

/ Descriptions

TO-220F

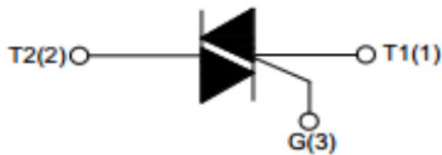
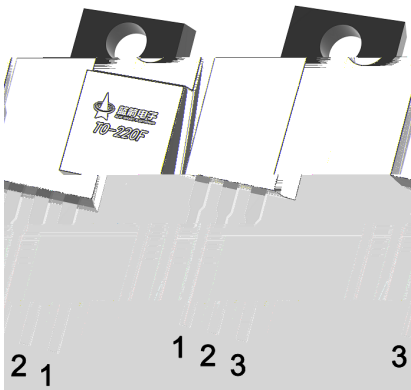
Triac in a TO-220F Plastic Package.

/ Features

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

/ 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

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings($T_a=25^\circ\text{C}$)

Parameter	Symbol	Rating	Unit
Repetitive peak off-state/reverse voltages($T_j=25^\circ\text{C}$)	$V_{\text{DRM}}/V_{\text{RRM}}$	800	V
RMS on-state current($T_c \leq 73^\circ\text{C}$)	$I_{\text{T(RMS)}}$	16	A
Non repetitive surge peak on-state current(full cycle, $T_j=25^\circ\text{C}$)	$I_{\text{TSM}(t=20\text{ms})}$	160	A
I^2t value for fusing($T_j=25^\circ\text{C}$)	$I^2t_{(tp=10\text{ms})}$	128	A^2s
Critical rate of rise of on-state current ($I_G=2I_{\text{GT}}$, $f=120\text{Hz}$ $T_j=125^\circ\text{C}$)	dI/dt I-II-III	50	$\text{A}/\mu\text{s}$
Peak gate current($t_p=20\mu\text{s}$ $T_j=125^\circ\text{C}$)	I_{GM}	4	A
Average gate power dissipation($T_j=125^\circ\text{C}$)	$P_{\text{G(AV)}}$	0.5	W
Operating junction temperature range	T_j	-40 125	
Storage junction temperature range	T_{stg}	-40 150	
Junction to ambient(AC)	$R_{\text{th(j-a)}}$	60	/W
Junction to case for(AC)	$R_{\text{th(j-c)}}$	2.3	

/ Electrical Characteristics($T_j=25^\circ\text{C}$)

3 / Snubberless and logic level 3 quadrants)

Symbol	Test Conditions	Quadrant	Value		Unit
I_{GT}	$V_D=12\text{V}$ $R_L=33\Omega$	I-II-III	Max.	35	mA
V_{GT}	$V_D=12\text{V}$ $R_L=33\Omega$	I-II-III	Max.	1.3	V
V_{GD}	$V_D=V_{\text{DRM}}$ $R_L=3.3\text{K}\Omega$ $T_j=125^\circ\text{C}$	I-II-III	Min.	0.2	V
I_{L}	$I_G=1.2I_{\text{GT}}$	I-III	Max.	50	mA
		II		70	
I_{H}	$I_{\text{T}}=500\text{mA}$		Max.	50	mA
(dV/dt)	$V_D=67\% V_{\text{DRM}}$ Gate Open	$T_j=125^\circ\text{C}$	Min.	1000	$\text{V}/\mu\text{s}$
V_{TM}	$I_{\text{TM}}=23\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	Max.	1.55	V
I_{DRM}	$V_D=V_{\text{DRM}}$ $V_R=V_{\text{RRM}}$	$T_j=25^\circ\text{C}$		10	μA
I_{RRM}		$T_j=125^\circ\text{C}$		1	mA

/ Electrical Characteristic Curve

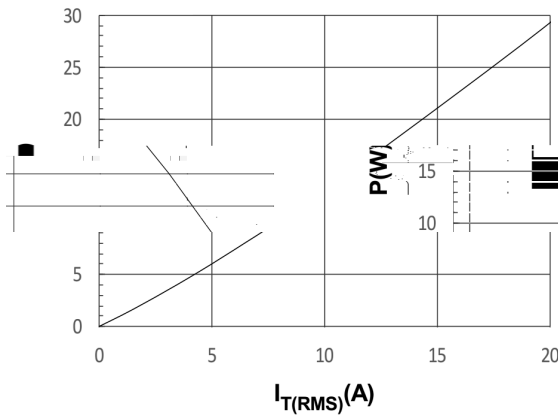


FIG.1 Maximum power dissipation versus RMS on-state current

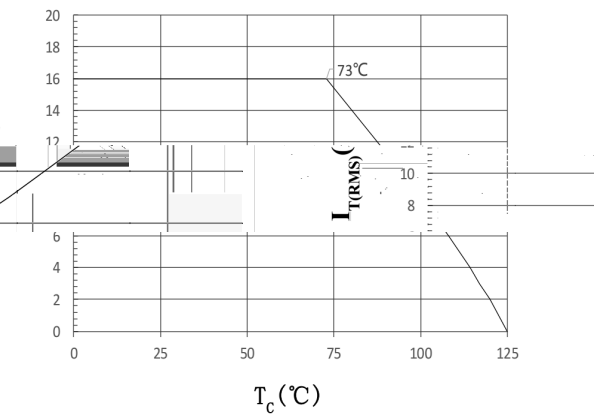


FIG.2: RMS on-state current versus case temperature

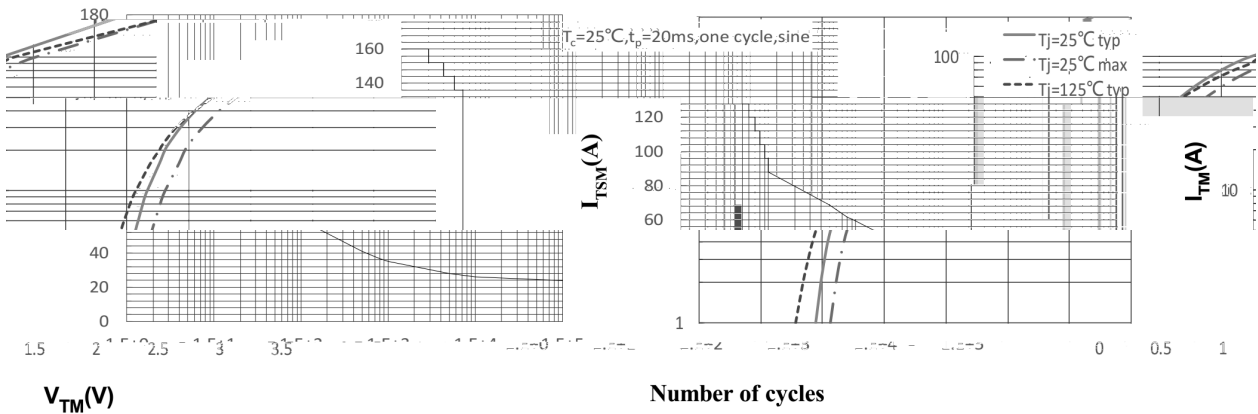


FIG.3: Surge peak on-state current versus number of cycles

FIG.4:

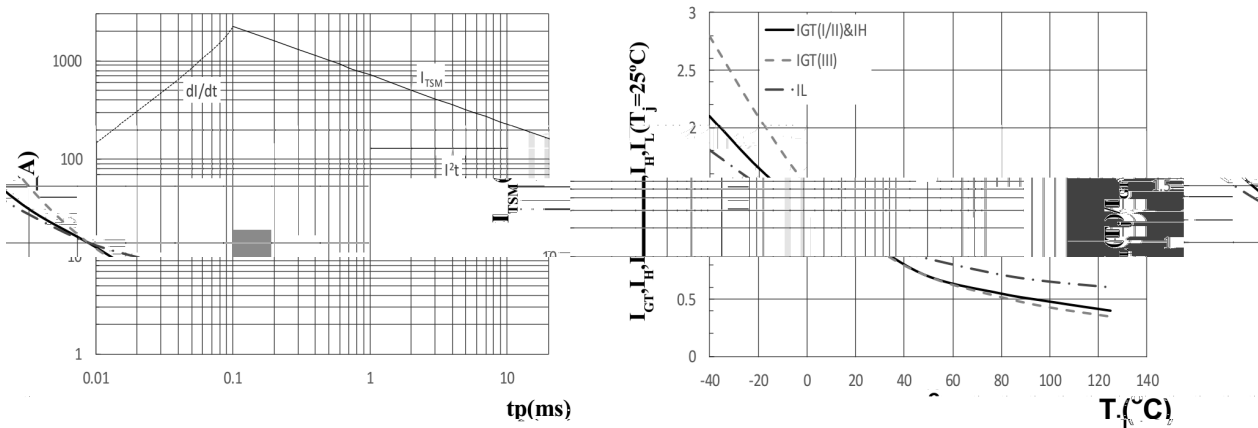
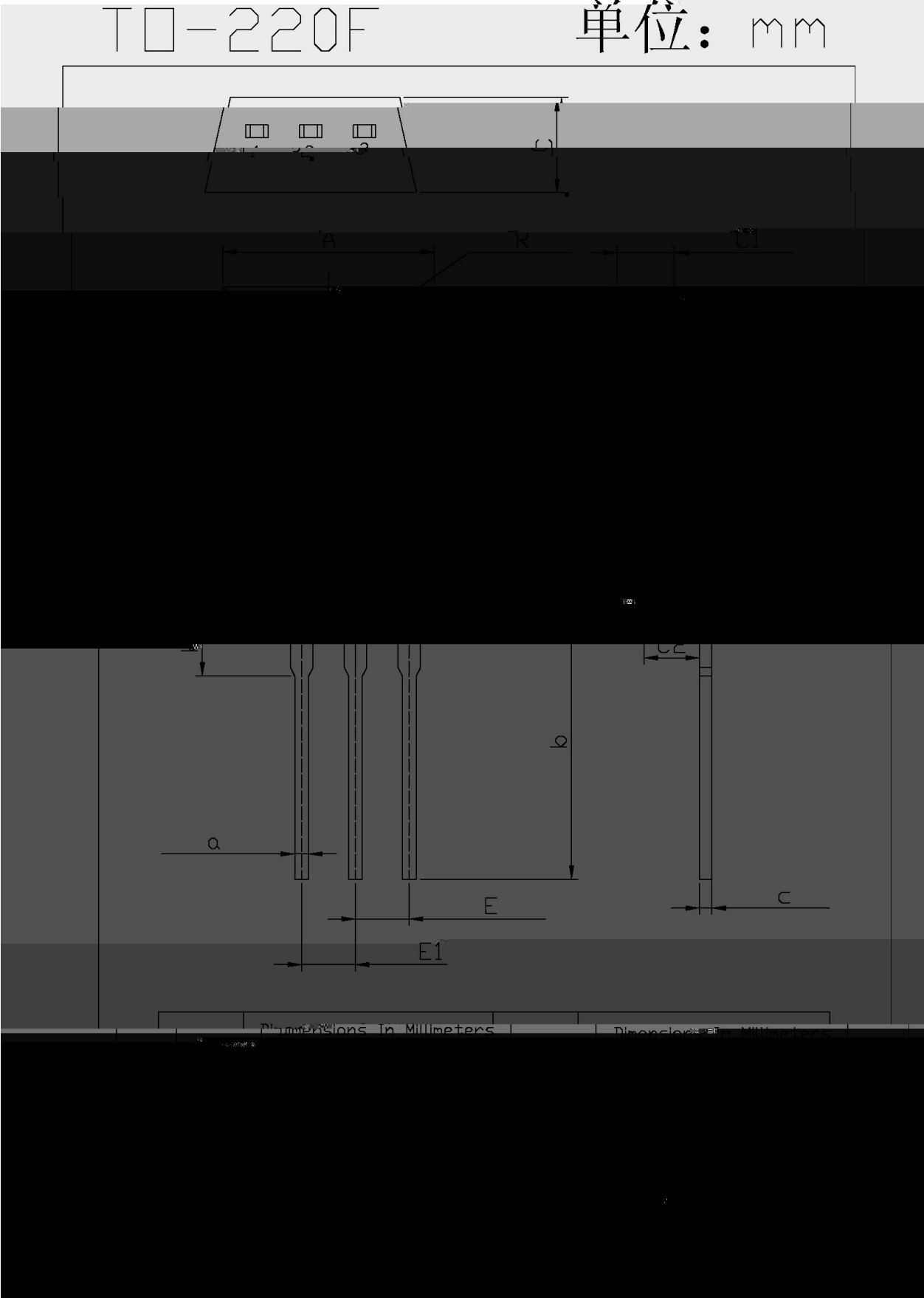
V_{TM}(V)
On-state characteristics

FIG.5: Non-repetitive surge peak on-state current

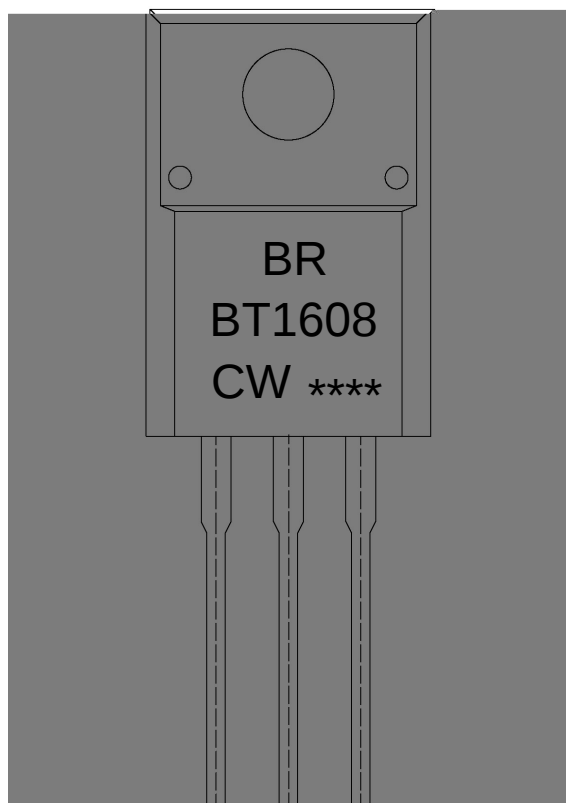
for commutation pulses with width greater than 100ns, and commutation pulses with width less than 100ns, the value of I_TSM should be reduced accordingly.

IGT(I/II) & IH: IGT(I/II) is the trigger current, IH is the hold current, and IL is the latch current.

/ Package Dimensions



/ Marking Instructions



BR

BT1608

CW

I_{GT}

Note:

BR: Company Code

BT1608: Product Type Code

CW: I_{GT} Bracket code

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

BRBT1608CWFA

Rev.A Jan.-2024



DATA SHEET

() / 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 Time:10±1 sec

/ Packaging SPEC.

/ BULK

Package Type	Units		Dimension	(unit mm ³)
	Units/Bag /	Bags/Inner Box /	Units/Inner Box /	