Product Manual

EKWIN ELECTRONICS CO.,LTD

EK BTA20

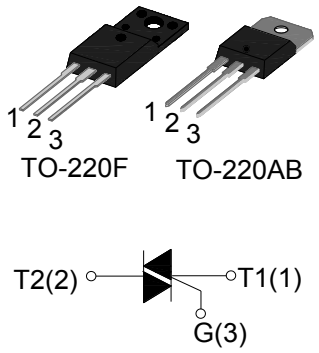
www.ekwin.net

Standard TRIACS

BTA20 Serial

Main Features:

$I_{T(RMS)}$	V_{DRM}/V_{RRM}	V_{TM}
20 A	600V 800V	≤1.55 V



Description:

High current density due to double mesa technology; Glass Passivation.BTA20series TRIACS is suitable for general purpose AC switching.they can be used as an ON/OFF Function in applications such as static relays,heating regulation,induction motor stating circuits..or for phase control operation light dimmers,motor speed controllers.

Absolute Ratings(limiting values) :

Symbol	Parameter		Value	Unit
T_{stg}	Storage junction temperature range		- 40 to + 150	℃
T_j	Operating junction temperature range		- 40 to + 125	℃
$I_{T(RMS)}$	RMS on-state current	TO-220AB(Ins) (TC=70℃)	20	A
		TO-220F(Ins) (TC=75℃)		
I_{TSM}	Non repetitive surge peak on-state current (tp=10ms)		200	A
V_{DRM}	Repetitive peak off-state voltage(Tj =25℃)		600/800	V
V_{RRM}	Repetitive peak reverse voltage(Tj =25℃)		600/800	V
V_{DSM}	Non repetitive surge peak Off-state voltage		V_{DRM} + 100	V
V_{RSM}	Non repetitive peak reverse voltage		V_{RRM} + 100	V
I^2t	I^2t value for fusing tp = 10 ms		200	A^2s
dI/dt	Critical rate of rise of on-state current (I_G =2×I_{GT})		100	A/μs

I_{GM}	Peak gate current	4	A
$P_{G(AV)}$	Average gate power dissipation	1	W
P_{GM}	Peak gate power	10	W

Electrical Characteristics : (Tj=25℃ unless otherwise specified)

Symbol	Test Condition	Quadrant	Range	V_{DRM} /V_{RRM}: 600/800V		V_{DRM} /V_{RRM}:	Unit
				B	C	1200	
I_{GT}	V_D=12V R_L=33Ω	I-II-III	MAX	50	35	50	mA
V_{GT}		I-II-III	MAX	1.5			V
V_{GD}	V_D=V_{DRM} R_L=3.3kΩ T_j=125°C	I-II-III	MIN	0.2			V
I_L	I_G=1.2 I_{GT}	I-III	MAX	70	50	80	mA
		II		80	60	100	
I_H	I_{TM}= 100mA		MAX	60	40	70	mA
dV/dt	V_D=2/3V_{DRM} Gate Open T_j=125°C		MIN	500	250	200	V/μs
(dV/dt)c	(dI/dt)c=8.8A/ms Tj=125℃		MIN	12.5	7	7	V/μs

Static Characteristics

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	I_{TM}=28A tp= 380μs	T_j=25°C	1.55	V
I_{DRM} I_{RRM}	V_D=V_{DRM} ,V_R=V_{RRM}	T_j=25°C	5	μ A
		T_j=125°C	2.5	mA

Thermal Resistances :

Symbol	Parameter		Value	Unit
Rth(j-c)	Junction to case for AC	TO-220AB(Ins)	3.9	°C/W
		TO-220F(Ins)	3.3	

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

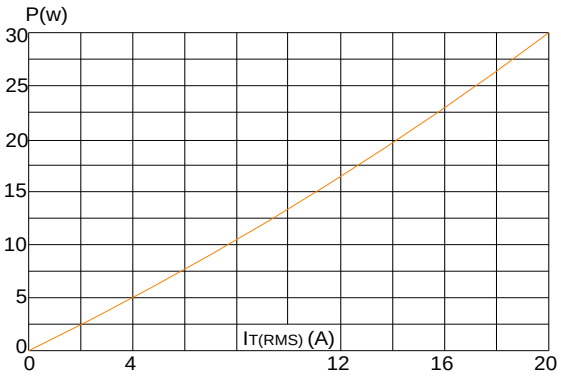


FIG.2: RMS on-state current versus case temperature

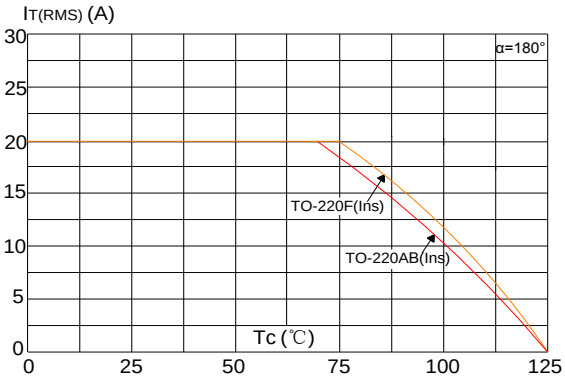


FIG.3: Surge peak on-state current versus number of cycles

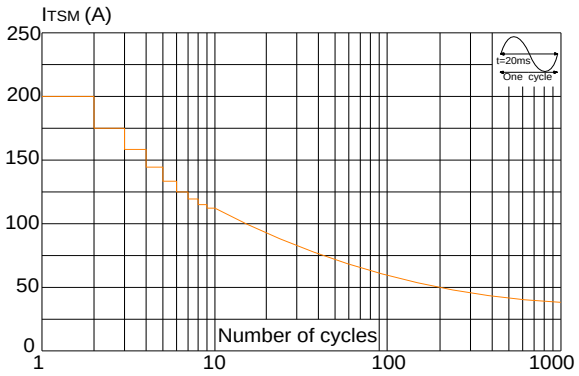


FIG.4: On-state characteristics (maximum values)

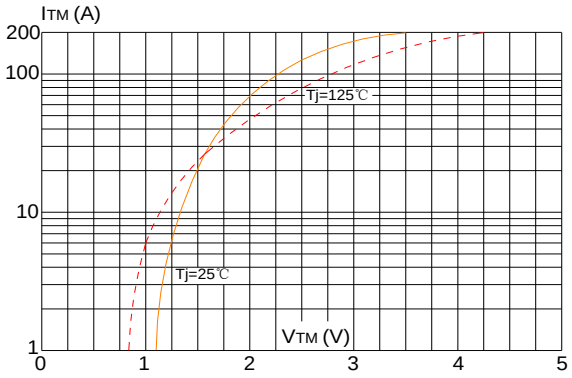


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<20ms, and corresponging value of I^2t (dI/dt < 100A/μs)

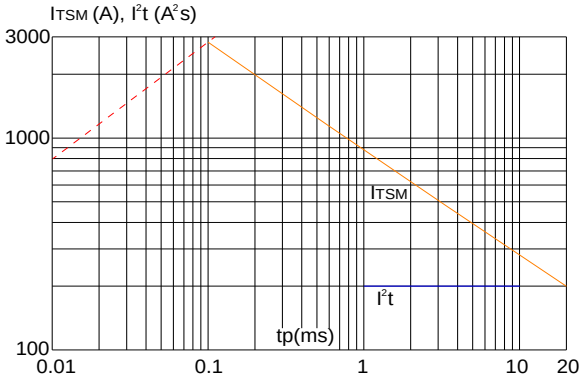
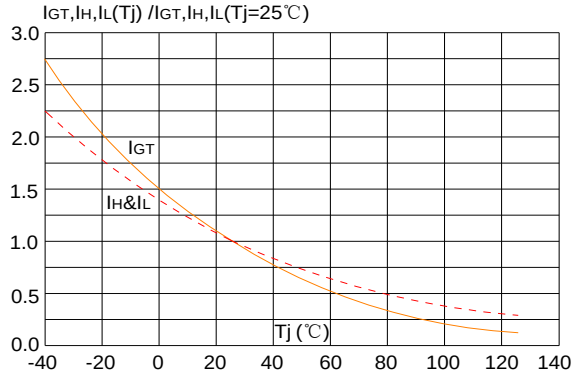
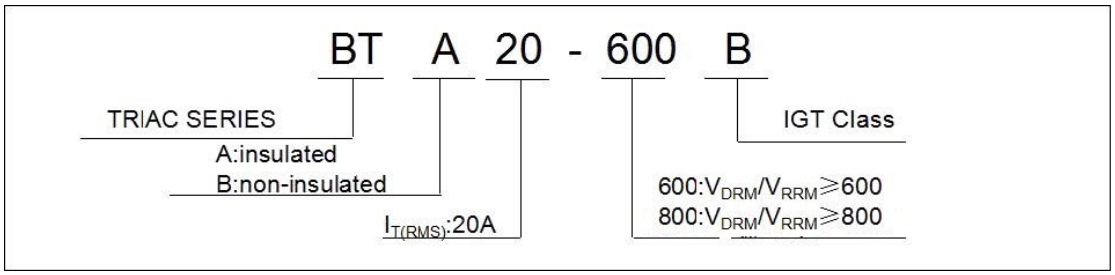


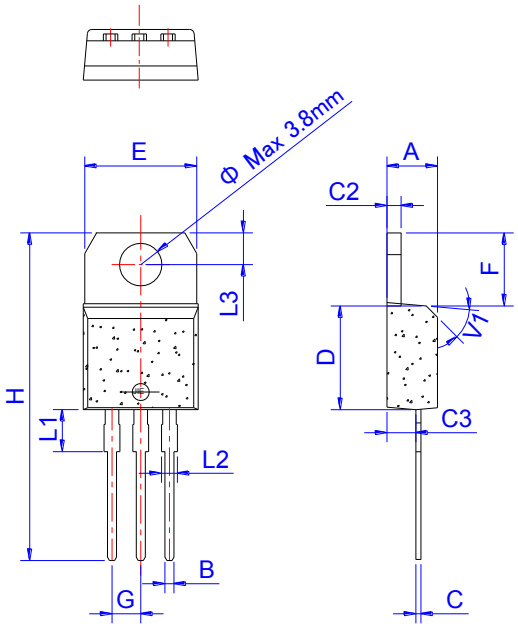
FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



Ordering Information:

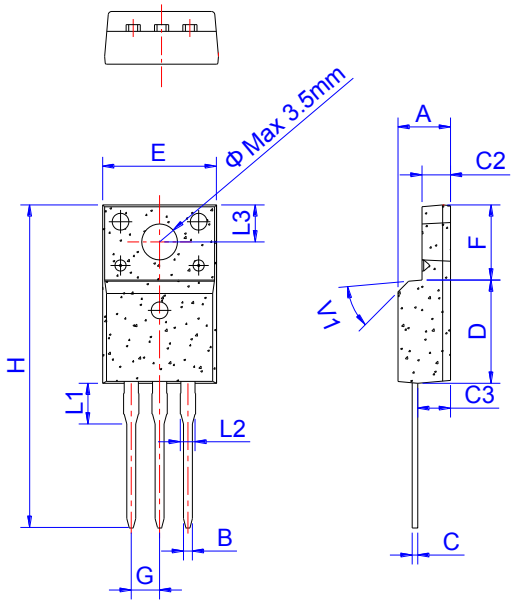


Package Mechanical Data :



TO-220AB Non-Ins

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	



TO-220F Ins

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.80	0.173		0.189
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.48		0.75	0.019		0.030
C2	2.40		2.70	0.094		0.106
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.70		10.3	0.382		0.406
F	6.40		7.00	0.252		0.276
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.63			0.143	
L2	1.14		1.70	0.045		0.067
L3		3.30			0.130	
V1		45°			45°	