JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD
TO-220AK Plastic-Encapsulate Thyristors
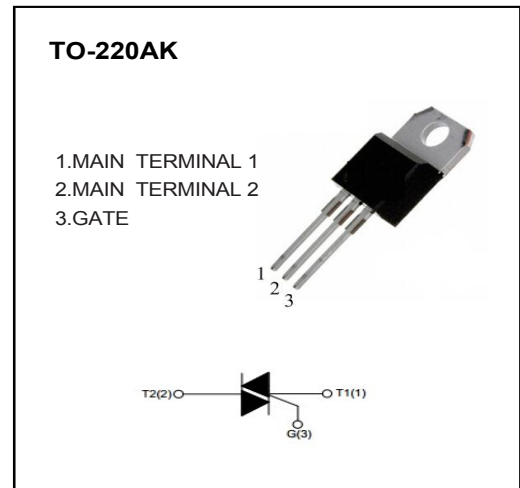
BTA08 3Q TRIACs

MAIN CHARACTERISTICS

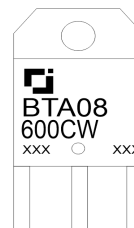| $I_{T(RMS)}$		8A
V_{DRM}/V_{RRM}	BTA08-600(T/S/C)W	600V
	BTA08-800(T/S/C)W	800V
V_{TM}		1.55V

FEATURES

- NPNPN 5-layer Structure TRIACs
- Mesa Glass Passivated Technology
- Multi Layers Metal Electrodes
- High Junction Temperature
- Good Commutation Performance
- High dV/dt and dI/dt
- Insulating Voltage=2500V(RMS)

APPLICATIONS

- Heater Control
- Motor Speed Controller
- Mixer

TO-220AK

1.MAIN TERMINAL 1
2.MAIN TERMINAL 2
3.GATE

MARKING

BTA08:Series Code

600CW:Depends on V_{DRM}
         and I_{GT}

XXX:Internal Code

ABSOLUTE RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Test condition		Value		Unit
V_{DRM}/ V_{RRM}	Repetitive peak off-state voltage	T_j=25℃	BTA08-600(T/S/C)W	600		V
			BTA08-800(T/S/C)W	800		V
$I_{T(RMS)}$	RMS on-state current	TO-220AK(T_C≤100℃)，Fig. 1,2		8		A
I_{TSM}	Non repetitive surge peak on-state current	Full sine wave，T_j(init)=25℃, tp=20ms; Fig. 3,5		80		A
I^2t	I^2t value	tp=10ms		36		A^2s
dI_T/dt	Critical rate of rise of on-state current	I_G=2*I_{GT}, tr≤10ns, F=120H$_Z$, T_j=125℃		Ⅰ-Ⅱ-Ⅲ	50	A/µs
I_{GM}	Peak gate current	tp=20µs, T_j=125℃		4		A
$P_{G(AV)}$	Average gate power	T_j=125℃		1		W
T_{STG}	Storage temperature			-40~+150		℃
T_j	Operating junction temperature			-40~+125		

ELECTRICAL CHARACTERISTICS (T$_a$=25℃ unless otherwise specified)

Symbol	Parameter	Test condition		Value			Unit
				TW	SW	CW	
I$_{GT}$	Gate trigger current	V$_D$=12V, R$_L$=30Ω, T$_j$=25℃, Fig. 6	I - II -III	≤5	≤10	≤35	mA
V$_{GT}$	Gate trigger voltage		I - II -III	≤1.3			V
V$_{GD}$	Non-triggering gate voltage	VD=VDRM, T$_j$=125℃		≥0.2			V
I$_H$	Holding current	I$_T$=100mA，Fig. 6		≤10	≤15	≤35	mA
I$_L$	Latching current	I$_G$=1.2I$_{GT}$, Fig. 6	I -III	≤10	≤25	≤50	mA
			II	≤15	≤30	≤60	mA
dV$_D$/dt	Critical rate of rise of off-state	V$_D$=67%V$_{DRM}$, Gate Open T$_j$=125℃		≥20	≥40	≥400	V/μs
V$_{TM}$	On-state Voltage	I$_{TM}$=11A ,tp=380μs , Fig. 4		≤1.55			V
I$_{DRM}$ / I$_{RRM}$	Repetitive peak off-state current	V$_D$=V$_{DRM}$/V$_{RRM}$, T$_j$=25℃		≤5	≤5	≤5	μA
		V$_D$=V$_{DRM}$/V$_{RRM}$,T$_j$=125℃		≤1.0	≤1.0	≤1.0	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
Rth (j-c)	Junction to case (AC)	TO-220AK	2.5	℃/W
Rth (j-a)	Junction to ambient	TO-220AK	60	℃/W

PART NUMBER

BT A 08 -600 C W

TRIACs

A:insulation

I$_T$(RMS)=8A

3 Quadrant

T：I$_{GT1-3}$≤5mA
S：I$_{GT1-3}$≤10mA
C：I$_{GT1-3}$≤35mA

Repetitive peak off-state voltage

600：≥ 600V
800：≥ 800V

CHARACTERISTICS CURVES

FIG.1: Maximum power dissipation versus RMS
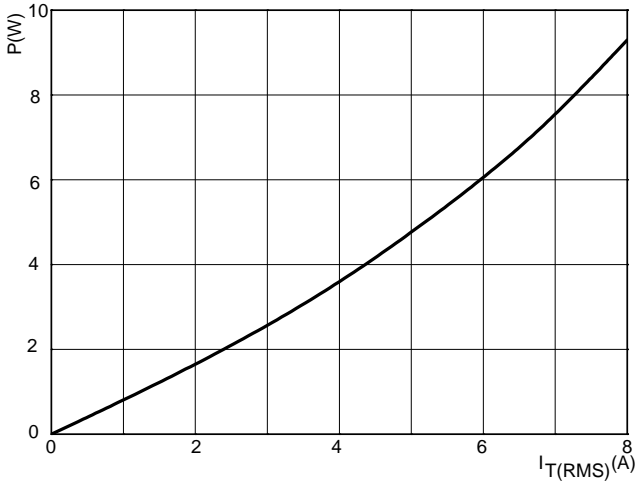on-state current (full cycle)

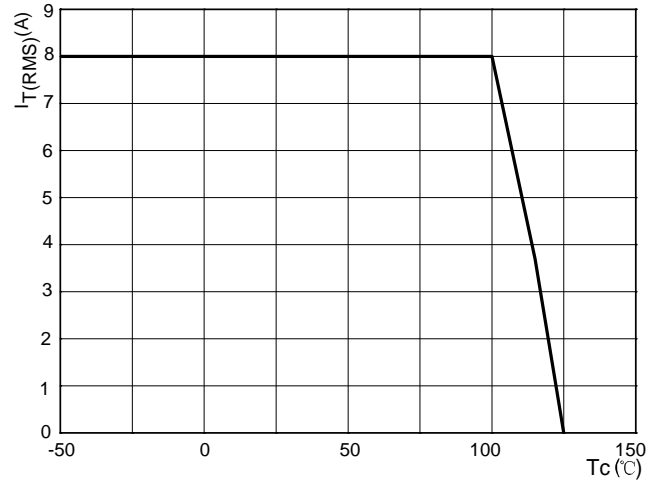FIG.2: RMS on-state current versus case temperature
(full cycle)

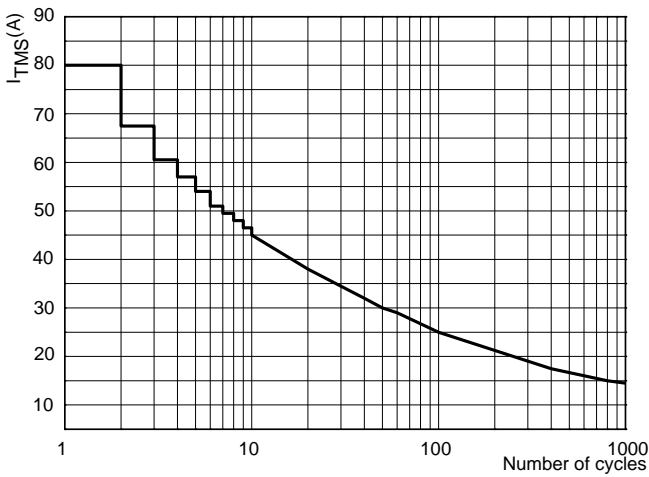FIG.3: Surge peak on-state current versus number of cycles

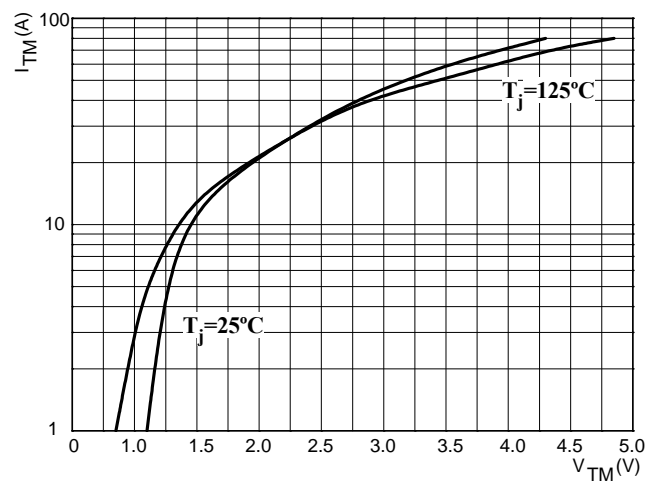FIG.4: On-state characteristics (maximum values)

$T_j=125°C$

$T_j=25°C$

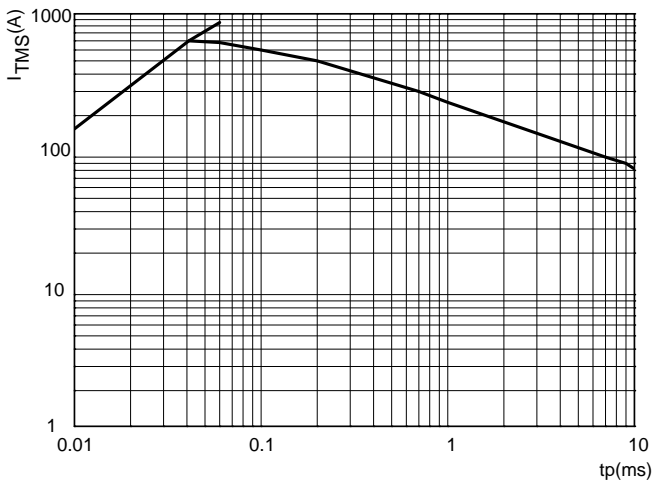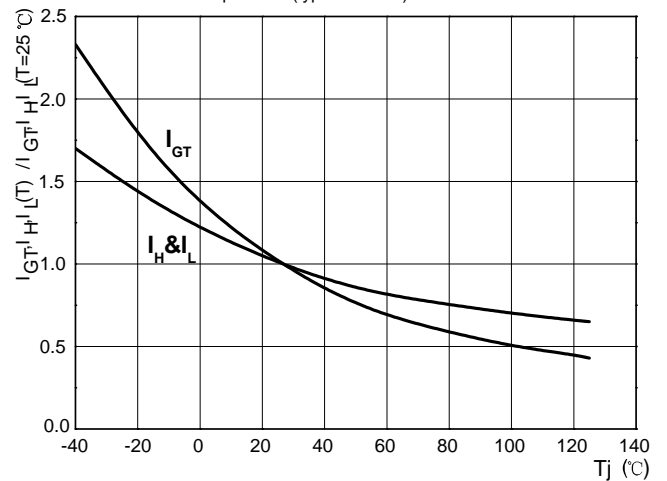FIG.5: Non-repetitive surge peak on-state current for
a sinusoidal pulse with width tp < 10ms

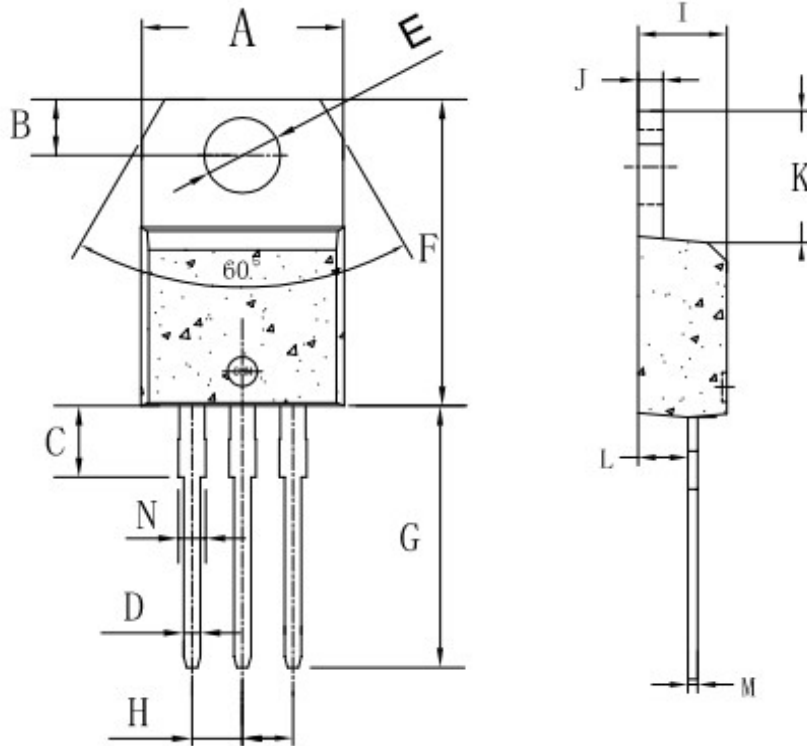FIG.6: Relative variations of gate trigger current, holding
current and latching current versus junction
temperature (typical values)

I_{GT}

I_H & I_L

TO-220AK PACKAGE OUTLINE DIMENSIONS

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	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