



BT151

主要参数 MAIN CHARACTERISTICS

$I_{T(AV)}$	7.5A
V_{DRM}/V_{RRM}	500V
I_{GT}	1-15mA

用途

- 半交流开关
- 相位控制

APPLICATIONS

- Half AC switching
- Phase control

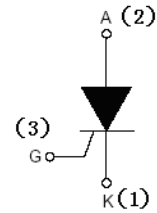
产品特性

- 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

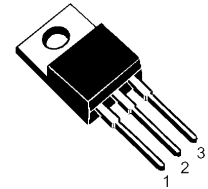
FEATURES

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

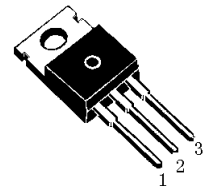
封装 Package



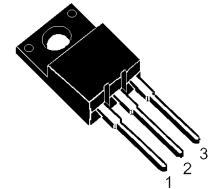
序号 Pin	引线名称 Description
1	阴极 K
2	阳极 A
3	门极 G



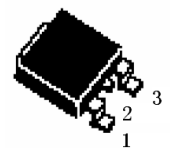
TO-220



TO-220C



TO-220HF



DPAK

订货信息 ORDER MESSAGE

订货型号 Order codes	印 记 Marking	无卤素 Halogen Free	封 装 Package	包 装 Packaging
BT151-O-Z-N-C	BT151	含卤	TO-220	袋装 Bag
BT151-O-C-N-B	BT151	含卤	TO-220C	条管 Tube
BT151-O-HF-N-B	BT151	含卤	TO-220HF	条管 Tube
BT151-O-U-B-A	BT151	含卤	DPAK	编带 Tape



**绝对最大额定值 ABSOLUTE RATINGS (T_c=25°C)**

项 目 Parameter	符 号 Symbol	数 值 Value	单 位 Unit
断态重复峰值电压 Repetitive peak off-state voltage	V _{DRM}	500	V
反向重复峰值电压 Repetitive peak reverse voltage	V _{RPM}	500	V
通态平均电流 Average on-state current (half sine wave)	I _{T(AV)}	7.5	A
通态方均根电流 On-state RMS current (all conduction angles)	I _{T(RMS)}	12	A
非重复浪涌峰值通态电流 Non- repetitive surge peak on-state current (half sine wave ,t=10ms)	I _{TSM}	110	A
I ² t for fusing (t=10ms)	I ² t	60	A ² s
门极峰值电流 Peak gate current	I _{GM}	2	A
门极峰值电压 Peak gate voltage	V _{GM}	5	V
反向门极峰值电压 Peak reverses gate voltage	V _{RGM}	5	V
门极峰值功率 Peak gate power	P _{GM}	5	W
门极平均功率 Average gate power (over any 20ms period)	P _{G(AV)}	0.5	W
存储温度 Storage temperature	T _{stg}	-40~150	°C
操作结温 Operation junction temperature	T _J	125	°C

静态特性 STATIC CHARACTERISTICS (T_c=25°C unless otherwise stated)

项 目 Parameter	符号 Symbol	测试条件 Tests conditions	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 _{DRM}	V _{DM} = V _{DRM(MAX)} , T _j =125°C	-	-	1.0	mA
反向峰值重复电流 Peak Repetitive Reverse Current	I _{RPM}	V _{RM} = V _{RPM(MAX)} , T _j =125°C	-	-	1.0	mA
峰值通态电压 Peak on-state voltage	V _{TM}	I _{TM} =23A	-	1.40	1.75	V
门极触发电流 Gate trigger current	I _{GT}	V _{DM} =12V, I _T =0.1A	1	4	15	mA
门极触发电压 Gate trigger voltage	V _{GT}	V _{DM} =12V, I _T =0.1A	-	0.8	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	-	-	40	mA

动态特性 DYNAMIC CHARACTERISTICS (T_c=25°C unless otherwise stated)

项 目 Parameter	符号 Symbol	测试条件 Tests conditions	最小 min	典型 typ	最大 max	单位 Unit
断态临界电压上升率 Critical rate of rise of off- state voltage	dV/dt	V _{DM} =67% V _{DRM(MAX)} , T _j =125°C	100	-	-	V/μs

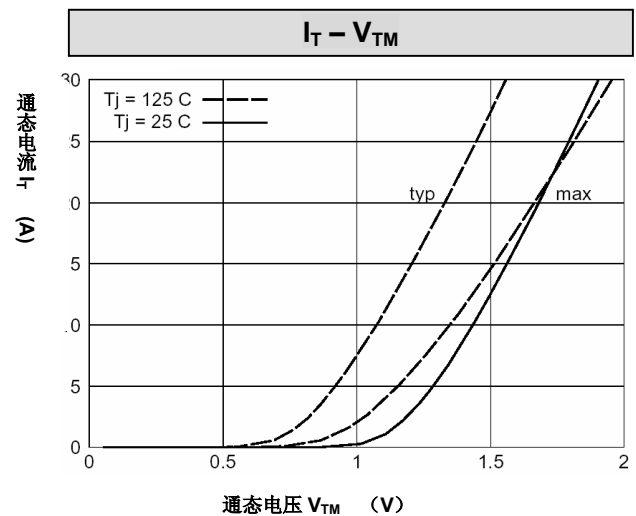
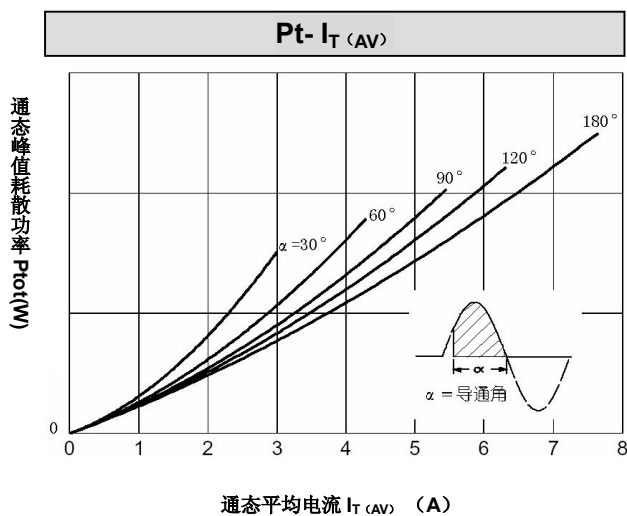


**热特性 THERMAL CHARACTERISTIC**

项 目 Parameter	符 号 Symbol	值 value	单 位 Unit
结到管壳的热阻 Thermal resistance junction to case	TO-220(C)	$R_{th(j-c)}$	1.3 max
	DPAK	$R_{th(j-c)}$	1.8 max
结到散热片的热阻 Thermal resistance junction to heatsink	TO-220HF	$R_{th(j-hs)}$	4.5 max
结到环境的热阻 Thermal resistance junction to ambient (half cycle)		$R_{th(j-a)}$	60 typ

电绝缘特性 ELECTRICAL ISOLATION

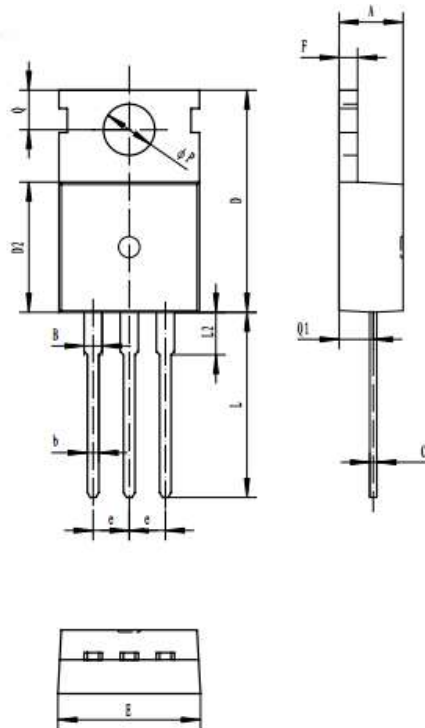
项 目 Parameter	符号 Symbol	测试条件 Tests conditions	数值 Value	单位 Unit
绝缘电压 Isolation voltage	V_{ISOL}	1 minute, leads to mounting tab TO-220HF	2000	V

特征曲线 ELECTRICAL CHARACTERISTICS (curves)



外形尺寸 PACKAGE MECHANICAL DATA
TO-220C

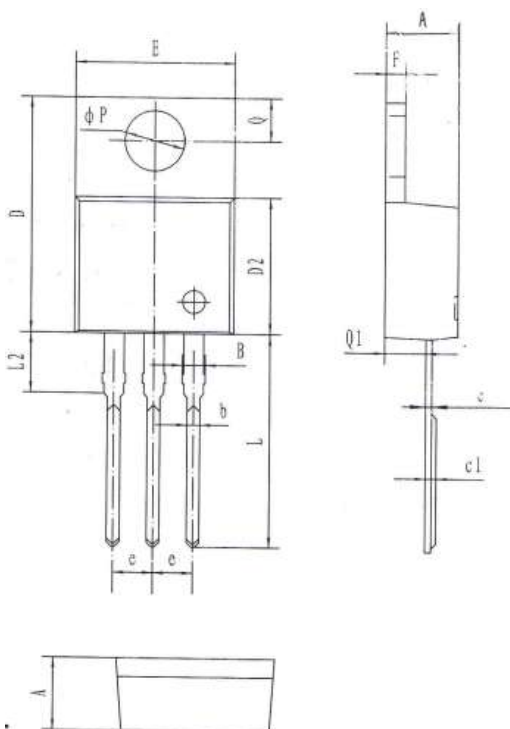
单位 Unit : mm



A	4.30-4.70
B	1.22-1.40
b	0.70-0.95
c	0.40-0.65
D	15.2-16.2
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

TO-220

单位 Unit : mm



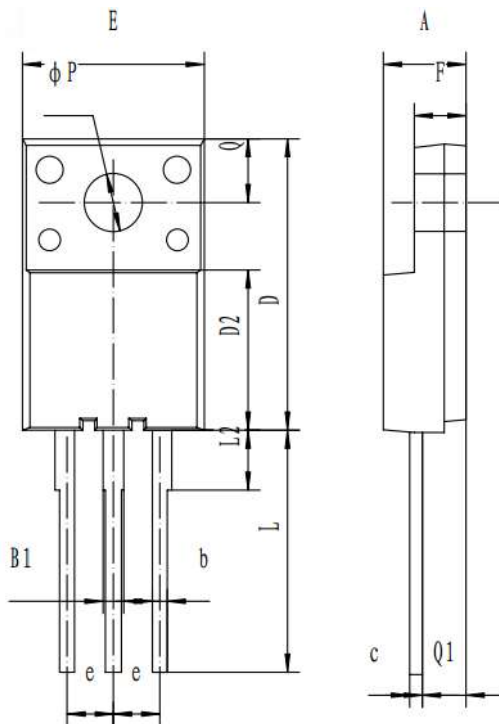
A	4.40-4.80
B	1.10-1.40
b	0.70-0.95
c	0.28-0.48
c1	0.32-0.52
D	14.45-16.00
D2	8.20-9.20
E	9.60-10.40
e	2.39-2.69
F	1.20-1.35
L	13.05-14.05
L2	3.70-3.90
Q	2.40-3.00
Q1	2.20-2.90
P	3.50-4.00





TO-220HF

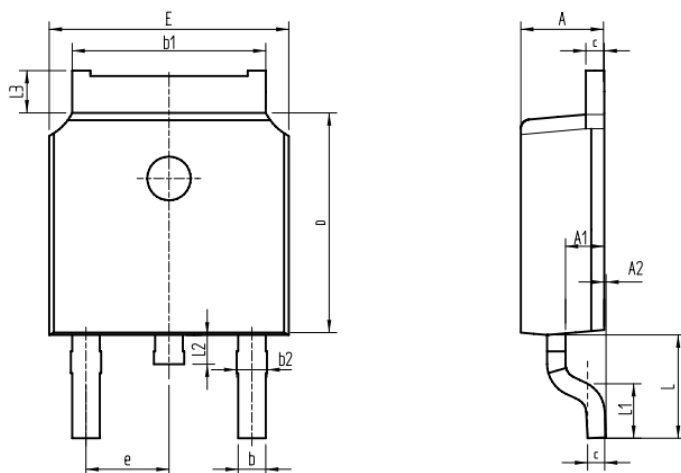
单位 Unit : mm



A	4.00-5.00
B1	0.87-1.27
b	0.72-0.92
c	0.50-0.70
D	15.00-16.50
D2	7.80-9.40
E	9.62-10.62
e	2.54 TYP
F	2.30-3.30
L	13.00-14.00
L2	3.10-3.50
Q	3.15-3.55
Q1	2.20-2.50
P	3.00-3.40

DPAK

单位 Unit : mm



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	2.286 BSC
L	2.50-3.30
L1	1.20-1.80
L2	0.60-1.00
L3	0.85-1.30



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3. Please do not exceed the absolute maximum ratings of the device when circuit designing.
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附录 (Appendix)：修订记录 (Revision History)

日期 Date	旧版本 Last Rev.	新版本 New Rev.	修订内容 Description of Changes
2010-5-4	200911D	201005E	增加 TO-220HF 封装形式
2010-11-25	201005E	201011F	增加 TO-220C 封装形式
2011-9-1	201011F	201109G	增加 DPAK 封装形式
2015-10-22	201109G	201510H	修正外形尺寸、排版



