

BRBTA08FA

Rev.F Feb.-2019

/ Revised record

			原型号 BTA08F 更改型号为 BRBTA08FA		

/ Descriptions

Triac in a TO-220F Plastic Package.

/ Features

Medium current triac, Low on state voltage drop, High reliability and stability, Low thermal resistance, insulated BTA.

/ Applications

Suitable for general purpose AC switching .Such as static relays, heating regulation, induction motor starting circuits, motor speed controllers, etc.

/ Equivalent Circuit



/ Pinning



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

/ h_{FE} Classifications & Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Repetitive peak off-state voltages	V_{DRM}/V_{RRM}	600 and 800	V
RMS on-state current(full sine wave $T_C=105^{\circ}\text{C}$)	$I_{T(RMS)}$	8.0	A
Non repetitive surge peak on-state current(full cycle, T_i initial= 25°C)	$I_{TSM}(F=50\text{Hz}$ $t=20\text{ms})$	80	A
Non repetitive surge peak on-state current(full cycle, T_i initial= 25°C)	$I_{TSM}(F=60\text{Hz}$ $t=16.7\text{ms})$	84	A
I_t^2 Value for fusing	$I_t^2 t_{(tp=10\text{ms})}$	36	A^2s
Critical rate of rise of on-state current I_G $=2 \times I_{GT} t_r \leq 100 \text{ ns}$ ($F=120\text{Hz}$ $T_j=125^{\circ}\text{C}$)	di/dt	50	$\text{A}/\mu\text{s}$
Peak gate current($t_p=20\mu\text{s}$ $T_j=125^{\circ}\text{C}$)	I_{GM}	4.0	A
Average gate power dissipation($T_j=125^{\circ}\text{C}$)	$P_{G(AV)}$	1.0	W
Operating junction temperature range	T_j	$-40 \sim 125$	$^{\circ}\text{C}$
Storage junction temperature range	T_{stg}	$-40 \sim 150$	$^{\circ}\text{C}$
Junction to ambient	$R_{th(j-a)}$	60	$^{\circ}\text{C}/\text{W}$
Junction to case (AC)	$R_{th(j-c)}$	2.5	$^{\circ}\text{C}/\text{W}$

/ Electrical Characteristics(Ta=25)

3 / Snubberless and logic level 3 quadrants)

Symbol	Test Conditions	Quadrant		BTA08F				Unit
				TW	SW	CW	BW	
$I_{GT}^{(1)}$	$V_D=12\text{V}$ $R_L=30\Omega$	I-II-III	Max.	5	10	35	50	mA
V_{GT}	$V_D=12\text{V}$ $R_L=30\Omega$	I-II-III	Max.	1.3				V
V_{GD}	$V_D=V_{DRM}$ $R_L=3.3\text{K}\Omega$ $T_j=125^{\circ}\text{C}$	I-II-III	Min.	0.2				V
$I_H^{(2)}$	$I_T=100\text{mA}$		Max.	10	15	35	50	mA
I_L	$I_G=1.2I_{GT}$	I-III	Max.	10	25	50	70	mA
		II		15	30	60	80	
$(dV/dt)^{(2)}$	$V_D=67\%$ V_{DRM} gate open $T_j=125^{\circ}\text{C}$		Min.	20	40	400	1000	$\text{V}/\mu\text{s}$
$(di/dt)^{(2)}$	$(dV/dt)_c=0.1\text{V}/\mu\text{s}$ $T_j=125^{\circ}\text{C}$		Min.	3.5	5.4	-	-	A/m s
	$(dV/dt)_c=10\text{V}/\mu\text{s}$ $T_j=125^{\circ}\text{C}$		Min.	1.5	2.98	-	-	
	Without snubber $T_j=125^{\circ}\text{C}$		Min.	-	-	4.5	7	

Note 1: minimum I_{GT} is guaranteed at 5% of I_{GT} max.

Note 2: for both polarities of A2 referenced to A1.

/ Electrical Characteristics(Ta=25)

4 / Standard 4 quadrants)

Symbol	Test Conditions	Quadrant		BTA08F		Unit
				C	B	
$I_{GT}^{(1)}$	$V_D=12V$ $R_L=30\Omega$	I-II-III IV	Max.	25 50	50 100	mA
V_{GT}	$V_D=12V$ $R_L=30\Omega$	ALL	Max.	1.3		V
V_{GD}	$V_D=V_{DRM}$ $R_L=3.3K\Omega$ $T_j=125^\circ C$	ALL	Min.	0.2		V
$I_H^{(2)}$	$I_T=500mA$		Max.	25	50	mA
I_L	$I_G=1.2I_{GT}$	I-III- IV	Max.	40	50	mA
		II		80	100	
$(dV/dt)^{(2)}$	$V_D=67\%$ V_{DRM} gate open $T_j=125^\circ C$		Min.	200	400	V/ μs
$(dV/dt)_c^{(2)}$	$(dI/dt)_c=5.3A/ms$ $T_j=125^\circ C$		Min.	5.0	10	

Note 1: minimum I_{GT} is guaranteed at 5% of I_{GT} max.

Note 2: for both polarities of A2 referenced to A1.

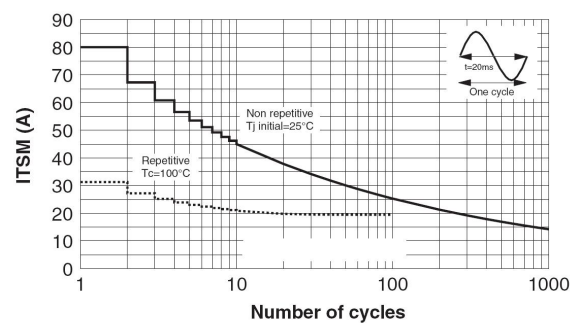
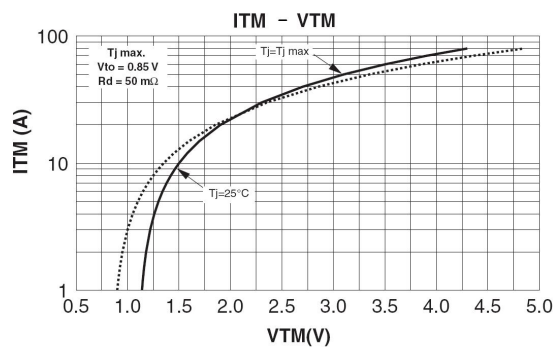
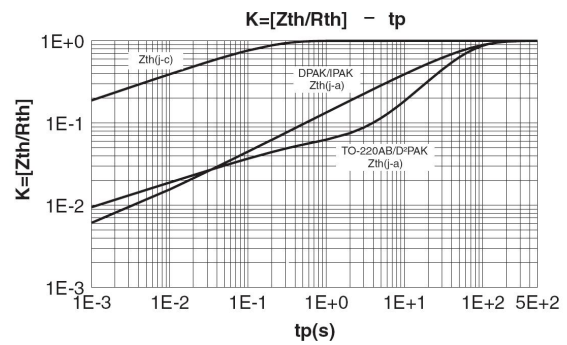
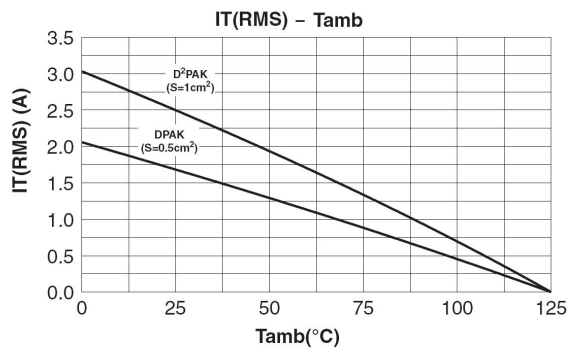
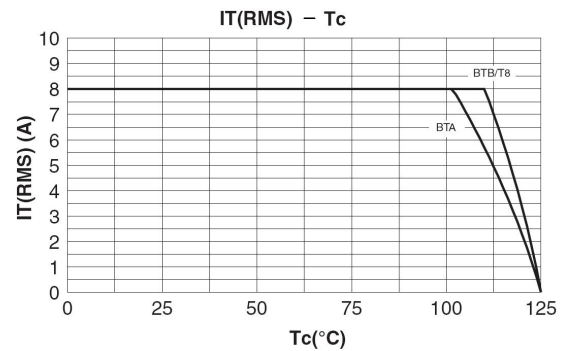
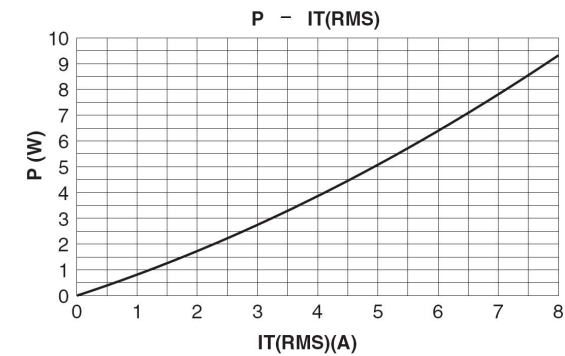
/ Electrical Characteristics(Ta=25)

Symbol	Test Conditions			Value	Unit
$V_{TM}^{(2)}$	$I_{TM}=11A$ $t_p=380\mu s$ $T_j=25^\circ C$		Max.	1.55	V
$V_{to}^{(2)}$	Threshold voltage $T_j=125^\circ C$		Max.	0.85	V
$R_d^{(2)}$	Dynamic resistance $T_j=125^\circ C$		Max.	50	m Ω
I_{DRM} I_{RRM}	$V_{DRM} = V_{RRM}$	$T_j=25^\circ C$	Max.	5.0	μA
		$T_j=125^\circ C$	Max.	1.0	mA

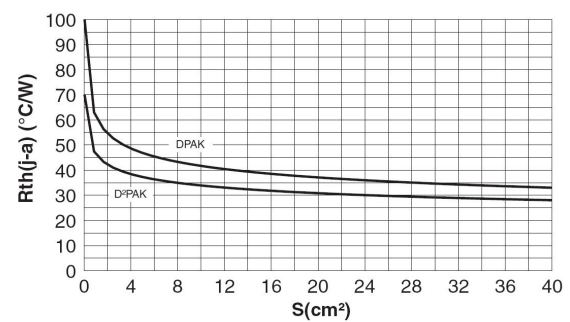
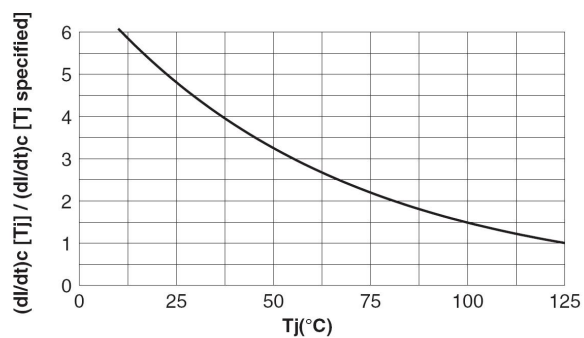
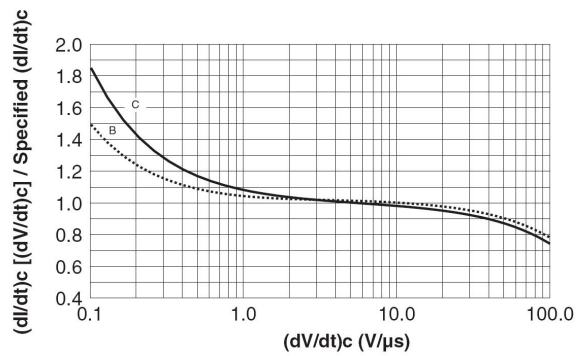
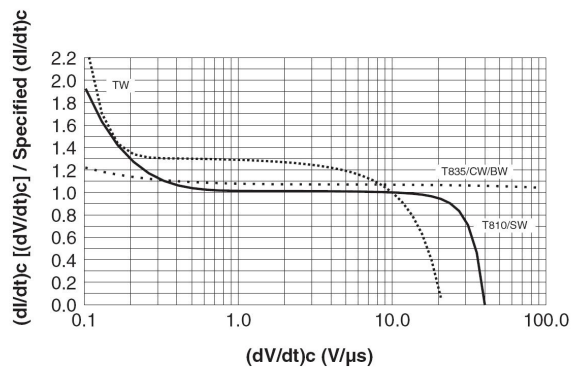
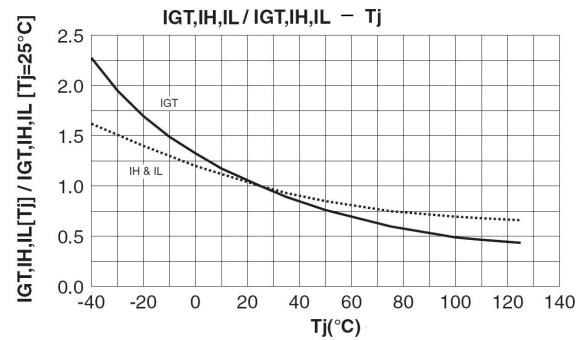
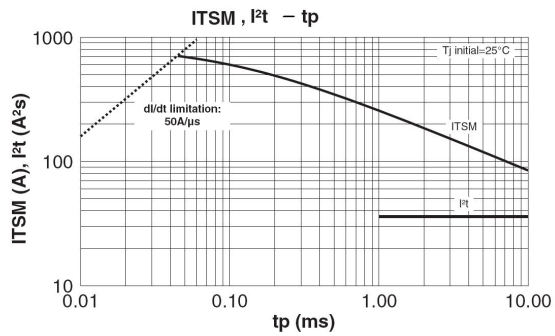
Note 2: for both polarities of A2 referenced to A1.



Electrical Characteristic Curve

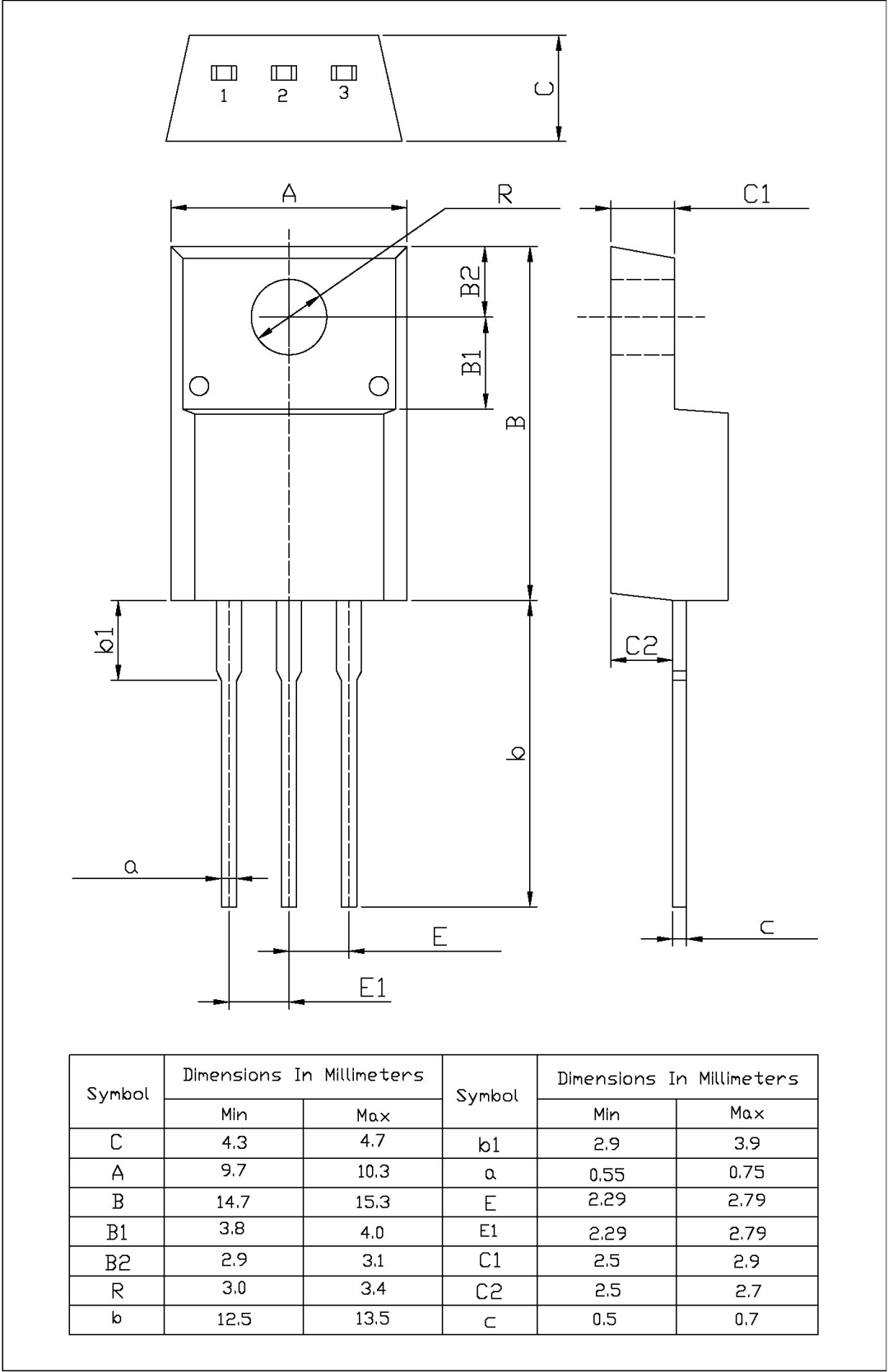


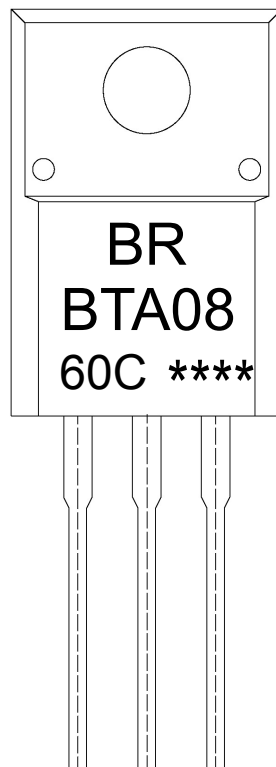
/ Electrical Characteristic Curve



/ Package Dimensions

T□-220F 单位：mm



/ Marking Instructions

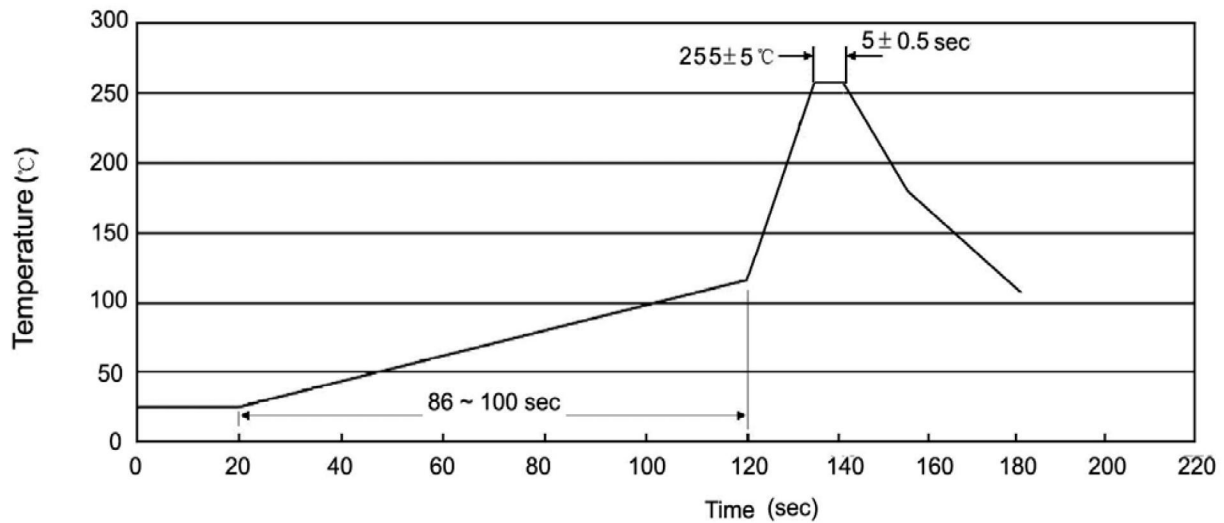
Note:

BR: Company Code

BTA08: Product Type.

60C: V_{RRM} I_{GT} Bracket code

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


() / Temperature Profile for Dip Soldering(Pb-Free)

Note:

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

/ Resistance to Soldering Heat Test Conditions

270 5 10 1 sec. Temp.:270±5°C Time:10±1 sec

/ Packaging SPEC.
/ 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

/ 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

/ Notices