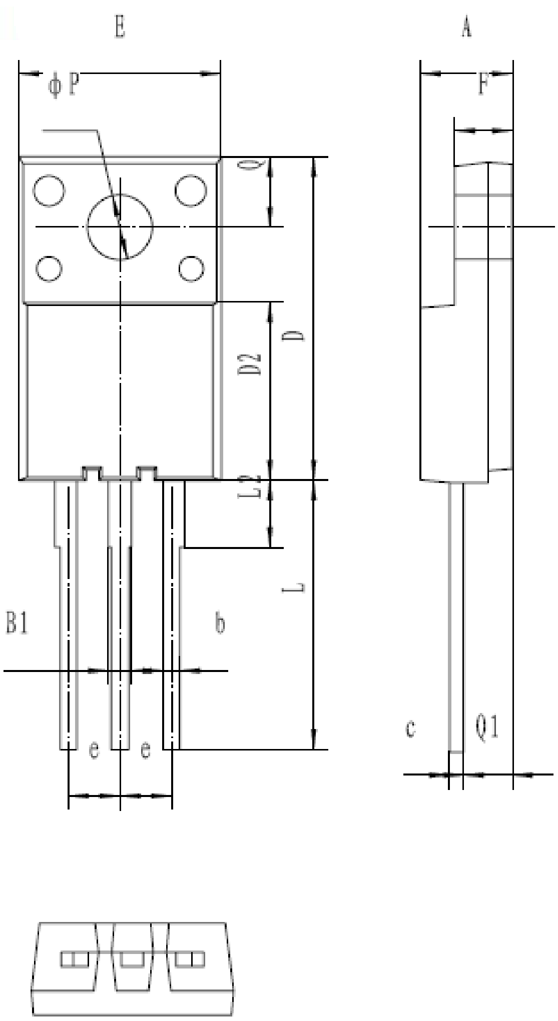


符号 symbol	MIN	MAX
A	4.30	4.70
B	1.22	1.40
b	0.70	0.95
c	0.40	0.65
D	15.20	16.20
D2	9.00	9.40
E	9.70	10.10
e	2.39	2.69
F	1.25	1.40
L	12.60	13.60
L2	2.80	3.20
Q	2.60	3.00
Q1	2.20	2.60
P	3.50	3.80



外形尺寸 PACKAGE MECHANICAL DATA

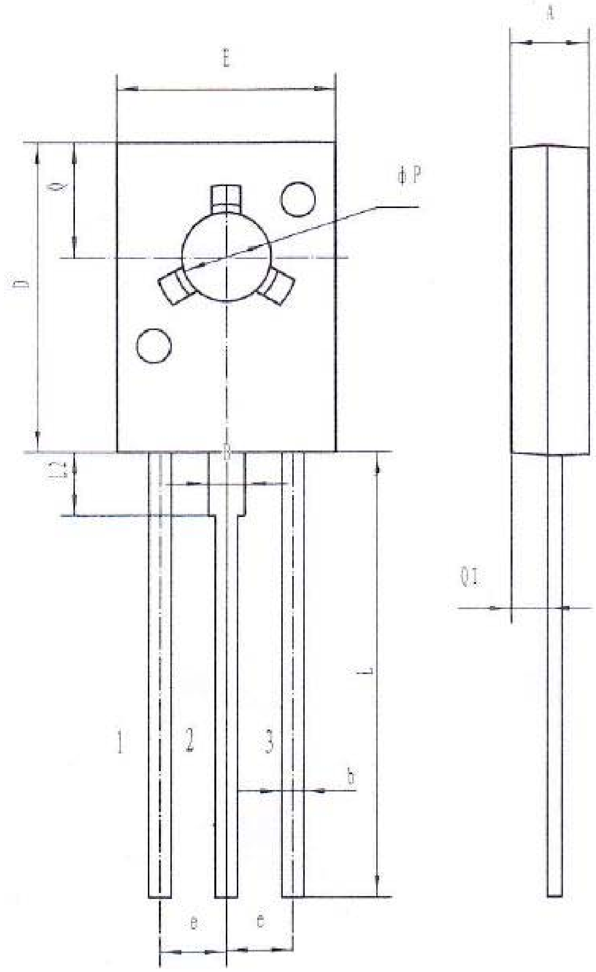
TO-220HF 单位 **Unit ：mm**



符号 symbol	MIN	MAX
A	4.0	5.0
B1	0.87	1.27
b	0.72	0.92
c	0.5	0.7
D	15.0	16.5
D2	7.8	9.4
E	9.62	10.62
e	2.54 TYP	
F	2.3	3.3
L	13.0	14.0
L2	3.1	3.5
ΦP	3.0	3.4
Q	3.15	3.55
Q1	2.2	2.5

外形尺寸 PACKAGE MECHANICAL DATA

TO-126 单位 **Unit ： mm**

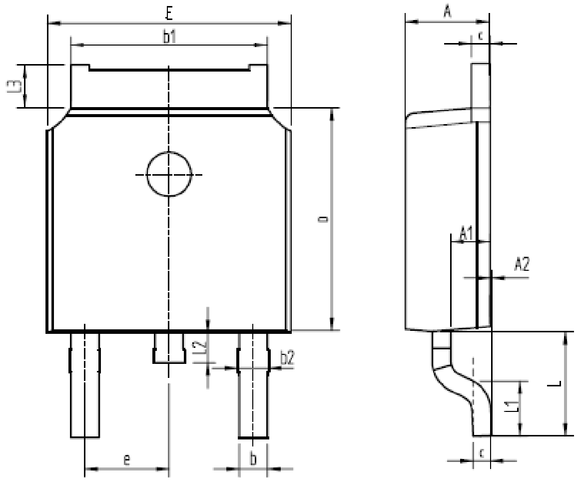


符号 symbol	MIN	MAX
A	2.50	5.90
B	1.22	1.47
b	0.60	0.90
c	0.30	0.70
D	10.50	11.10
E	7.10	8.10
e	2.19	2.39
L	15.30	15.70
L2	2.10	2.30
Q	3.80	4.20
Q1	1.07	1.47
P	3.00	3.20

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