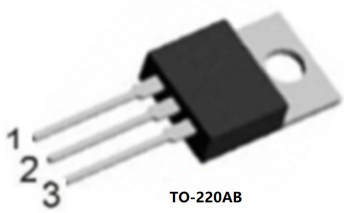
BT152-XXXR

20A Silicon Controlled Rectifiers

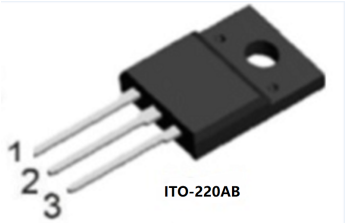
Description

The BT152 is a thyristor, it uses LGE's advanced technology to provide customers with high bidirectional blocking voltage capability and high thermal cycling performance, etc.

The BT152 is suitable for motor control, industrial, static switching, heating and domestic lighting, etc.



TO-220AB

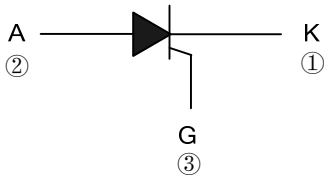


ITO-220AB

Features

* High bidirectional blocking voltage capability
* High thermal cycling performance

Symbol



Ordering Information

Part No.	Package	Packing
BT152-400R	TO-220AB	50pcs / Tube
BT152-650R	TO-220AB	50pcs / Tube
BT152-800R	TO-220AB	50pcs / Tube
BT152F-400R	ITO-220AB	50pcs / Tube
BT152F-650R	ITO-220AB	50pcs / Tube
BT152F-800R	ITO-220AB	50pcs / Tube

BT152-XXXR

20A Silicon Controlled Rectifiers

ABSOLUTE MAXIMUM RATING (T_J = 25°C, unless otherwise stated)

PARAMETER		SYMBOL	RATINGS	UNIT
Repetitive Peak Off-State Voltages	BT152(F)-400R	V_{DRM}, V_{RRM}	450	V
	BT152(F)-650R		650	
	BT152(F)-800R		800	
Average On-State Current (half sine wave; T_{mb} ≤103°C)		$I_{T(AV)}$	13	A
RMS on-State Current (all conduction angles)		$I_{T(RMS)}$	20	A
Non-Repetitive Peak On-State Current (half sine wave; T_J = 25 °C prior to surge)	t = 10 ms	I_{TSM}	200	A
	t = 8.3 ms		220	
I^2t for Fusing (t = 10 ms)		I^2t	200	A^2s
Repetitive Rate of Rise of On-State Current After Triggering (I_{TM} = 50 A; I_G = 0.2 mA; dI_G/dt = 0.2 mA/μs)		d_{IT}/dt	200	A/μs
Peak Gate Current		I_{GM}	5	A
Peak Gate Voltage		V_{GM}	5	V
Peak Reverse Gate Voltage		V_{RGM}	5	V
Peak Gate Power		P_{GM}	20	W
Average Gate Power (Over any 20 ms period)		$P_{G(AV)}$	0.5	W
Operating Junction Temperature		T_J	125	°C
Storage Temperature		T_{STG}	-40 ~150	°C

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

THERMAL DATA

PARAMETER		SYMBOL	MIN	TYP	MAX	UNIT
Junction to Ambient	In Free Air	θ_{JA}		60		K/W
Thermal Resistance Junction to Mounting Base		θ_{JMB}			1.1	K/W

STATIC CHARACTERISTICS (T_J = 25°C, unless otherwise stated)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Gate Trigger Current	I_{GT}	V_D = 12 V, I_T = 0.1 A		4	5	mA
Latching Current	I_L	V_D = 12 V, I_{GT} = 0.1 A		13	80	mA
Holding Current	I_H	V_D = 12 V, I_{GT} = 0.1 A		12	60	mA
On-State Voltage	V_T	I_T=40A		1.4	1.75	V
Gate Trigger Voltage	V_{GT}	V_D = 12 V, I_T = 0.1 A V_D = $V_{DRM(max)}$, I_T = 0.1 A, T_J = 125 °C	 0.25	0.7 0.4	1.5	V
Off-State Leakage Current	I_D , I_R	V_D = $V_{DRM(max)}$, V_R = $V_{RRM(max)}$,T_J = 125°C		0.2	1.0	mA

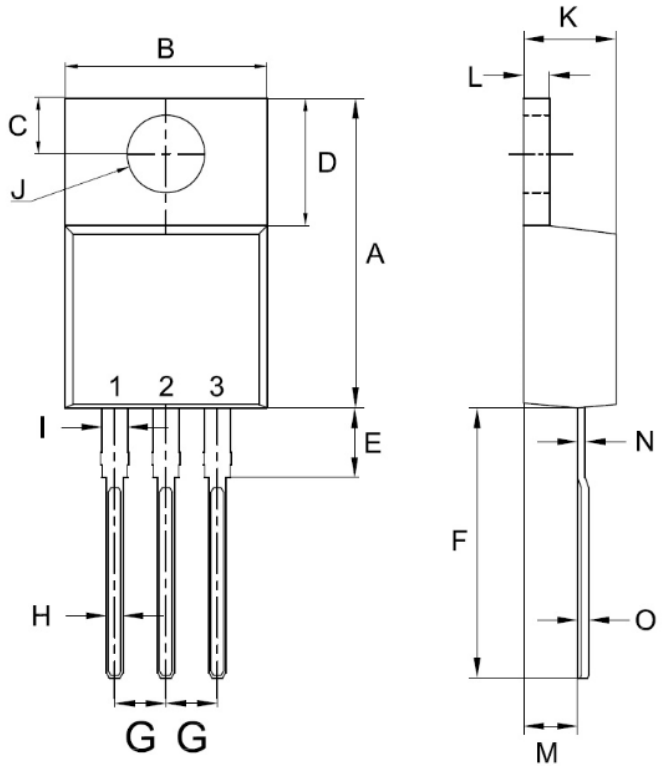
DYNAMIC CHARACTERISTICS (T_J = 25°C, unless otherwise stated)

PARAMETER	SYMBOL	CONDITIONS	MIN	MAX	UNIT	
Critical Rate of Rise of Off-State Voltage	dV_D/dt	V_{DM} = 67% $V_{DRM(max)}$, T_J = 125 °C, exponential waveform;Gate open circuit	200	300		V/μs
Gate Controlled Turn-on Time	t_{GT}	I_{TM} = 40 A, V_D = $V_{DRM(max)}$, I_G = 0.1 A, dI_G/dt = 5 A/μs		2		μs
Circuit Commutated Turn-off tIme	t_Q	I_{TM} = 50 A, V_R = 25 V, dI_{TM}/dt = 30 A/μs, dV_D/dt = 50 V/μs, R_{GK} = 100 Ω		70		μs

BT152-XXXR

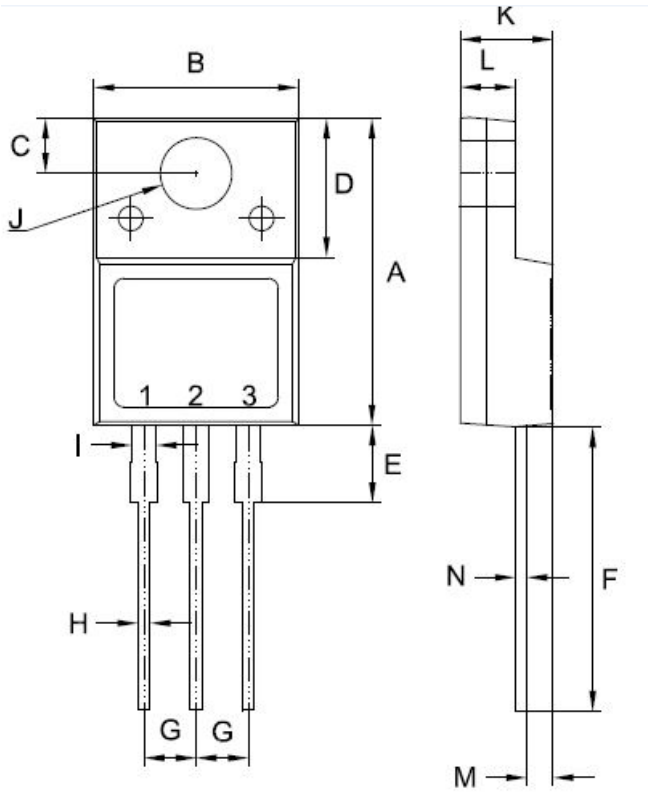
20A Silicon Controlled Rectifiers

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	0.63