



GENERAL DESCRIPTION

BTA16/BTB16 双向可控硅采用穿通隔离台面结构，复合玻璃钝化 PN 结表面保护工艺技术，dv/dt 高，可靠性高，适用于控温、调光、马达控制。

BTA16/BTB16 Triacs is fabricated using separation diffusion processes ,the junction termination areas are passivated with glass. Thanks to highly dv/dt and reliability,the Triacs series is suitable for domestic lighting ,heating and motor speed controllers.

MAIN CHARACTERISTICS

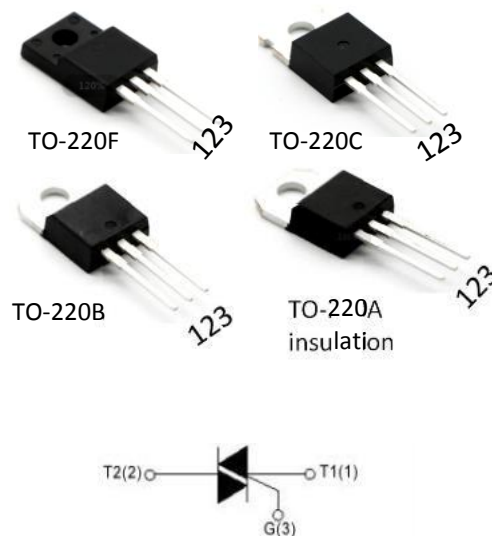
参数	数值	单位
Parameter	Value	Unit
$I_{T(RMS)}$	16	A
V_{DRM}/V_{RRM}	600&800	V
I_{GT}	≤ 50	mA

产品特性

- dv/dt 高
- 通态压降低
- Rohs 环保产品

FEATURES

- Highly dv/dt
- Low on-state voltage
- Rohs Products



应用领域 APPLICATIONS

主要应用于调光、控温、马达控制。

domestic lighting ,heating and motor speed controllers.

极限值(除非另有规定, $T_j=25^{\circ}\text{C}$) ABSOLUTE RATINGS

($T_j=25^{\circ}\text{C}$, unless otherwise specified)

符号 Symbol	参数 Parameter		数值 Value	单位 Unit
$I_{T(RMS)}$	RMS 通态电流 RMS on-state current (full sine wave)	$T_c=86^{\circ}\text{C}$	16	A
I_{TSM}	通态峰值浪涌电流 Non repetitive surge peak on-state current	$F=50\text{Hz}, t=20\text{ms}$	160	A
I^2t	I^2t 耗散值 I^2t value for fusing	$T_P=10\text{ms}$	144	A^2s
di/dt	通态电流上升值 Critical rate of rise of on-state current	$F=120\text{Hz}, T_j=125^{\circ}\text{C}$	50	$\text{A}/\mu\text{s}$
I_{GM}	门极峰值电流 Peak gate current	$T_P=20\mu\text{s}, T_j=125^{\circ}\text{C}$	4	A
$P_{G(AV)}$	平均门极耗散功率 Average gate power dissipation	$T_j=125^{\circ}\text{C}$	1	W
T_{stg}	贮存结温范围 Storage junction temperature range		-40-+150	$^{\circ}\text{C}$
T_j	工作结温范围 Operating junction temperature range		-40-+125	$^{\circ}\text{C}$

电参数(除非另有规定, $T_j=25^{\circ}\text{C}$) ELECTRICAL CHARACTERISTICS

($T_j=25^{\circ}\text{C}$, unless otherwise specified)

3 quadrants

参数 Parameter	符号 Symbol		规范值 Value			单位 Unit	测试条件 Test Conditions
			SW	CW	BW		
触发电流 Gate trigger current	I_{GT}	I ~ III	≤ 10	≤ 35	≤ 50	mA	$V_D=12\text{V}, I_T=0.1\text{A}$
触发电压 Gate trigger voltage	V_{GT}	I ~ III	≤ 1.5			V	$V_D=12\text{V}, I_T=0.1\text{A}$
维持电流 Holding current	I_H		≤ 15	≤ 45	≤ 60	mA	$V_D=12\text{V}, I_T=0.1\text{A}$
擎住电流 Latching current	I_L		≤ 25	≤ 60	≤ 80	mA	$V^D=12\text{V}, I^T_A=0.1$
电压上升率 Rise of off- state voltage	dv/dt		≥ 40	≥ 500	≥ 1000	$\text{V}/\mu\text{s}$	$V_D=67\%V_{DRM}$
通态压降 Peak on-state voltage	V_{TM}		≤ 1.65			V	$I_T=22\text{A}$
断态漏电流 Peak repetitive forward blocking current	I_{DRM}		≤ 5			μA	$V_{RRM}=V_{DRM}, T_j=25^{\circ}\text{C}$
	I_{RRM}		≤ 2			mA	$V_{RRM}=V_{DRM}, T_j=125^{\circ}\text{C}$



4 quadrants

参数 Parameter	符号 Symbol	规范值 Value		单位 Unit	测试条件 Test Conditions
		C	B		
触发电流 Gate trigger current	I _{GT}	I ~ III	≤25	mA	V _D =12V, I _T =0.1A
		IV	≤50		
触发电压 Gate trigger voltage	V _{GT}	I ~ III	≤1.5	V	V _D =12V, I _T =0.1A
		IV			
维持电流 Holding current	I _H		≤25	mA	V _D =12V, I _T =0.1A
擎住电流 Latching current	I _L	I-III-IV	≤40		
		II	≤80	mA	V _D =12V, I _T =0.1A
电压上升率 Rise of off- state voltage	dv/dt		≥200	V/μS	V _D =67%V _{DRM}
通态压降 Peak on-state voltage	V _{TM}		≤1.6		
断态漏电流 Peak repetitive forward blocking current	I _{DRM} I _{RRM}	≤5		μA	V _{RRM} =V _{DRM} , T _j = 25°C
		≤1		mA	V _{RRM} =V _{DRM} , T _j = 125°C

热特性 THERMAL RESISTANCES

符号 Symbol	参数 Parameter		数值 Value	单位 Unit
R _{th(j-c)}	Junction to case(AC)	TO-220B	1.2	°C/W
		TO-220A Insulated	2.1	
R _{th(j-a)}	Junction to ambient	TO-220B	60	°C/W
		TO-220A Insulated	60	

特征曲线 ELECTRICAL CHARACTERISTICS (CURVES)

图 1 最大耗散功率与 RMS 通态电流关系

Fig.1.Maximum Power Dissipation Versus on-state current

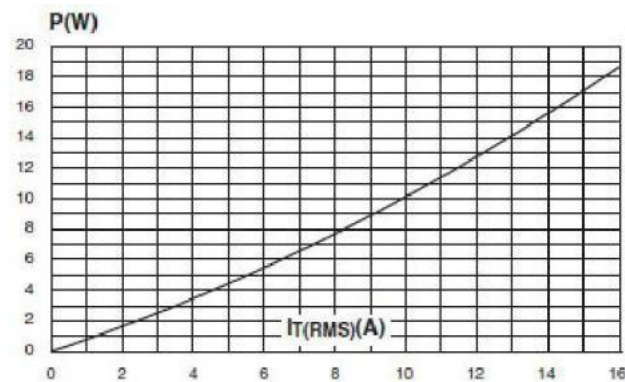


图 3 通态特性

Fig.3.On-State Characteristics

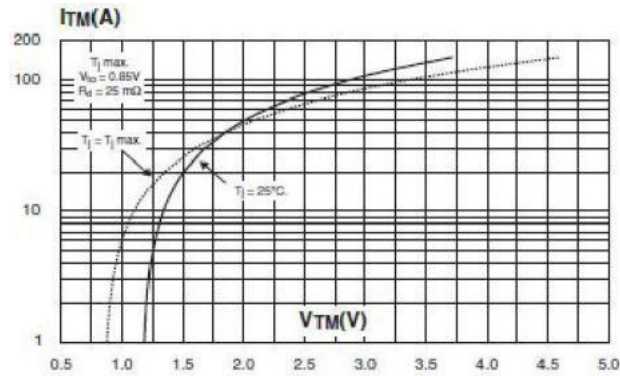


图 2 RMS 通态电流与 Tc 温度关系

Fig.2. RMS On-state Current Versus TL

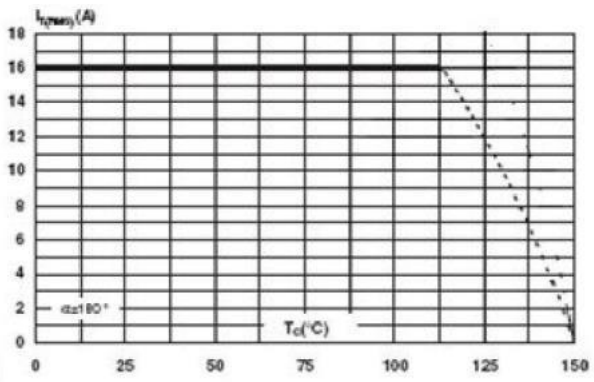
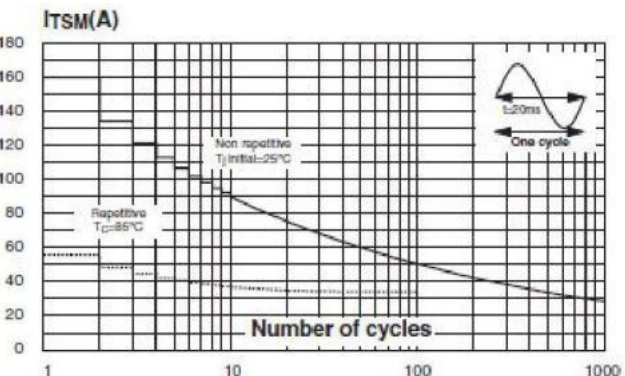
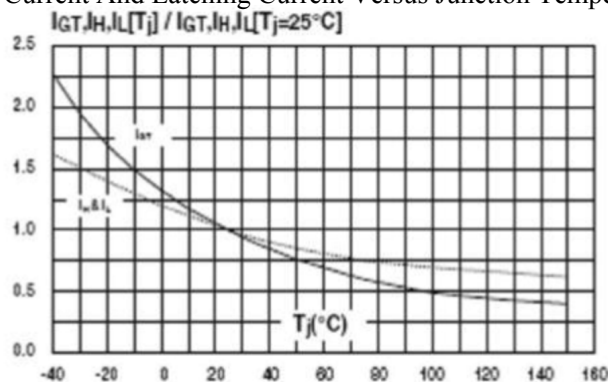


图 4 通态浪涌峰值电流与周期数关系

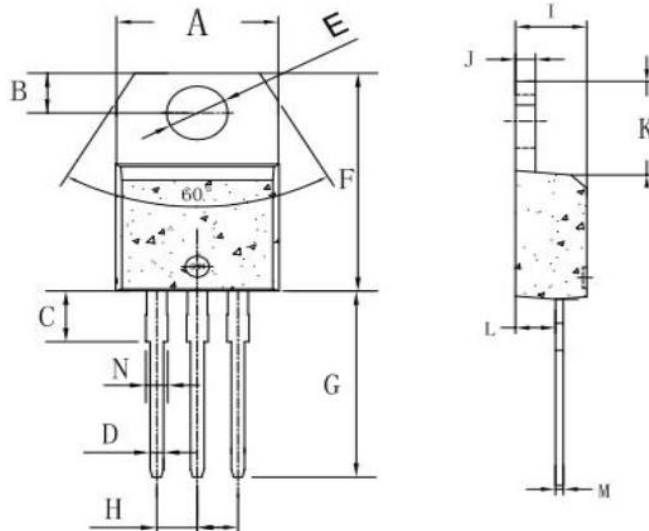
Fig.4.Surge Peak On-state Current Versus Number Cycles


 图 5 I_{GT}、I_H、I_L 相对值（相对于 25°C）与结温关系 Fig.5.Relative Variation Of Gate Trigger Current , Holding Current And Latching Current Versus Junction Temperature (Typical Value)




PACKAGE OUTLINE DIMENSIONS

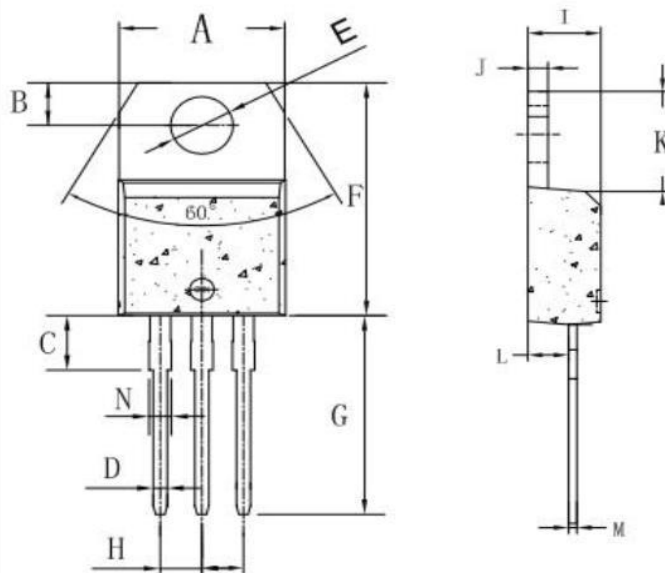
TO-220A



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	9.8	10.4	0.385	0.409
B	2.65	3.1	0.104	0.122
C	2.8	4.2	0.110	0.165
D	0.7	0.92	0.027	0.036
E	3.75	3.95	0.147	0.155
F	14.8	16.1	0.582	0.633
G	13.05	13.6	0.513	0.535
H	2.4	2.7	0.094	0.106
I	4.38	4.61	0.172	0.181
J	1.15	1.36	0.045	0.053
K	5.85	6.82	0.230	0.268
L	2.35	2.75	0.092	0.108
M	0.35	0.65	0.013	0.025
N	1.18	1.42	0.046	0.055

PACKAGE OUTLINE DIMENSIONS

TO-220B

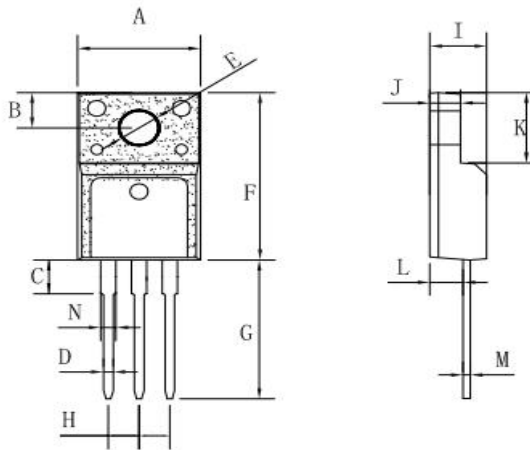


DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	9.8	10.4	0.385	0.409
B	2.65	3.1	0.104	0.122
C	2.8	4.2	0.110	0.165
D	0.7	0.92	0.027	0.036
E	3.75	3.95	0.147	0.155
F	14.8	16.1	0.582	0.633
G	13.05	13.6	0.513	0.535
H	2.4	2.7	0.094	0.106
I	4.38	4.61	0.172	0.181
J	1.15	1.36	0.045	0.053
K	5.85	6.82	0.230	0.268
L	2.35	2.75	0.092	0.108
M	0.35	0.65	0.013	0.025
N	1.18	1.42	0.046	0.055



PACKAGE OUTLINE DIMENSIONS

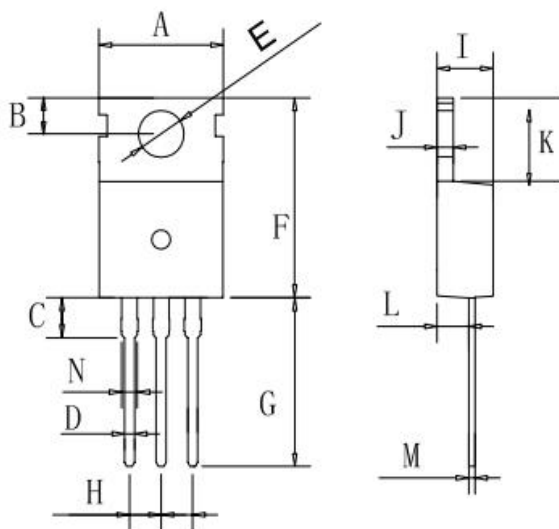
TO-220F



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	9.6	10.5	0.377	0.413
B	3.15	3.65	0.124	0.143
C	2.95	3.5	0.116	0.137
D	0.7	0.92	0.027	0.036
E	3	3.4	0.118	0.133
F	15.3	16.5	0.602	0.649
G	12.85	13.45	0.505	0.529
H	2.4	2.7	0.094	0.106
I	4.15	5.12	0.163	0.201
J	2.28	2.65	0.089	0.104
K	6.12	6.95	0.240	0.273
L	2.45	2.9	0.096	0.114
M	0.5	0.6	0.019	0.023
N	1.18	1.42	0.046	0.055

PACKAGE OUTLINE DIMENSIONS

TO-220C



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	9.7	10.4	0.381	0.409
B	2.65	3.1	0.104	0.122
C	2.8	3.42	0.110	0.134
D	0.7	0.92	0.027	0.036
E	3.55	3.78	0.139	0.148
F	15.35	15.82	0.604	0.622
G	12.95	13.46	0.509	0.529
H	2.4	2.7	0.094	0.106
I	4.38	4.71	0.172	0.185
J	1.22	1.42	0.048	0.055
K	6.13	6.82	0.241	0.268
L	2.35	2.75	0.092	0.108
M	0.38	0.65	0.014	0.025
N	1.18	1.42	0.046	0.055