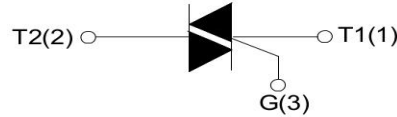
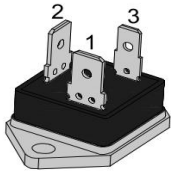


25A TRIACS



BTA25_
TG-C
PLASTIC PACKAGE

BTA25 series, with high ability to withstand the shock loading of large current, provide high dv/dt rate with strong resistance to electromagnetic interface. With high commutation performances, 3 quadrants products are especially recommended for use on inductive load.

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40 to 150	°C
Operating junction temperature range	T_j	-40 to 125	°C
Repetitive peak off-state voltage ($T_j = 25^\circ\text{C}$)	V_{DRM}	600/800/1200	V
Repetitive peak reverse voltage ($T_j = 25^\circ\text{C}$)	V_{RRM}	600/800/1200	V
Non repetitive surge peak off-state voltage	V_{DSM}	$V_{DRM} + 100$	V
Non repetitive peak reverse voltage	V_{RSM}	$V_{RRM} + 100$	V
RMS on-state current ($T_c = 90^\circ\text{C}$)	$I_{T(RMS)}$	25	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	250	A
I^2t value for fusing (tp=10ms)	I^2t	340	A ² s
Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	dI/dt	50	A/ μ s
Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	10	W

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

$V_{DRM} / V_{RRM} : 600/800V$

Parameter	Test Condition	Symbol	MAX	Quadrant	Values		Unit
					BTA25-600/800V		
					BW	CW	
Gate Trigger Current	$V_D = 12V, R_L = 33\Omega$	I_{GT}	MAX	I-II-III	50	35	mA
Gate Trigger Voltage		V_{GT}	MAX	I-II-III	1.3		
Off-State Gate Voltage	$V_D = V_{DRM}, T_j = 125^\circ\text{C}, R_L = 3.3K\Omega$	V_{GD}	MIN	I-II-III	0.2		V
Latching Current	$I_G = 1.2 I_{GT}$	I_L	MAX	I-III	80	70	mA
				II	100	80	
Holding Current	$I_T = 100mA$	I_H	MAX		75	50	mA
Critical Rate of Rise of Off-State Voltage	$V_D = 2/3 V_{DRM}, \text{Gate Open}, T_j = 125^\circ\text{C}$	dV/dt	MIN		1000	500	V/ μ s

V_{DRM} / V_{RRM} : 600/800V

Parameter	Test Condition	Symbol		Quadrant	Values	Unit
Gate Trigger Current	$V_D = 12V, R_L = 33\Omega$	I_{GT}	MAX	I-II-III	50	mA
Gate Trigger Voltage				IV	70	
Off-State Gate Voltage	$V_D = V_{DRM}, T_J = 125^\circ C, R_L = 3.3K\Omega$	V_{GD}	MIN	I-II-III	0.2	V
Latching Current	$I_G = 1.2 I_{GT}$	I_L	MAX	I-III	80	mA
Holding Current				II	100	
Critical Rate of Rise of Off-State Voltage	$V_D = 2/3 V_{DRM}, \text{Gate Open}, T_J = 125^\circ C$	dV/dt	MIN		500	V/ μs

V_{DRM} / V_{RRM} : 1200V

Parameter	Test Condition	Symbol		Quadrant	Values		Unit
					BTA25-1200V		
					BW	CW	
Gate Trigger Current	$V_D = 12V, R_L = 33\Omega$	I_{GT}	MAX	I-II-III	50	35	mA
Gate Trigger Voltage					V_{GT}	MAX	
Off-State Gate Voltage	$V_D = V_{DRM}, T_J = 125^\circ C, R_L = 3.3K\Omega$	V_{GD}	MIN	I-II-III	0.2		V
Latching Current	$I_G = 1.2 I_{GT}$	I_L	MAX	I-III	90	70	mA
Holding Current				II	100	80	
Critical Rate of Rise of Off-State Voltage	$V_D = 2/3 V_{DRM}, \text{Gate Open}, T_J = 125^\circ C$	dV/dt	MIN		1500	1000	V/ μs

Static Characteristics

Parameter	Test Conditions	Symbol		Value	Unit
On-State Voltage	$I_{TM} = 35A, t_p = 380\mu s$	V_{TM}	$T_J = 25^\circ C$	1.5	V
Off-State Leakage Current	$V_D = V_{DRM}, V_R = V_{RRM}$	I_{DRM}	$T_J = 25^\circ C$	5	μA
		I_{RRM}	$T_J = 125^\circ C$	3	mA

Thermal Resistance

Parameter	Symbol	Value	Unit
Maximum Thermal Resistance Junction to case (AC)	$R_{th(j-c)}$	0.85	$^\circ C/W$

Device Name	
BTA25 – xxx yy	
xxx	yy
600: $V_{DRM}/V_{RRM} \geq 600V$	BW: $I_{GT\ I-II-III} \leq 50mA$
800: $V_{DRM}/V_{RRM} \geq 800V$	CW: $I_{GT\ I-II-III} \leq 35mA$
1200: $V_{DRM}/V_{RRM} \geq 1200V$	B: $I_{GT\ I-II-III} \leq 50mA, I_{GT\ IV} \leq 70mA$

CHARACTERISTIC CURVES

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

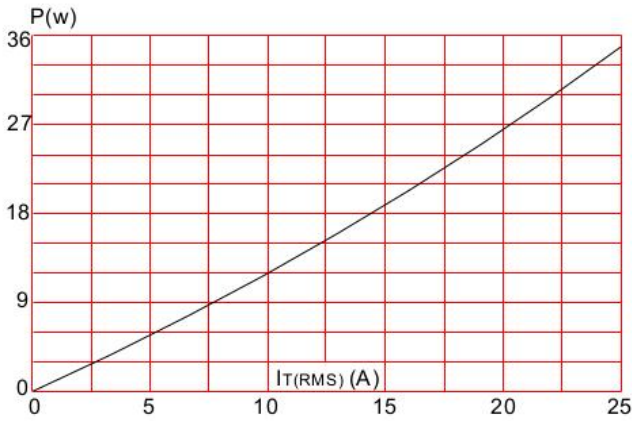


FIG.2: RMS on-state current versus case temperature

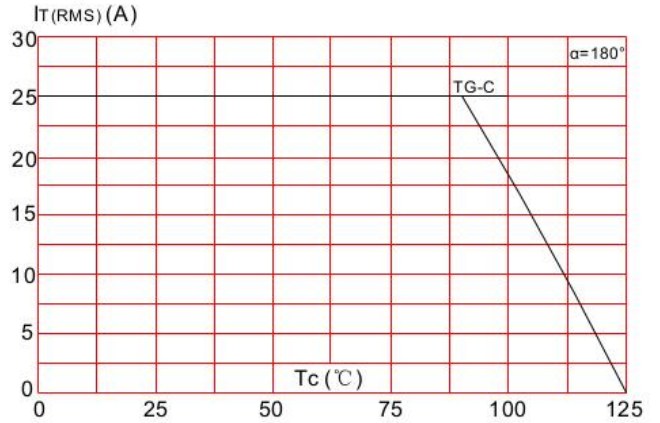


FIG.3: Surge peak on-state current versus number of cycles

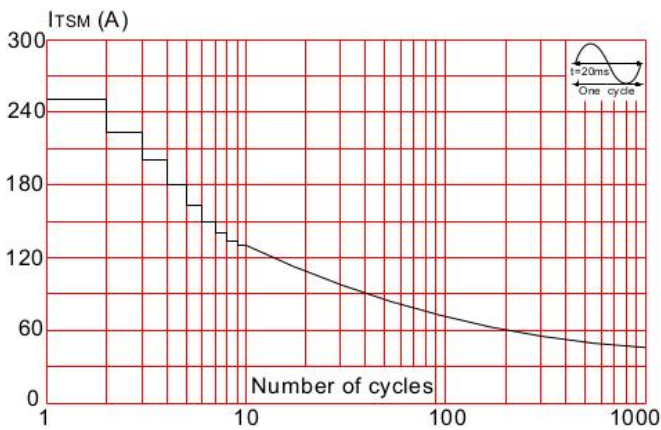


FIG.4: On-state characteristics (maximum values)

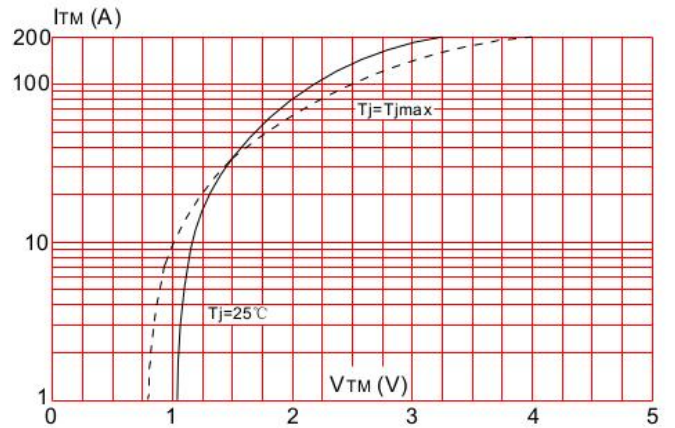


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

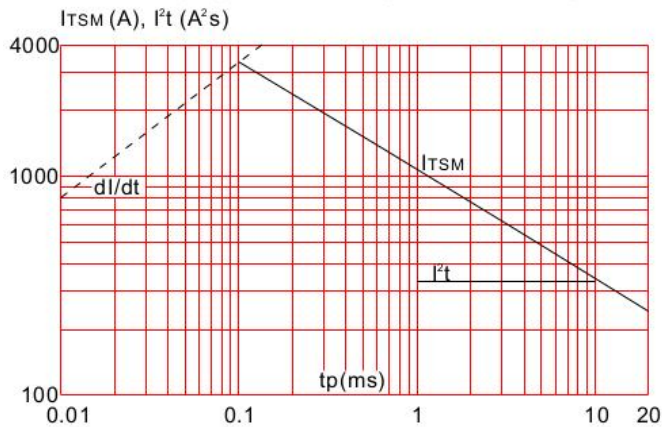
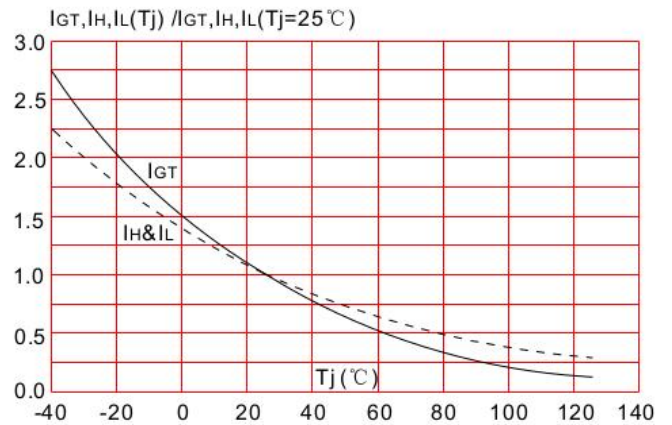
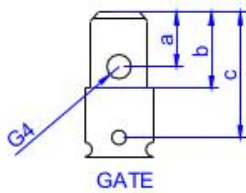
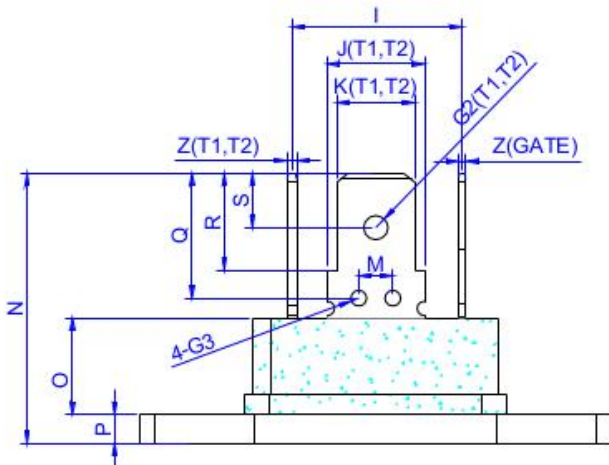
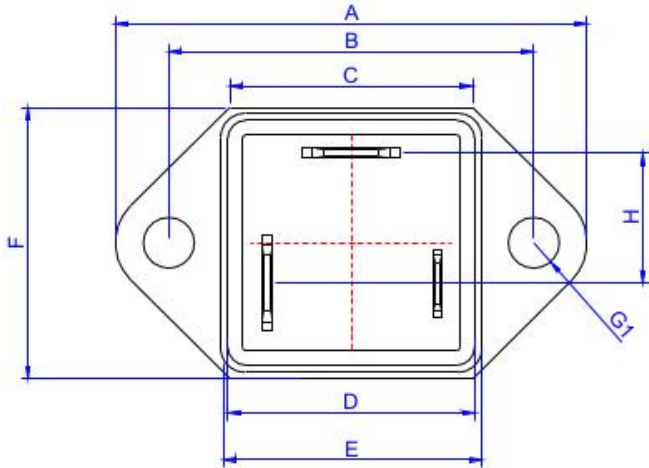


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



PACKAGE OUTLINE AND DIMENSIONS



TG-C

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			39.2			1.543
B	29.8	30.0	30.2	1.173	1.181	1.189
C			20.2			0.795
D			20.5			0.807
E			21.6			0.85
F			23			0.905
G1	Φ 4.1	Φ 4.2	Φ 4.3	Φ 0.161	Φ 0.165	Φ 0.169
H		10.3			0.406	
I		13.9			0.547	
J(T1,T2)		8			0.315	
K(T1,T2)		6.4			0.252	
M	2.7	3.0	3.3	0.106	0.118	0.130
N			22.8			0.898
O		8.2			0.323	
P		2.5			0.098	
Q	9.45	9.75	10.1	0.374	0.383	0.398
R	7.8	7.95	8.1	0.307	0.313	0.319
S	4.3	4.5	4.7	0.169	0.177	0.185
Z(T1,T2)	0.78	0.8	0.85	0.0307	0.0315	0.0335
G2(T1,T2)		Φ 2	Φ 2.2		Φ 0.079	Φ 0.087
G3	Φ 1.1	Φ 1.3	Φ 1.5	Φ 0.043	Φ 0.051	Φ 0.059
G4		Φ 1.55	Φ 1.75		Φ 0.061	Φ 0.069
a	2.95	3.15	3.35	0.116	0.124	0.132
b	6.2	6.35	6.5	0.244	0.25	0.256
c	9.35	9.75	10	0.368	0.384	0.393
Z(GATE)	0.58	0.6	0.65	0.0228	0.0236	0.0256
J(GATE)		5.6			0.221	
K(GATE)		4.65			0.183	



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2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

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