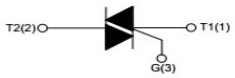
MAIN CHARACTERISTICS

$I_{T(RMS)}$		40A
V_{DRM}/V_{RRM}	BTA41-600(C/B)W	600V
	BTA41-800(C/B)W	800V
V_{TM}		1.55V

TO-3PK

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



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

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℃	BTA41-600(C/B)W	600		V
			BTA41-800(C/B)W	800		V
$I_{T(RMS)}$	RMS on-state current	TO-3PK(T_C≤80 ℃)，Fig. 1,2		40		A
I_{TSM}	Non repetitive surge peak on-state current	Full sine wave，T_j(init)=25℃, tp=20ms; Fig. 3,5		400		A
I^2t	I^2t value	tp=10ms		1000		A^2s
dI_T/dt	Critical rate of rise of on-state current	I_G=2*I_{GT}, tr≤10ns, F=120Hz, T_j=125℃		Ⅰ-Ⅱ-Ⅲ	50	A/μs
I_{GM}	Peak gate current	tp=20μs, T_j=125℃		8		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		℃

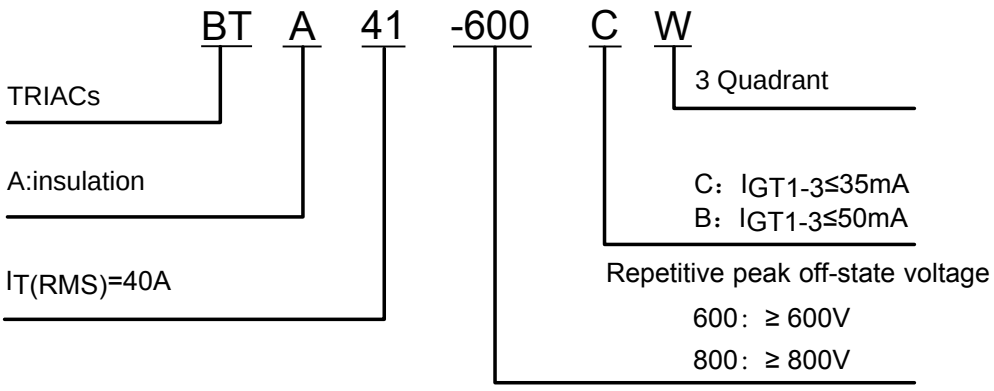
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Symbol	Parameter	Test condition		Value		Unit
				CW	BW	
I_{GT}	Gate trigger current	V_D=12V, R_L=33Ω, T_j=25℃, Fig. 6	Ⅰ-Ⅱ-Ⅲ	≤35	≤50	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=500mA，Fig. 6		≤50	≤75	mA
I_L	Latching current	I_G=1.2I_{GT}, Fig. 6	Ⅰ-Ⅲ	≤60	≤80	mA
			Ⅱ	≤80	≤100	mA
dV_D/dt	Critical rate of rise of off-state	V_D=67%V_{DRM}, Gate Open T_j=125℃		≥500	≥1000	V/μs
V_{TM}	On-state Voltage	I_{TM}=60A ,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	μA
		V_D=V_{DRM}/V_{RRM},T_j=125℃		≤4.0	≤4.0	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
Rth (j-c)	Junction to case (AC)	TO-3PK	0.9	℃/W
Rth (j-a)	Junction to ambient	TO-3PK	50	℃/W

PART NUMBER



CHARACTERISTICS CURVES

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

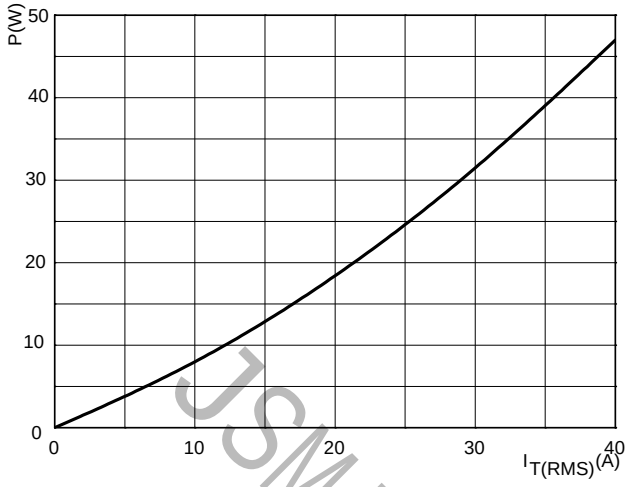


FIG.2: RMS on-state current versus case temperature (full cycle)

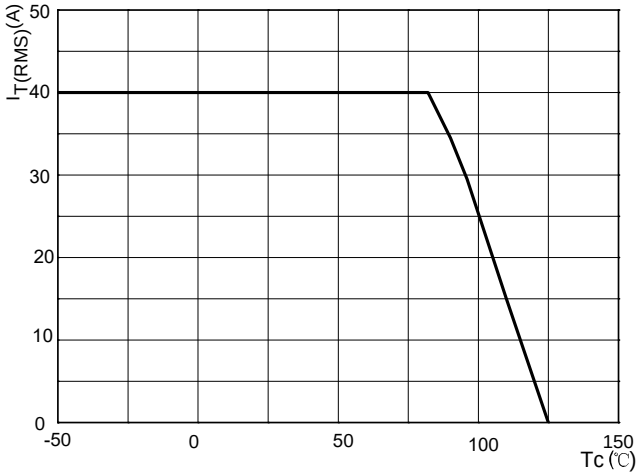


FIG.3: Surge peak on-state current versus number of cycles

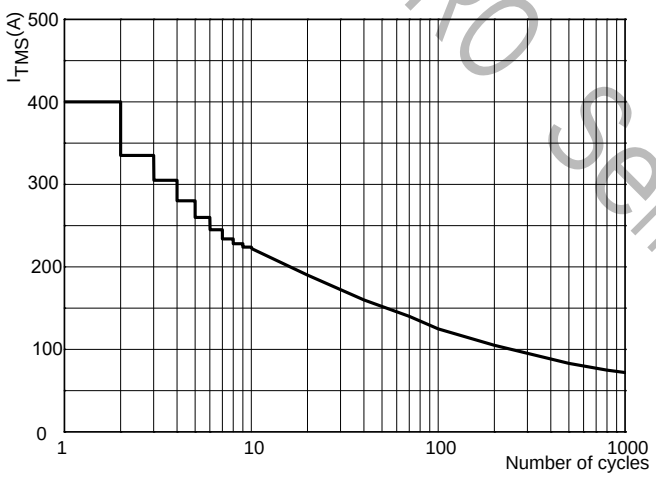


FIG.4: On-state characteristics (maximum values)

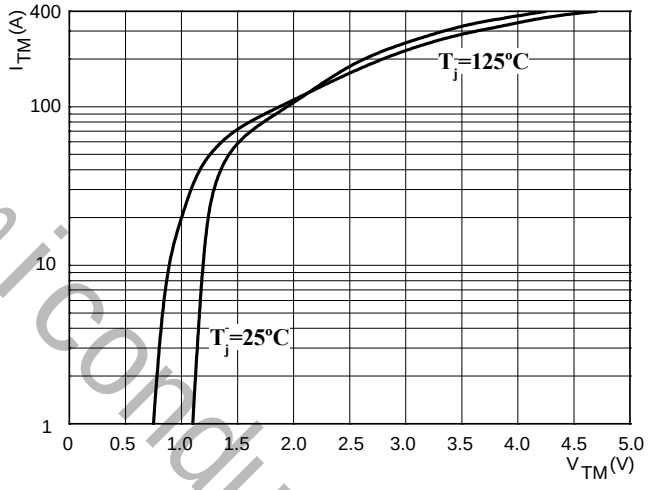


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10ms

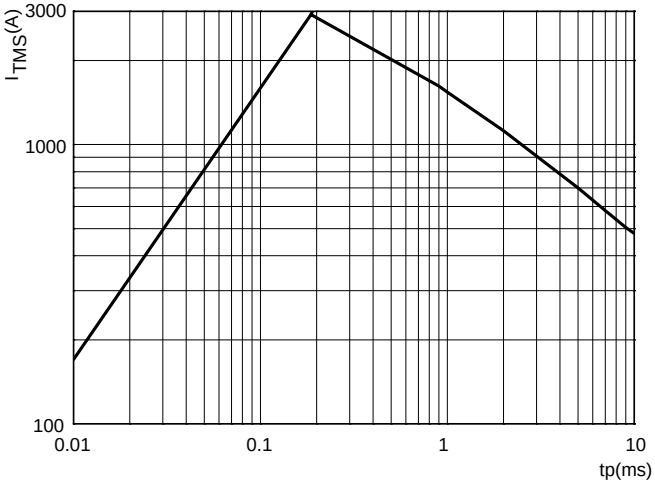
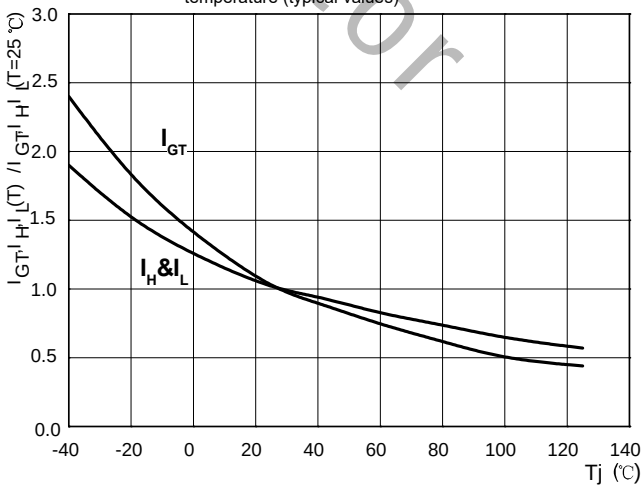
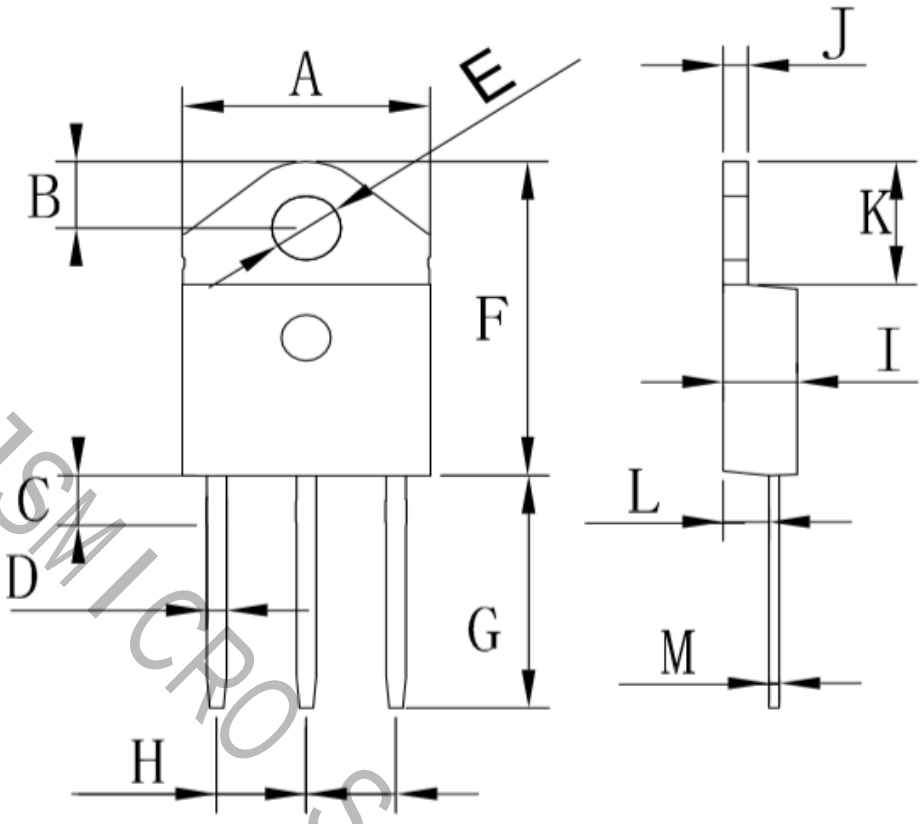


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



TO-3PK PACKAGE OUTLINE DIMENSIONS



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	14.9	15.35	0.586	0.604
B	4.1	4.65	0.161	0.183
C	2.5	3.2	0.098	0.125
D	1.12	1.32	0.044	0.051
E	4.12	4.31	0.162	0.169
F	20.21	20.75	0.795	0.816
G	15.02	15.55	0.591	0.612
H	5.35	5.62	0.210	0.221
I	4.38	4.65	0.172	0.183
J	1.42	1.62	0.055	0.063
K	7.85	8.22	0.309	0.323
L	2.71	2.92	0.106	0.114
M	0.52	0.68	0.020	0.026