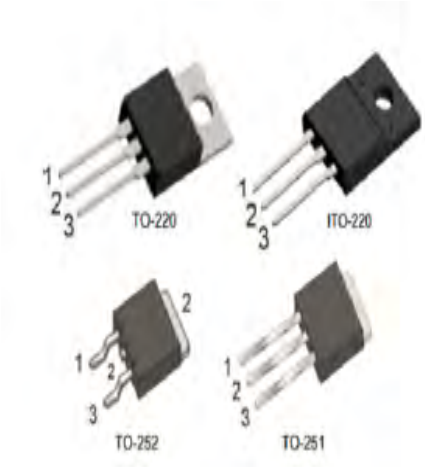
DESCRIPTION:

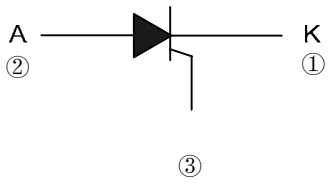
Passivated thyristors in a plastic envelope, intended for use in applications requiring high bidirectional blocking voltage capability and high thermal cycling performance. Typical applications include motor control, industrial and domestic lighting, heating and static switching.



Ordering Information

Part No.	Package	Packing
BT152-600R	TO-220	50pcs / Tube
BT152-800R	TO-220	50pcs / Tube
BT152F-600R	ITO-220	50pcs / Tube
BT152F-800R	ITO-220	50pcs / Tube
BT152P-600R	TO-251	75pcs / Tube
BT152P-800R	TO-251	75pcs / Tube
BT152D-600R	TO-252	2.5Kpcs / 13" Reel
BT151D-800R	TO-252	2.5Kpcs / 13" Reel
BT152D-600R	TO-252	75pcs / Tube
BT152D-800R	TO-252	75pcs / Tube

Symbol



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{stg}	-40-150	℃
Operating junction temperature range		T_j	-40-125	℃
Repetitive peak off-state voltage(T_j=25℃)		V_{DRM}	600/800	V
Repetitive peak reverse voltage(T_j=25℃)		V_{RRM}	600/800	V
RMS on-state current	TO-251 /TO-252 (T_C=103℃)	$I_{T(RMS)}$	16	A
	TO-220(Ins) (T_C=85℃)			

RMS on-state current	ITO-220(Ins) (T_C=90℃)	$I_{T(RMS)}$	16	A
Non repetitive surge peak on-state current (tp=10ms)		I_{TSM}	190	A
I^2t value for fusing (tp=10ms)		I^2t	180	A^2s
Critical rate of rise of on-state current (I_G=2×I_{GT})		dI/dt	50	A/μs
Peak gate current		I_{GM}	4	A
Average gate power dissipation		$P_{G(AV)}$	1	W
Peak gate power		P_{GM}	5	W

ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	V_D=12V R_L=33Ω	-	-	25	mA
V_{GT}		-	-	1.0	V
V_{GD}	V_D=V_{DRM} T_j=125℃ R_L=3.3KΩ	0.2	-	-	V
I_L	I_G=1.2I_{GT}	-	-	60	mA
I_H	I_T=500mA	-	-	40	mA
dV/dt	V_D=2/3V_{DRM} Gate Open T_j=125℃	200	-	-	V/μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	I_{TM}=32A tp=380μs	T_j=25℃	1.6	V
I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}	T_j=25℃	5	μA
I_{RRM}		T_j=125℃	1	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220(Ins)	2.3	℃/W
		ITO-220(Ins)	2.1	
		TO-251/ TO-252	1.4	

TYPICAL CHARACTERISTICS

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

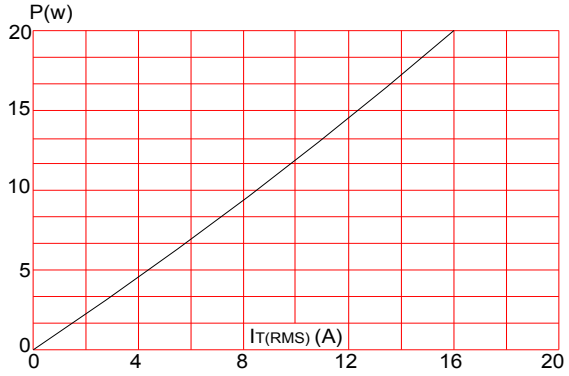


FIG.2: RMS on-state current versus case temperature

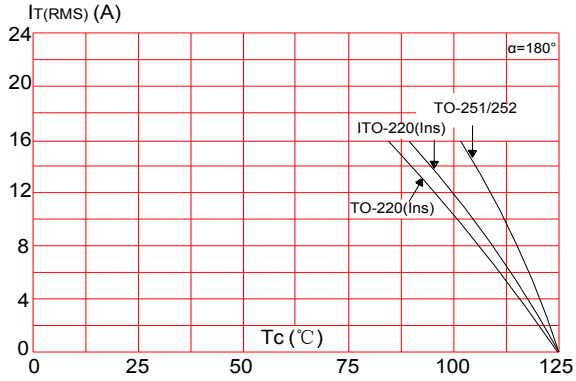


FIG.3: Surge peak on-state current versus number of cycles

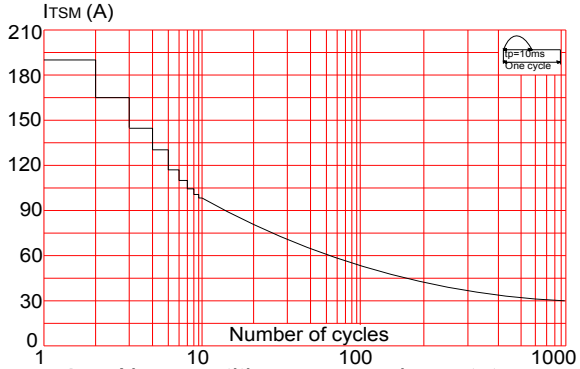


FIG.4: On-state characteristics (maximum values)

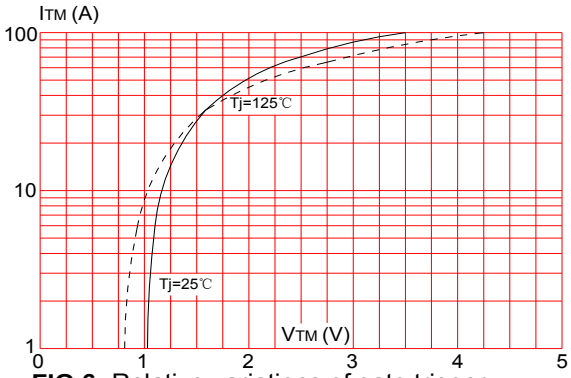


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms, and corresponging value of I^2t (dI/dt < 50A/μs)

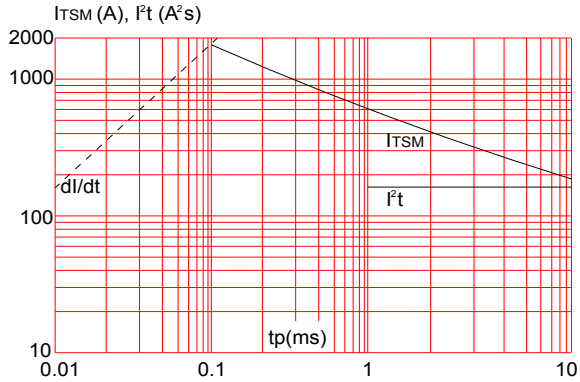
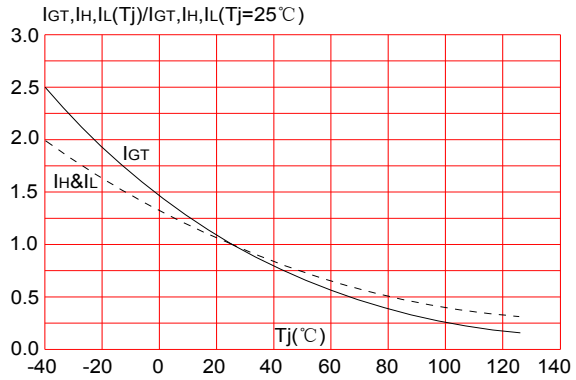
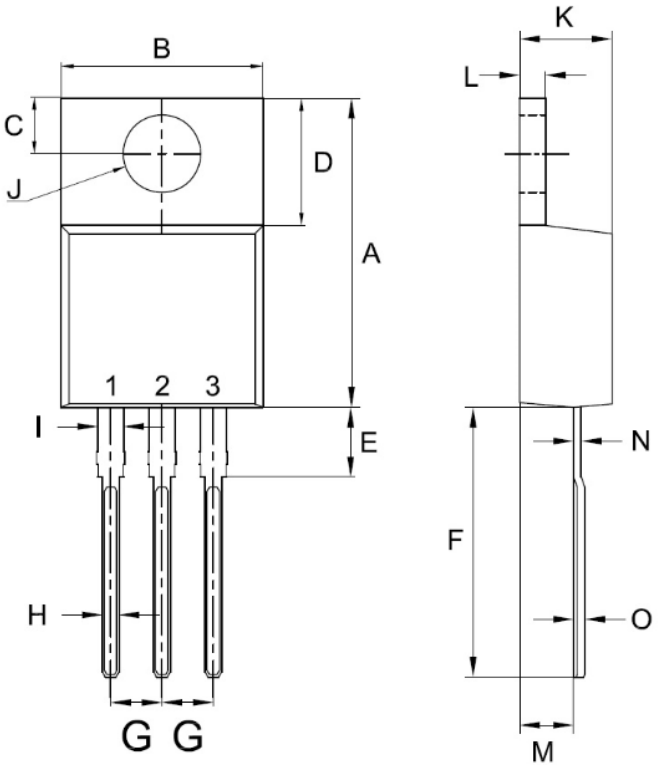


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

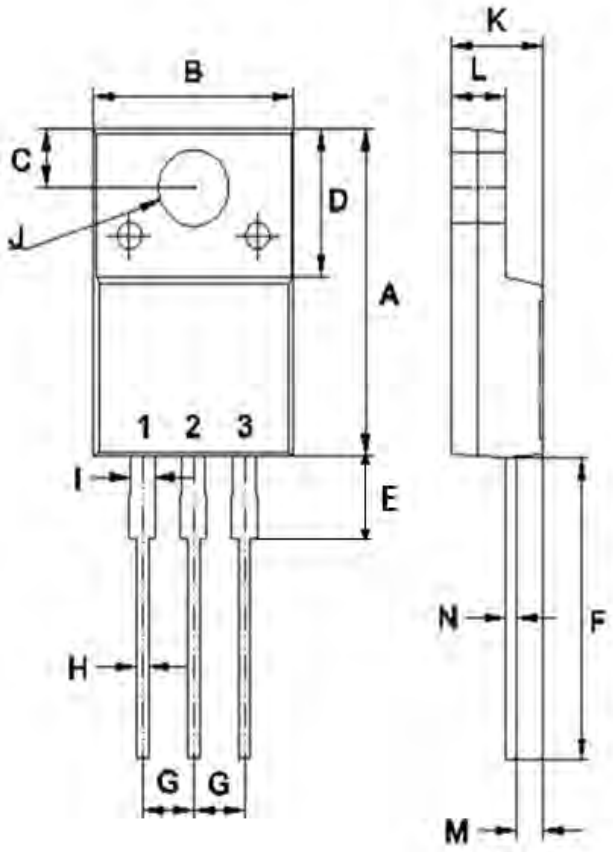


TO-220 Mechanical Drawing



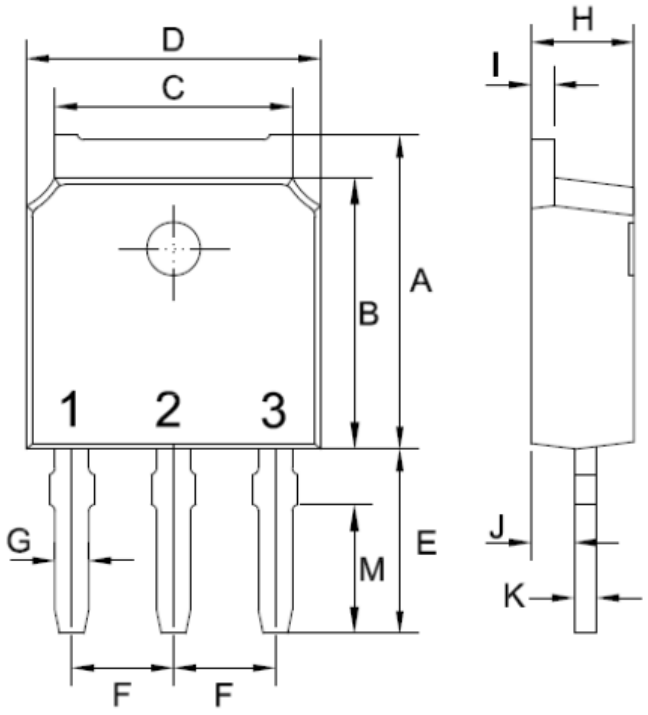
TO-220AB Unit:mm		
DIM	MIN	MAX
A	14.80	15.80
B	9.57	10.57
C	2.54	2.94
D	5.80	6.80
E	2.95	3.95
F	12.70	13.40
G	2.34	2.74
H	0.51	1.11
I	0.97	1.57
J	3.54ϕ	4.14ϕ
K	4.27	4.87
L	1.07	1.47
M	2.65	3.05
N	0.30	0.46
O	0.48	0.64

ITO-220 Mechanical Drawing



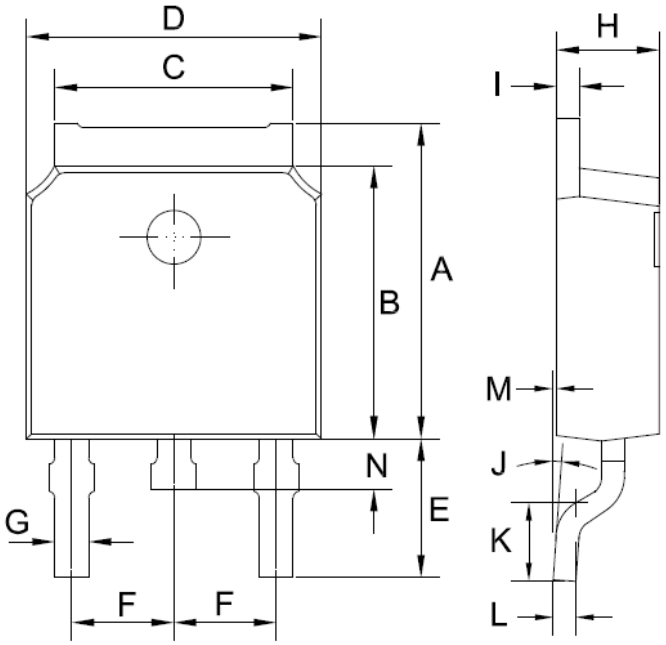
ITO-220AB Unit:mm		
DIM	MIN	MAX
A	14.50	15.50
B	9.50	10.50
C	2.50	2.90
D	6.30	7.30
E	3.30	4.30
F	13.00	14.00
G	2.35	2.75
H	0.30	0.90
I	0.90	1.50
J	3.20	3.80
K	4.24	4.84
L	2.52	2.92
M	1.09	1.49
N	0.47	0.64

TO-251 Mechanical Drawing



TO-251(IPAK) Unit:mm		
DIM	MIN	MAX
A	6.85	7.25
B	5.90	6.30
C	5.13	5.53
D	6.40	6.80
E	3.95	4.35
F	2.19	2.39
G	0.45	0.85
H	2.20	2.40
I	0.41	0.61
J	0.71	1.31
K	0.41	0.61
M	2.96	3.16

TO-252 Mechanical Drawing



TO-252 (DPAK) Unit:mm		
DIM	MIN	MAX
A	6.85	7.25
B	5.90	6.30
C	5.13	5.53
D	6.40	6.80
E	2.90	3.30
F	2.19	2.39
G	0.45	0.85
H	2.20	2.40
I	0.41	0.61
J	0°	8°
K	1.45	1.85
L	0.41	0.61
M	0.00	0.12
N	0.60	1.00