

描述 / Descriptions

TO-220F 塑封封装 双向可控硅。Triac in a TO-220F Plastic Package.

特征 / Features

低控制极触发电流。

Low gate triggering current.

用途 / Applications

用于需要高灵敏度触发的场合。

General purpose applications where gate high sensitivity required.

内部等效电路 / Equivalent Circuit**引脚排列 / Pinning**

PIN1 : Main Terminal 1 PIN 2 : Main Terminal 2 PIN 3: Gate

放大及印章代码 / h_{FE} Classifications & Marking

见印章说明。See Marking Instructions.

极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Repetitive peak off-state voltages(T _J =110°C)	V _{DRM} /V _{RRM}	600	V
RMS on-state current(T _C =90°C)	I _{T(RMS)}	4.0	A
Non-repetitive peak on-state current	I _{TSM(t=8.3ms)}	42	A
Non-repetitive peak on-state current	I _{TSM(t=10ms)}	40	A
I ² _t for fusing	I ² _{t(t=10ms)}	8.0	A ² s
Repetitive rate of rise of on-state current after triggering (Repetitive F=50Hz)	di/dt	10	A/μs
Repetitive rate of rise of on-state current after triggering (Non repetitive)		50	
Junction Temperature	T _J	-40~110	°C
Storage Temperature Range	T _{stg}	-40~150	°C
Junction to ambient	R _{th(j-a)}	60	°C/W
Junction to case for DC	R _{th(j-c)}	4.4	°C/W
Junction to case for DC(AC F=50Hz)		3.3	°C/W

电性能参数 / Electrical Characteristics(Ta=25°C)

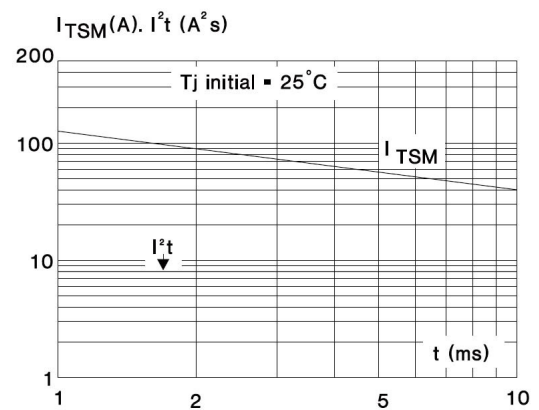
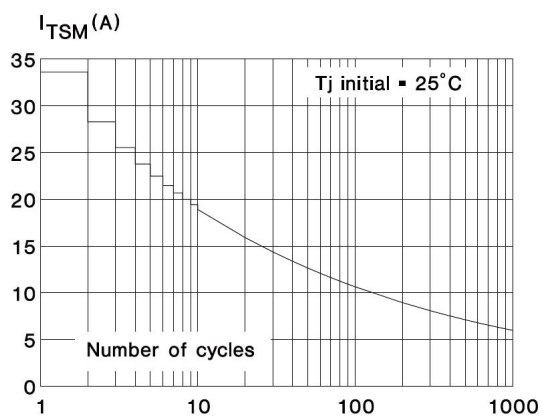
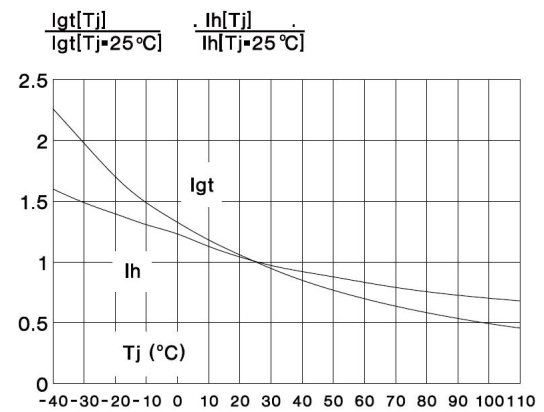
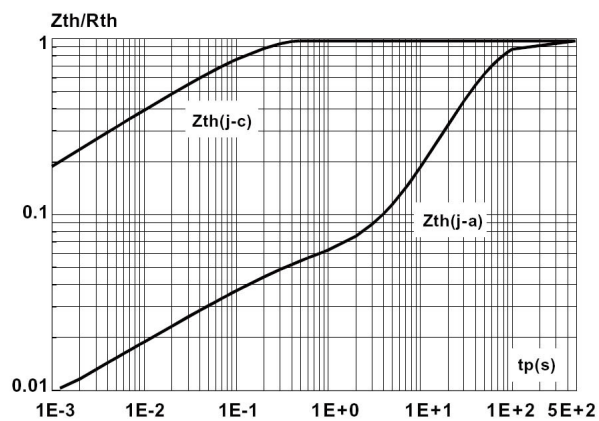
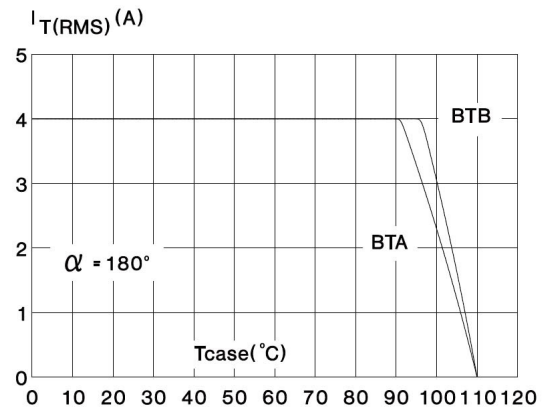
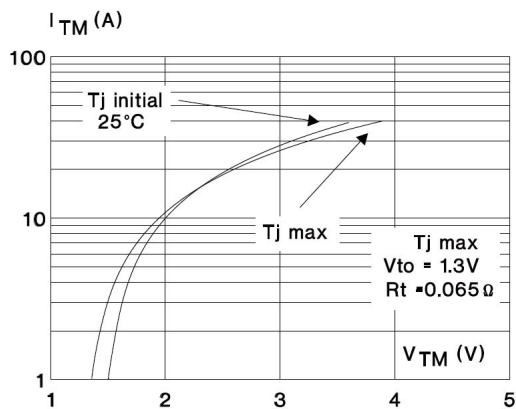
符号 Symbol	测试条件 Test Conditions	信号区 Quadrant		BTA04F				单位 Unit
				T	D	S	A	
I _{GT}	V _D =12V R _L =33Ω T _J =25℃	I-II-III	Max.	5.0	5.0	10	10	mA
		IV	Max.	5.0	10	10	25	
V _{GT}	V _D =12V R _L =33Ω T _J =25℃	I-II-III	Max.	1.5				V
		IV	Max.	1.75				
V _{GD}	V _D =V _{DRM} R _L =3.3KΩ T _J =110℃	I-II-III-IV	Min.	0.2				V
t _{gt}	V _D =V _{DRM} I _G =40mA Dig/dt=0.5A/μs T _J =25℃	I-II-III-IV	Typ.	2.0				μs
I _L	I _G =1.2I _{GT} T _J =25℃	I-III-IV	Typ.	10	10	20	20	mA
		II		20	20	40	40	
I _H [*]	I _T =100mA Gate open T _J =25℃		Max.	15	15	25	25	mA
V _{TM} [*]	I _{TM} =5.5A tp=380μs T _J =25℃		Max.	1.65				V
I _{DRM}	V _{DRM} rated T _J =25℃		Max.	0.01				mA
I _{RRM}	V _{RRM} rated T _J =110℃		Max.	0.75				mA
(dV/dt) [*]	Linear slope up to V _D =67% V _{DRM} gate open T _J =110℃		Typ.	10	10	-	-	V/μs
			Min.	-	-	10	10	
(dI/dt)c [*]	(Di/dt)c=1.8A/ms T _J =110℃		Typ.	1.0	1.0	5.0	5.0	A/μs

*For either polarity of electrode T₂ voltage with reference to electrode T₁

GATE CHARACTERISTICS (maximum values)

P_{G(AV)}=1W P_{GM}=40W(tp=20μs) I_{GM}=4A(tp=20μs) V_{GM}=16V(tp=20μs)

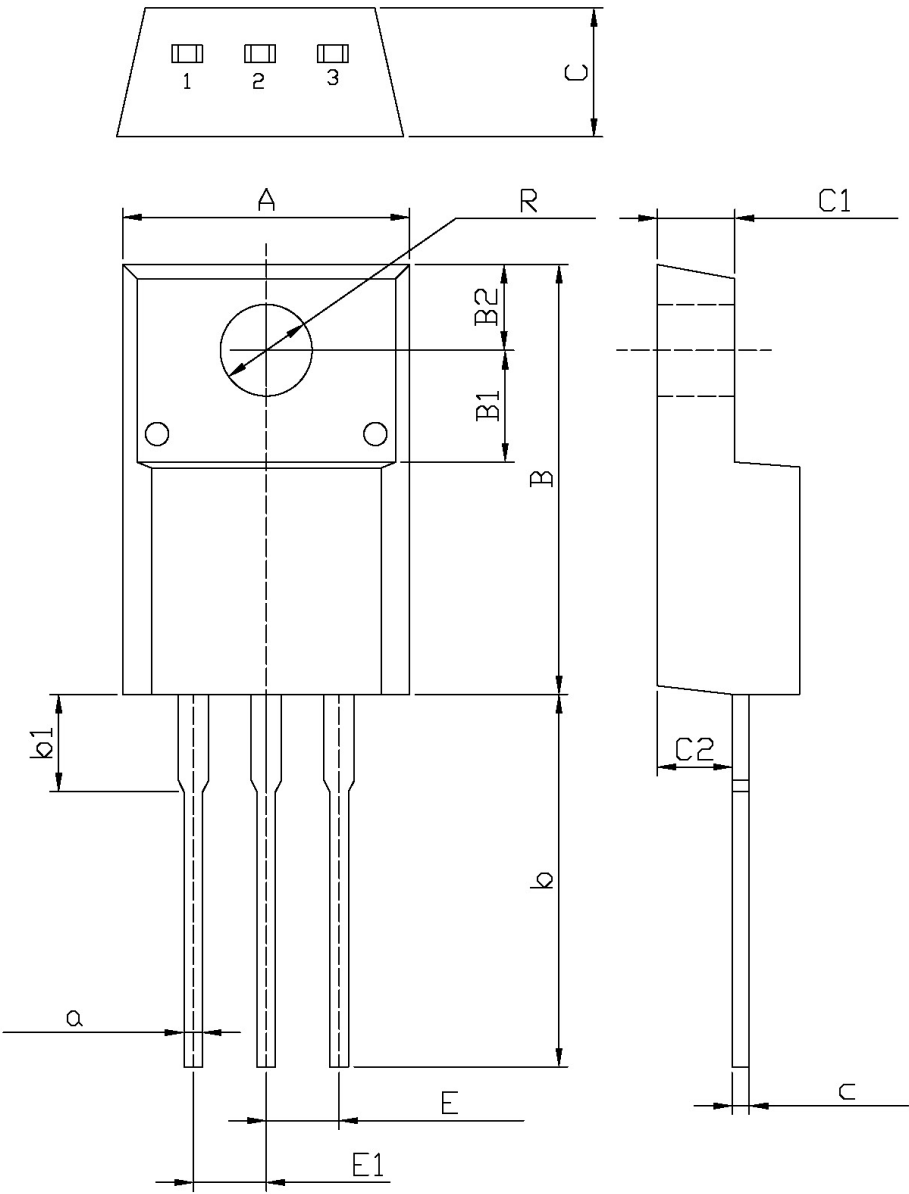
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

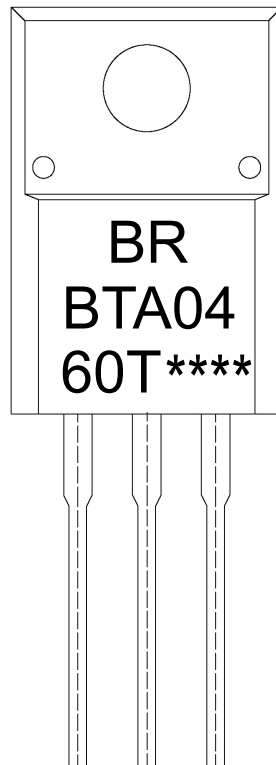
T□-220F

单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
C	4.3	4.7	b1	2.9	3.9
A	9.7	10.3	a	0.55	0.75
B	14.7	15.3	E	2.29	2.79
B1	3.8	4.0	E1	2.29	2.79
B2	2.9	3.1	C1	2.5	2.9
R	3.0	3.4	C2	2.5	2.7
b	12.5	13.5	c	0.5	0.7

印章说明 / Marking Instructions



说明：

BR：为公司代码

BTA04：为产品型号

60T：为 V_{RRM} 、 I_{GT} 分档代码

****：为生产批号代码，随生产批号变化。

Note:

BR: Company Code

BTA04: Product Type.

60T: V_{RRM} 、 I_{GT} Bracket code

****: Lot No. Code, code change with Lot No.

波峰焊温度曲线图(无铅) / Temperature Profile for Dip Soldering(Pb-Free)



说明：

- 1、预热温度 25 ~ 150°C，时间 60 ~ 90sec;
- 2、峰值温度 255±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2 ~ 10°C/sec.

Note:

- 1.Preheating:25~150°C, Time:60~90sec.
- 2.Peak Temp.:255±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：270±5°C

时间：10±1 sec.

Temp.:270±5°C

Time:10±1 sec

包装规格 / Packaging SPEC.

散件包装 / BULK

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Bag 只/袋	Bags/Inner Box 袋/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Bag 袋	Inner Box 盒	Outer Box 箱
TO-220/F	200	10	2,000	5	10,000	135×190	237×172×102	560×245×195

套管包装 / TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Tube 只/套管	Tubes/Inner Box 套管/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Tube 套管	Inner Box 盒	Outer Box 箱
TO-220/F	50	20	1,000	5	5,000	532×31.4×5.5	555×164×50	575×290×180

使用说明 / Notices