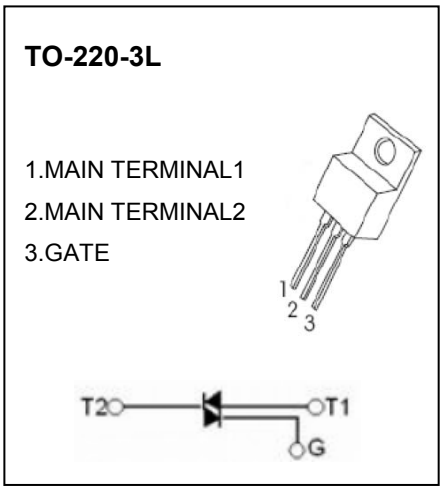
TO-220-3L Plastic-Encapsulate Thyristors

BTB12 3Q TRIAC

TO-220-3L



FEATURE

- High Blocking Voltage Capability
- High Surge Current Capability
- High Commutation Performances
- Uniform Gate Trigger Currents in Three Quadrants
- Medium Current Triac

APPLICATION

- General purpose AC switching
- Motor control, static relays, light dimmers and appliance motors speed controllers
- Bidirectional switching and phase control

MAXIMUM RATINGS (@T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{DRM}	Repetitive Peak Off-state Voltage	600/800	V
$I_{T(RMS)}$	RMS On-state Current	12	A
I_{TSM}	Non-repetitive Peak On-state Surge Current @ tp =20ms @ tp =16.7ms	120 126	A
I^2t	I^2t for Fusing @t=10ms	78	A^2s
dI/dt	Critical Rate of Rise of On-state Current	50	A/μs
I_{GM}	Peak Gate Current	4	A
V_{GM}	Peak Gate Voltage	5	V
P_{GM}	Peak Gate Power	20	W
$P_{G(AV)}$	Average Gate Power	1	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	62.5	℃/W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55~+150	℃

ELECTRICAL CHARACTERISTICS (@T_a=25℃ unless otherwise specified)

Parameter	Symbol		Test conditions	Min	Typ	Max	Unit
Repetitive peak off-state voltage	V_{DRM}(3)		I_D=10μA	600/800			V
Repetitive peak Off-state current	I_{DRM}		V_D=V_{DRM}			5	μA
Gate trigger current	I_{GT}(1) (3)		V_D=12V,R_L=30Ω			50	mA
Gate trigger voltage	V_{GT}		V_D=12V,R_L=30Ω			1.3	V
Latching current	I_L(3)	Ⅰ-Ⅲ	I_G=1.2 I_{GT}			70	mA
		Ⅱ				80	mA
Holding current	I_H(2) (3)		I_T=100mA			50	mA
Peak on-state voltage	V_{TM}(2)		I_T=17A			1.55	V
Critical rate of rise of off-state voltage	dV/dt *(2)		V_D=67%V_{DRM},gate open	20			V/μs
Gate controlled turn-on time	T_{gt} *		I_{TM}=6A,V_D=V_{DRM},I_G=0.1mA, dI_G/dt=5A/μs		2		μs

*Guaranteed by design, not subject to production testing.

1.Minimum I_{GT} is guaranteed at 5% of I_{GT} max.

2.for both polarities of A2 referenced to A1.

3. CLASSIFICATION of BTB12

RANK		BTB12-800SW	BTB12-600SW	BTB12-800CW	BTB12-600CW	BTB12-800BW	BTB12-600BW	Unit
V_{DRM}		>800	>600	>800	>600	>800	>600	V
I_{GT}	Ⅰ,Ⅱ,Ⅱ	<10		<35		<50		mA
I_H		<15		<35		<50		
I_L	Ⅰ, Ⅲ	<25		<50		<70		
	Ⅱ	<30		<60		<80		