

16A 3Quadrants TRIACs

Product Summary

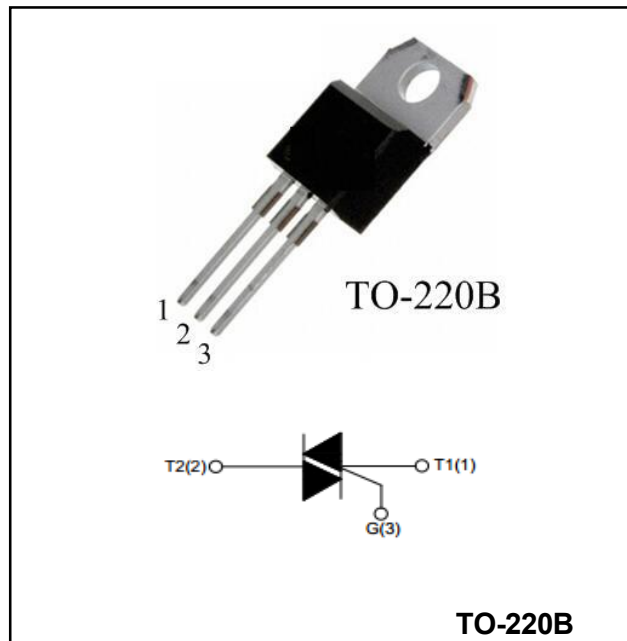
Symbol	Value	Unit
$I_{T(RMS)}$	16	A
$V_{DRM} V_{RRM}$	600/800	V
V_{TM}	1.55	V

Features

With high ability to withstand the shock loading of large current, Provide high dv/dt rate with strong resistance to electromagnetic interference.

Application

Power charger, T-tools, massager, solid state relay, AC Motor speed regulation and so on.



Order Information

Part Number	Package	Marking	packing	Delivery Quantity
BTB16	TO-220B	BTB16-600(S/C/B)W XXXX	BOX	1000PCS/BOX
BTB16	TO-220B	BTB16-800(S/C/B)W XXXX	BOX	1000PCS/BOX

Absolute maximum ratings (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage	V_{DRM}	600/800	V
Repetitive peak reverse voltage	V_{RRM}	600/800	V
RMS on-state current	$I_{T(RMS)}$	16	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	160	A
I^2t value for fusing (tp=10ms)	I^2t	140	A ² s
Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	di/dt	I - II - III 100	A/ μ s
Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_G (AV)$	1	W
Junction Temperature	T_J	-40~+125	°C
Storage Temperature	T_{STG}	-40 ~+150	°C

Electrical characteristics (TA=25°C, unless otherwise noted)

Parameter	Symbol	Test Condition		Value			Unit
				SW	CW	BW	
Gate trigger current	I _{GT}	V _D =12V,R _L =33Ω T _j =25℃, Fig.6	I - II -III	≤10	≤35	≤50	mA
Gate trigger voltage	V _{GT}		I - II -III	≤1.3			V
Non-triggering gate voltage	V _{GD}	V _D =V _{DRM} T _j =125℃		≤0.2			V
Holding current	I _H	I _T =500mA, Fig.6		≤15	≤30	≤60	mA
Latching current	I _L	I _G =1.2I _{GT} , Fig.6	I -III	≤2.5	≤50	≤70	mA
			II	≤30	≤60	≤80	
Critical-rate of rise of commutation voltage	dV _D /dt	V _D =67%V _{DRM} , T _j =125℃		≤50	≤500	≤1000	V/μs

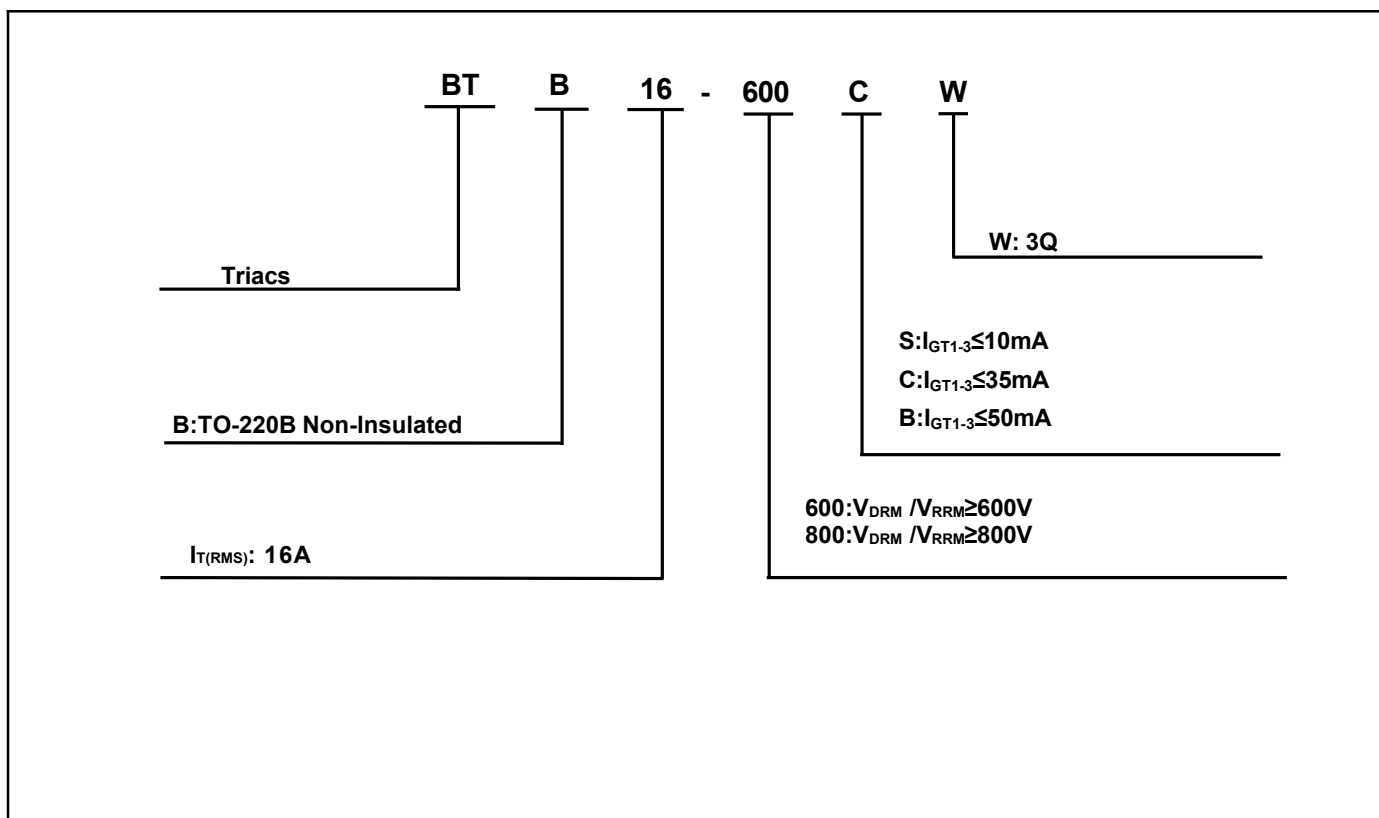
STATIC CHARACTERISTICS

On-state Voltage	V_{TM}	$I_{TM}=23A, t_p=380\mu s$, Fig.4		≤ 1.55			V
Repetitive Peak Off-State Current	I_{DRM}	$V_D=V_{DRM}=V_{RRM}$	$T_j=25^\circ C$	≤ 5	≤ 5	≤ 5	μA
Repetitive Peak Reverse Current	I_{RRM}		$T_j=125^\circ C$	≤ 1	≤ 1	≤ 1	mA

THERMAL RESISTANCES

Thermal resistance	$R_{th(j-c)}$	Junction to case	TYP.	1.2	$^\circ C/W$
	$R_{th(j-a)}$	Junction to ambient	TYP.	60	$^\circ C/W$

Ordering Information



Typical Characteristics

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

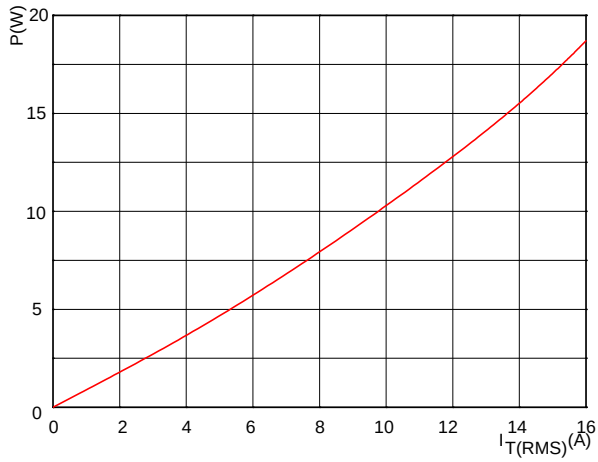


FIG.2: RMS on-state current versus case temperature (full cycle)

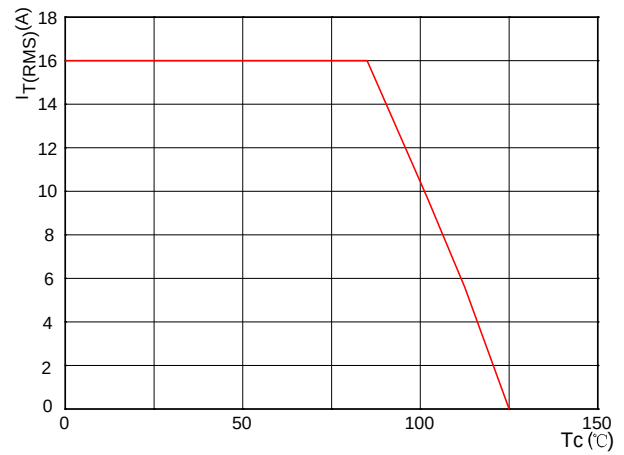


FIG.3: Surge peak on-state current versus number of cycles

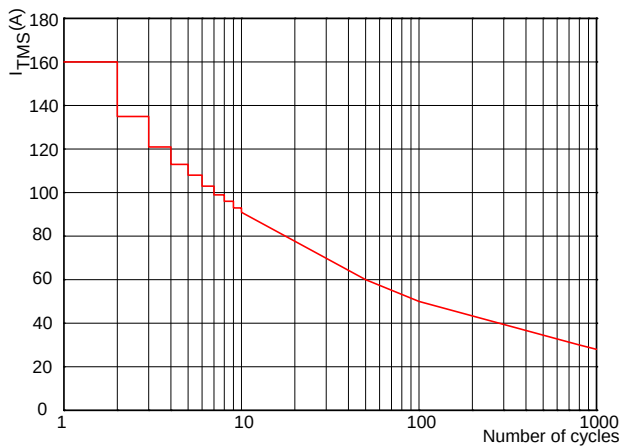


FIG.4: On-state characteristics (maximum values)

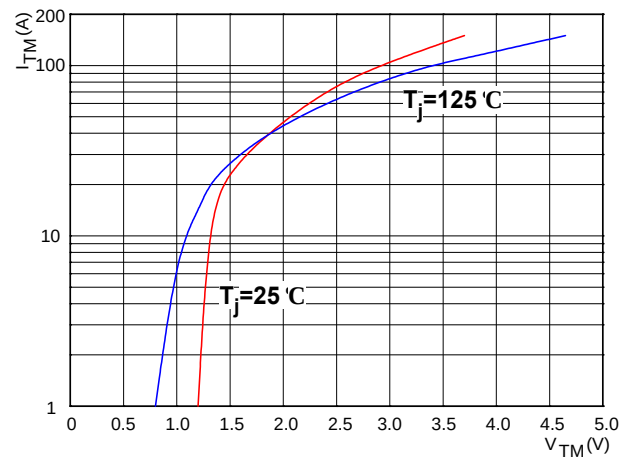


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$

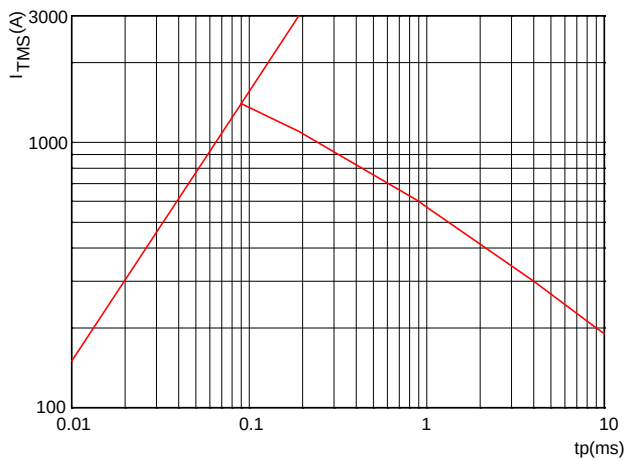
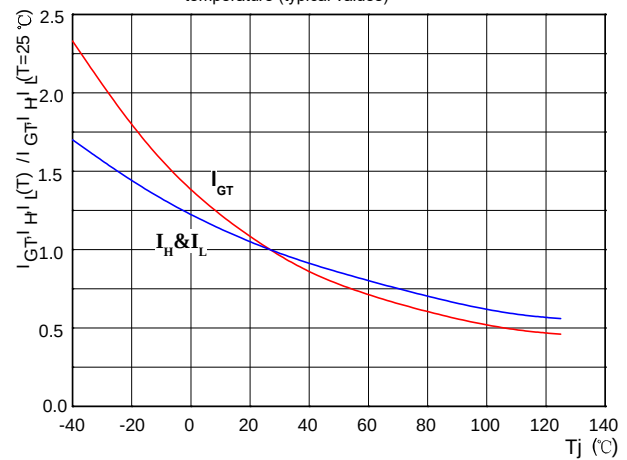
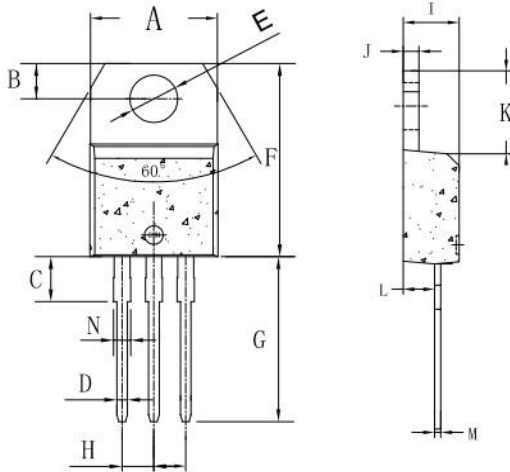


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



Package Information

TO-220B



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