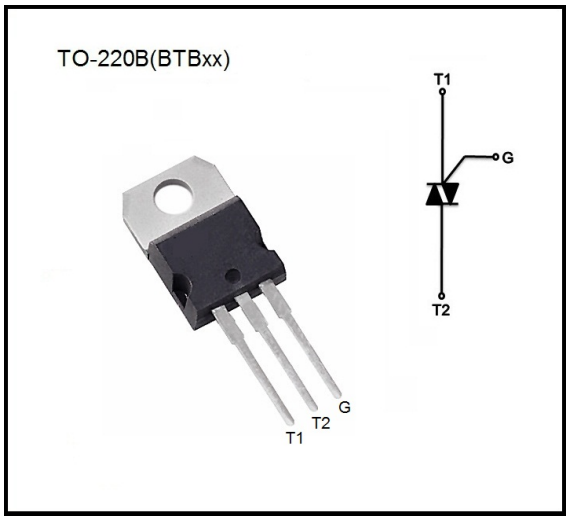
BTB04 Series

- **Description:**
  High current density due to double mesa trchnology;
  SIPOS and Glass Passivation.

- **Applications:**
  BTB04 series triacs is intended for general purpose applications where high surge current capability is required, such as lighting, corded power tools,industrial..

- **Features:**
  BTB04 are 4 Quandrants TRIACS,
  Blocking voltage to 600V
  On-state RMS current to 4A
  Non-repetitive peak on-state current to 30A



- **Absolute Maximum Ratings**

Symbol	Parameter	Conditions	Min	Max	Unit
V_{DRM}	Repetitive peak off-state voltage	T_J=25℃	600	800	V
V_{RRM}	Repetitive peak Reverse voltage	T_J=25℃	600	800	V
$I_{T(RMS)}$	RMSon-statecurrent (full sine wave) TO-220B	Tc=90℃	-	4	A
I_{TSM}	Non-repetitive peak On-state current (full cycle, T_J=25℃)	F=50Hz, t=10ms	-	30	A
		F=60Hz, t=16.7ms	-	31	A
I^2t	I^2t Value for fusing	Tp=10ms	-	5.1	A^2S
di/dt	Rate of rise of on-state current	I_G=2×I_{GT},t_r≤100ns, T_j=125℃	-	50	A/μs
I_{GM}	Peak gate current	t_p=20μs, T_j=125℃	-	4	A
$P_{G(AV)}$	Average gate power		-	1	W
T_{STG}	Storage temperature		-40	150	℃
T_J	Junction temperature		-40	125	℃

Electrical Characteristics

Symbol	Conditions	Quadrant		BTB04 SL	BTB04 A	Unit
I_{GT}	V_D=12V,R_L=30Ω	I-II-III	MAX	3	10	mA
		IV		5	25	
V_{GT}		ALL	MAX	1.3		V
V_{GD}	V_D=V_{DRM},R_L=3.3KΩ, T_j=125℃	ALL	MIN	0.2		V
I_L	I_T=1.2I_{GT}	I-III-IV	MAX	10	15	mA
		II	MAX	15	25	mA
I_H	I_T=100mA		MAX	10	15	mA
dv/dt	V_{DM}=67%V_{DRM},gate open,T_j=125℃		MIN	20	50	V/μs

Static Characteristics

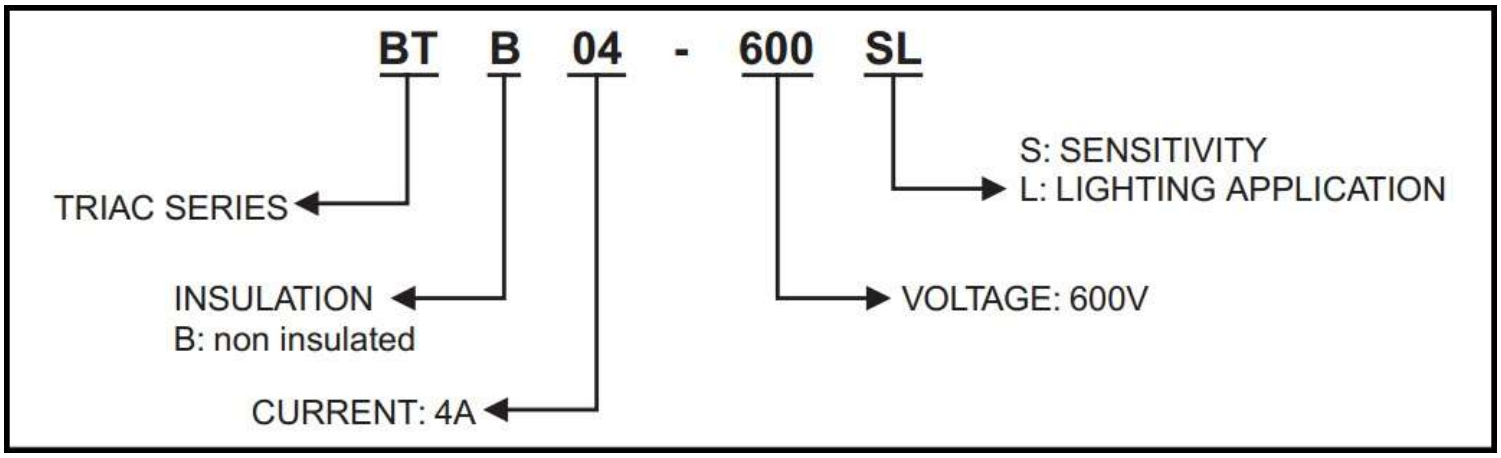
Symbol	Conditions	Quadrant		Value	Unit
V_{TM}	I_T=6A,tp=380μs	T_J=25℃	MAX	1.6	V
I_{DRM} I_{RRM}	V_D=V_{DRM},V_R=V_{RRM}	T_J=25℃	MAX	5	μA
		T_J=125℃	MAX	1	mA

Thermal Characteristics

Symbol	Parameter		Value	Unit
$R_{th(j-mb)}$	Junction to Case(AC)	TO-220B	3	℃/W
$R_{th(j-a)}$	Junction to am bient	TO-220B	60	℃/W

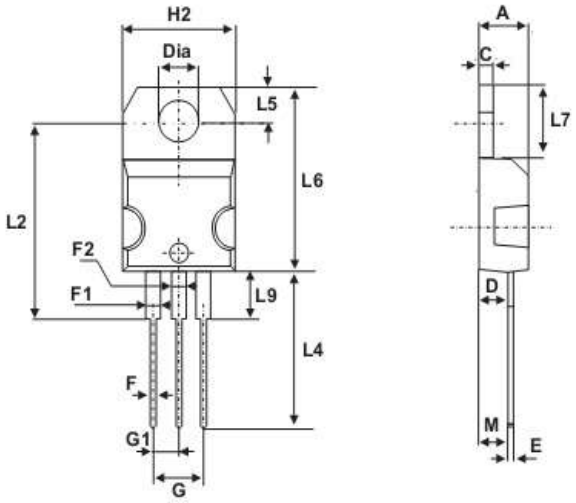
BTB04 Series

- **Ordering Information**



- **PackageOutline Dimensions**

TO-220B



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.40	4.60	0.173	0.181
C	1.23	1.32	0.048	0.051
D	2.40	2.72	0.094	0.107
E	0.49	0.70	0.019	0.027
F	0.61	0.88	0.024	0.034
F1	1.14	1.70	0.044	0.066
F2	1.14	1.70	0.044	0.066
G	4.95	5.15	0.194	0.202
G1	2.40	2.70	0.094	0.106
H2	10	10.40	0.393	0.409
L2	16.4 typ.		0.645 typ.	
L4	13	14	0.511	0.551
L5	2.65	2.95	0.104	0.116
L6	15.25	15.75	0.600	0.620
L7	6.20	6.60	0.244	0.259
L9	3.50	3.93	0.137	0.154
M	2.6 typ.		0.102 typ.	
Diam.	3.75	3.85	0.147	0.151

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

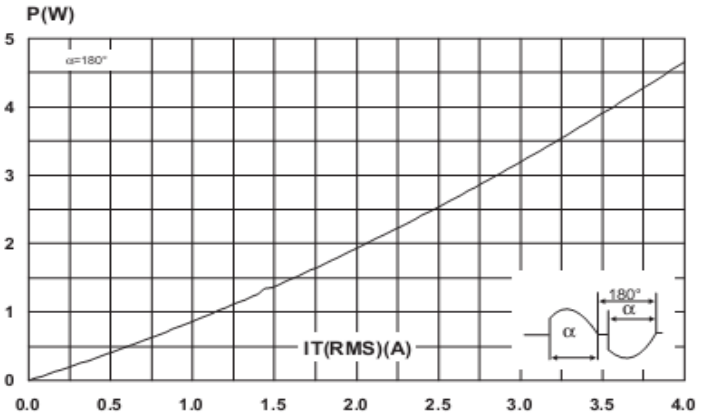


Fig. 2: RMS on-state current versus case temperature.

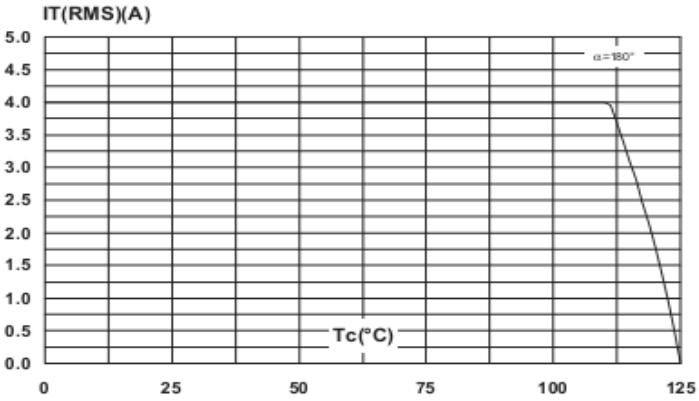


Fig. 3: Relative variation of thermal impedance versus pulse duration.

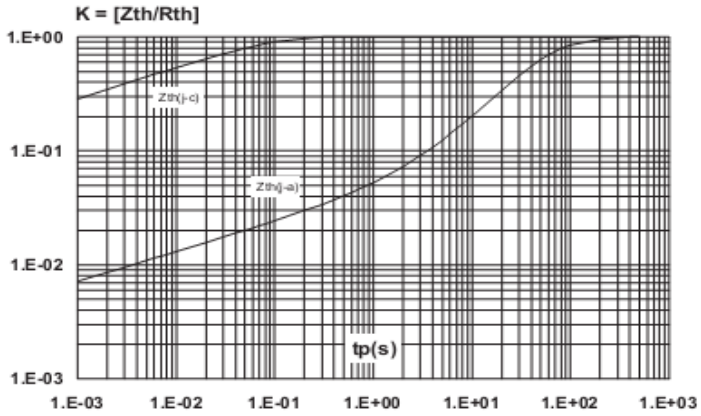


Fig. 4: On-state characteristics (maximum values)

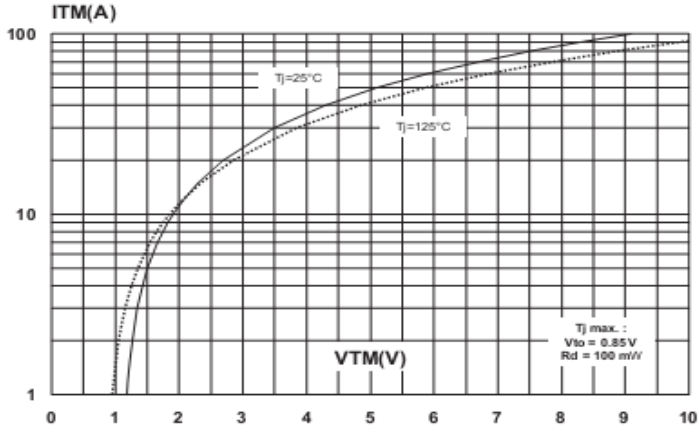


Fig. 5: Surge peak on-state current versus number of cycles.

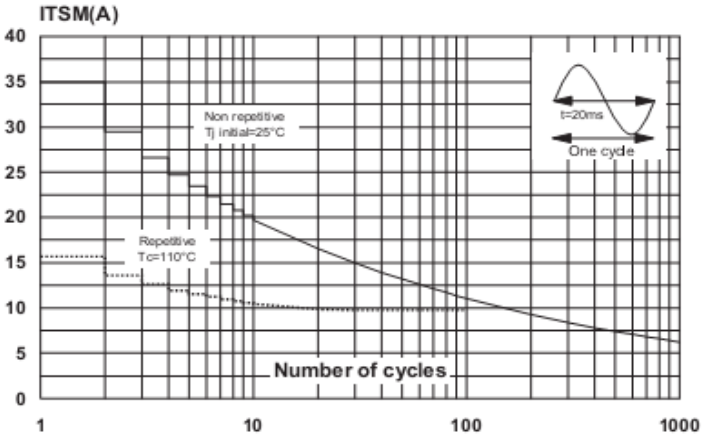


Fig. 6: Non repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10ms, and corresponding value of I^2t.