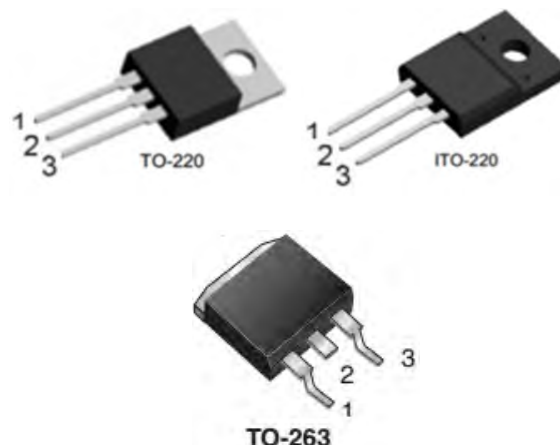
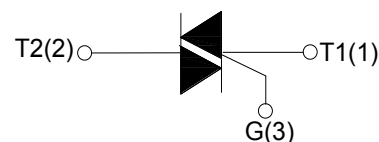


**DESCRIPTION:**

BTB20 series triacs, 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 especially recommended for use on inductive load.

**MAIN FEATURES**

Symbol	Value	Unit
V_{DRM}/V_{RRM}	600 and 800	V
$I_{T(RMS)}$	20	A

**ABSOLUTE MAXIMUM RATINGS**

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{stg}	-40-150	°C
Operating junction temperature range		T_j	-40-125	°C
Repetitive peak off-state voltage ($T_j=25^{\circ}\text{C}$)		V_{DRM}	600/800	V
Repetitive peak reverse voltage ($T_j=25^{\circ}\text{C}$)		V_{RRM}	600/800	V
RMS on-state current	TO-220(Non-Ins) ($T_C=90^{\circ}\text{C}$)	$I_{T(RMS)}$	20	A
	TO-220F(Ins) ($T_C=75^{\circ}\text{C}$)			
	TO-263 ($T_C=65^{\circ}\text{C}$)			



Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	200	A
I^2t value for fusing (tp=10ms)	I^2t	200	A ² s
Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	dI/dt	100	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)

Symbol	Test Condition	Quadrant		Value		Unit
				CW	BW	
I_{GT}	$V_D = 12V$ $R_L = 33\Omega$	I - II - III	MAX	35	50	mA
V_{GT}		I - II - III	MAX	1.5		V
V_{GD}	$V_D = V_{DRM}$ $T_j = 125^\circ\text{C}$ $R_L = 3.3K\Omega$	I - II - III	MIN	0.2		V
I_L	$I_G = 1.2I_{GT}$	I - III	MAX	50	70	mA
		II		70	80	
I_H	$I_T = 100\text{mA}$		MAX	50	60	mA
dV/dt	$V_D = 2/3V_{DRM}$ Gate Open $T_j = 125^\circ\text{C}$		MIN	400	1000	V/ μ s

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM} = 28A$ tp=380 μ s	$T_j = 25^\circ\text{C}$	1.5	V
I_{DRM}	$V_D = V_{DRM}$ $V_R = V_{RRM}$	$T_j = 25^\circ\text{C}$	5	μ A
I_{RRM}		$T_j = 125^\circ\text{C}$	2.5	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220(Non-Ins)	1.1	$^\circ\text{C/W}$
		ITO-220(Ins)	2.1	
		TO-263	2.5	

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

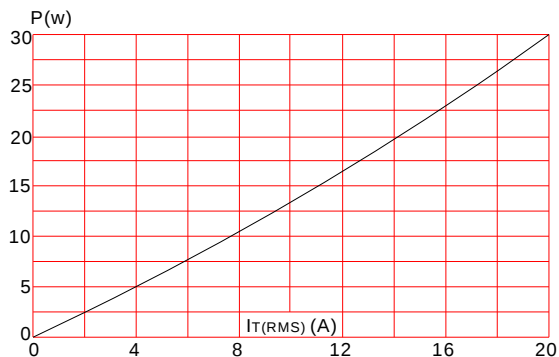


FIG.2: RMS on-state current versus case temperature

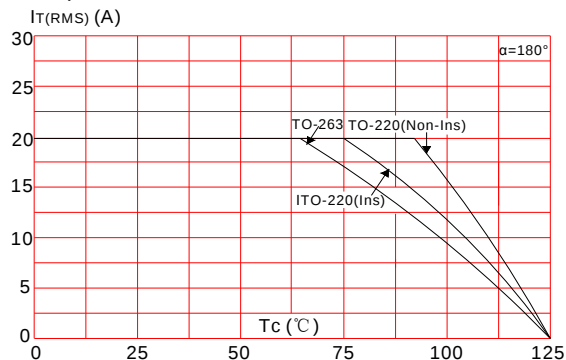


FIG.3: Surge peak on-state current versus number of cycles

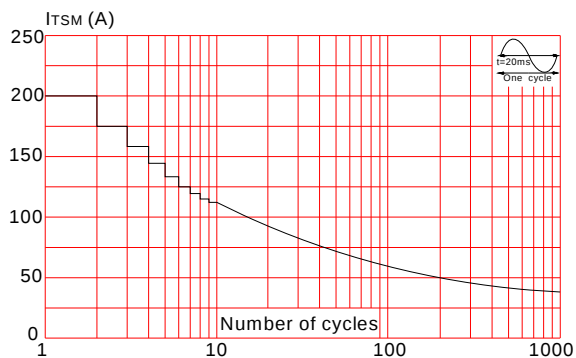


FIG.4: On-state characteristics (maximum values)

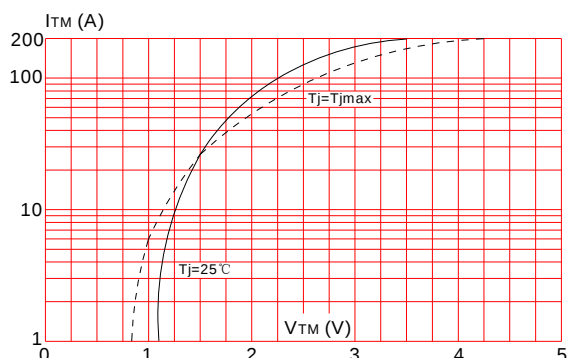


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of I^2t ($di/dt < 100A/\mu s$)

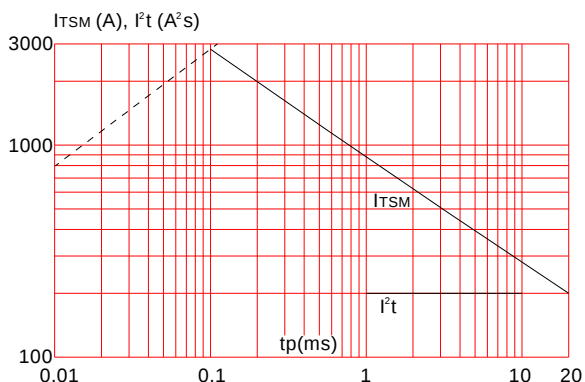
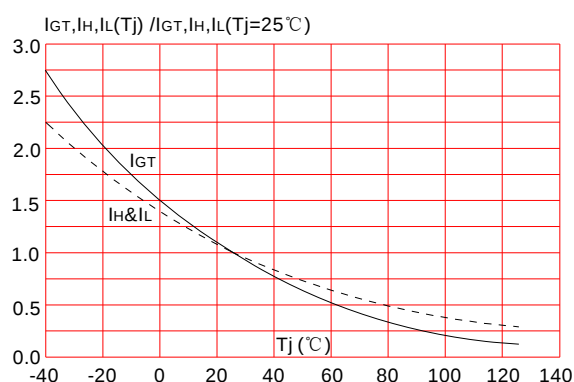
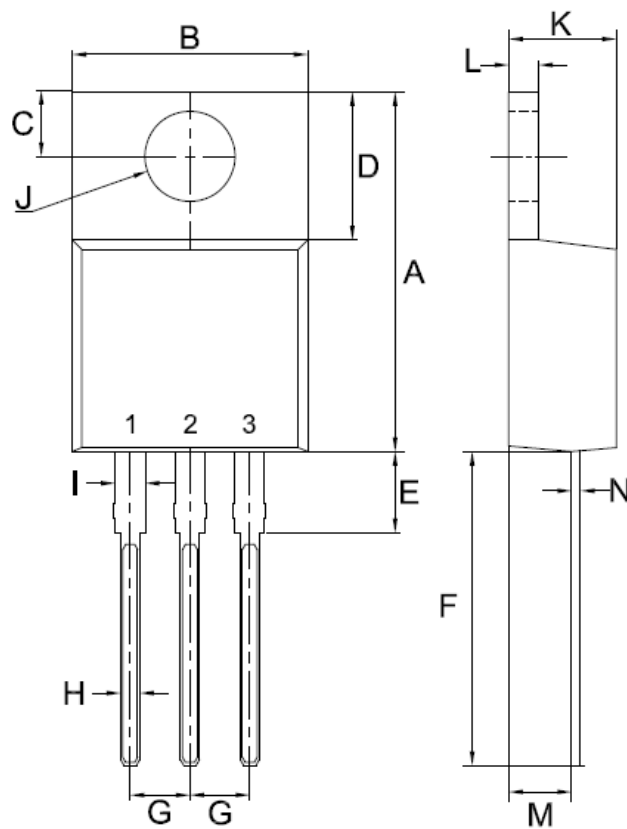


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



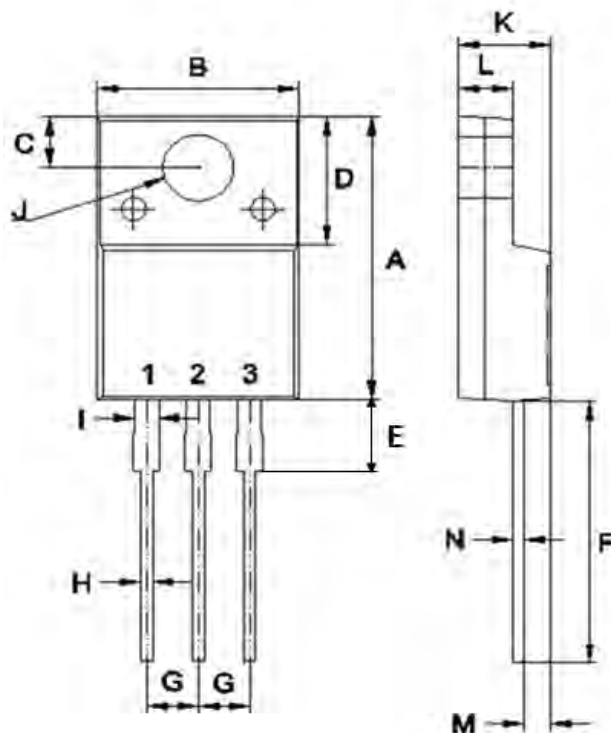


TO-220 Mechanical Drawing



TO-220AB		
Unit:mm		
DIM	MIN	MAX
A	14.80	15.80
B	9.57	10.57
C	2.54	2.94
D	5.80	6.80
E	2.95	3.95
F	12.70	13.40
G	2.34	2.74
H	0.51	1.11
I	0.97	1.57
J	3.54 ϕ	4.14 ϕ
K	4.27	4.87
L	1.07	1.47
M	2.03	2.92
N	0.30	0.64

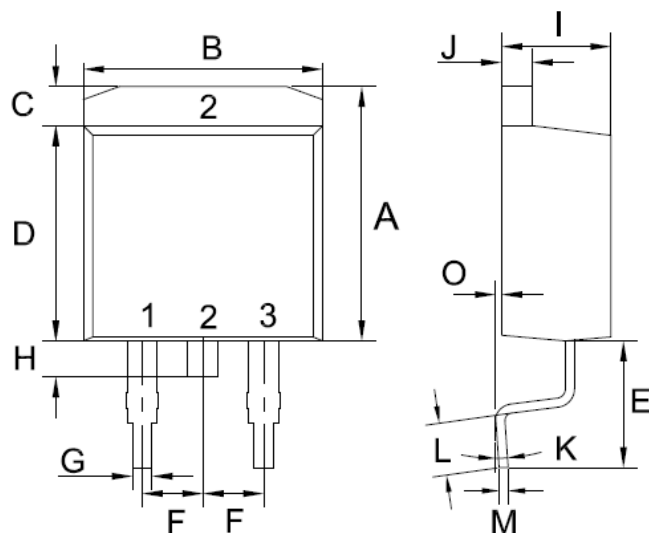
ITO-220 Mechanical Drawing



ITO-220AB Unit:mm		
DIM	MIN	MAX
A	14.50	15.50
B	9.50	10.50
C	2.50	2.90
D	6.30	7.30
E	3.30	4.30
F	13.00	14.00
G	2.35	2.75
H	0.30	0.80
I	0.90	1.50
J	3.20	3.80
K	4.24	4.84
L	2.52	2.92
M	1.09	1.49
N	0.47	0.64



TO-263 Mechanical Drawing



TO-263 (D ² PAK)		
Unit:mm		
DIM	MIN	MAX
A	10.44	10.84
B	9.81	10.21
C	1.44	1.84
D	8.80	9.20
E	4.46	4.66
F	2.44	2.64
G	0.61	1.01
H	0.70	1.30
I	4.27	4.87
J	1.07	1.47
K	0°	8°
L	2.10	2.50
M	0.30	0.46
O	0	0.25