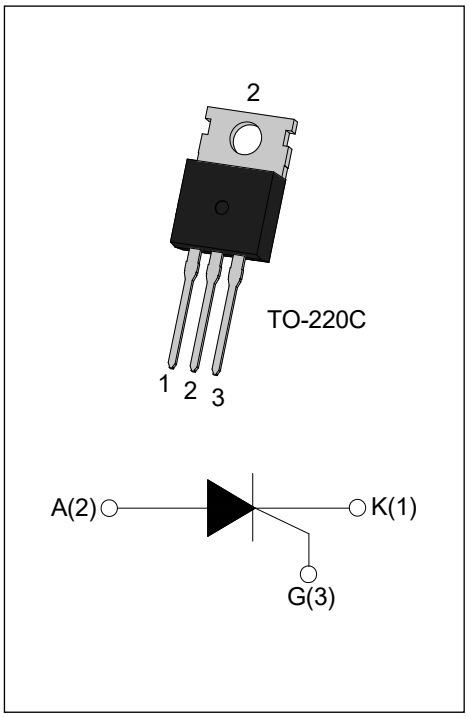
BT152 20A SCRs

Rev.1

DESCRIPTION:

BT152 with high ability to withstand theshock loading of large current, providehigh dv/dt rate with strong resistanceto electromagnetic interference. They are especially recommended for use on solid state relay, motorcycle, power charger, T-tools etc. complying with UL standards (File ref: E252906).Package TO-220C is RoHS compliant.(2011/65/EU)



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	20	A
V_{DRM}/ V_{RRM}	800	V
I_{GT}	≤15	mA

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}	800	V
Repetitive peak reverse voltage(T_j=25℃)		V_{RRM}	800	V
Non repetitive surge peak Off-state voltage		V_{DSM}	V_{DRM} +100	V
Non repetitive peak reverse voltage		V_{RSM}	V_{RRM} +100	V
RMS on-state current	TO-220C (T_C=105℃)	$I_{T(RMS)}$	20	A
Non repetitive surge peak on-state current (tp=10ms)		I_{TSM}	200	A
I^2t value for fusing (tp=10ms)		I^2t	200	A^2s
Repetitive rate of rise of on-state current after triggering (dI_G/dt=0.2A/μs)		dI_T/dt	200	A/μs
Peak gate current		I_{GM}	5	A

Average gate power dissipation	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	20	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	-	5	15	mA
V_{GT}		-	0.7	1.3	V
V_{GD}	V_D=V_{DRM} T_j=125℃ R_L=3.3KΩ	0.2	-	-	V
I_L	I_G=1.2I_{GT}	-	20	70	mA
I_H	I_T=500mA	-	18	60	mA
dv/dt	V_D=2/3V_{DRM} Gate Open T_j=125℃	250		-	V/μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	I_{TM}=40A tp=380μs	T_j=25℃	1.7	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-220C	1.1	℃/W

MARKING

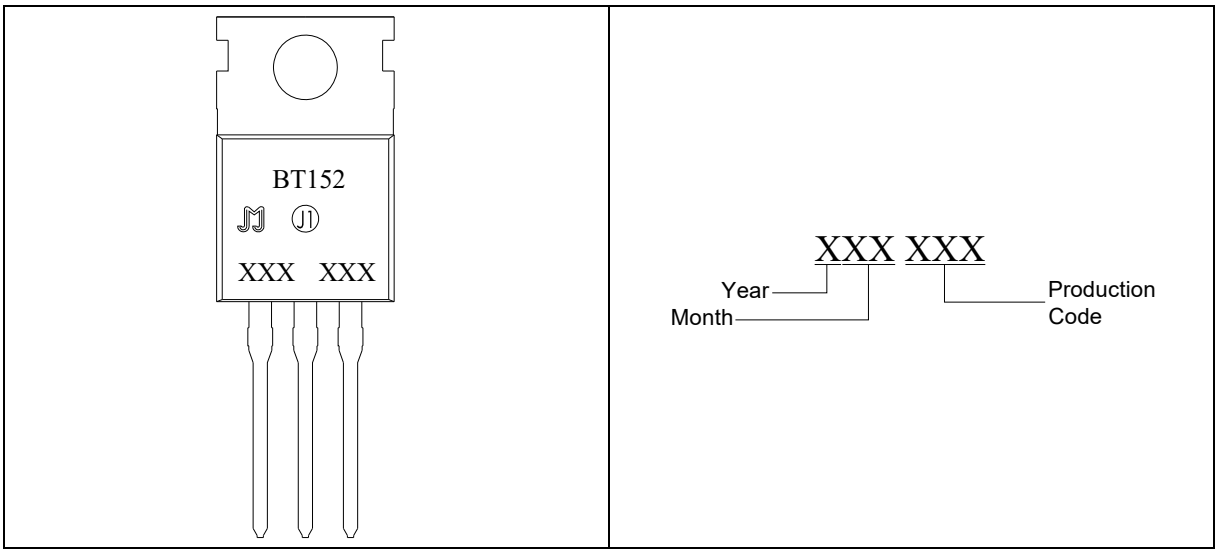


FIG.1: Maximum power dissipation versus RMS on-state current

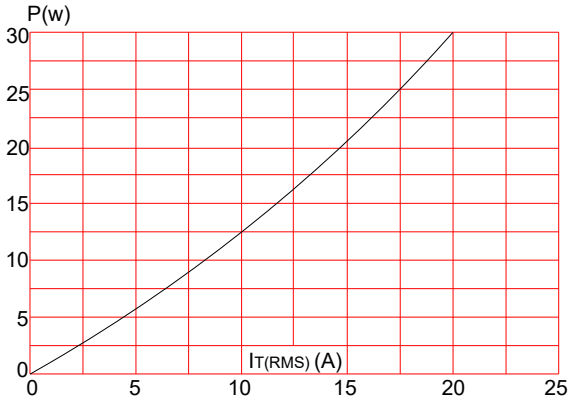


FIG.2: RMS on-state current versus case temperature

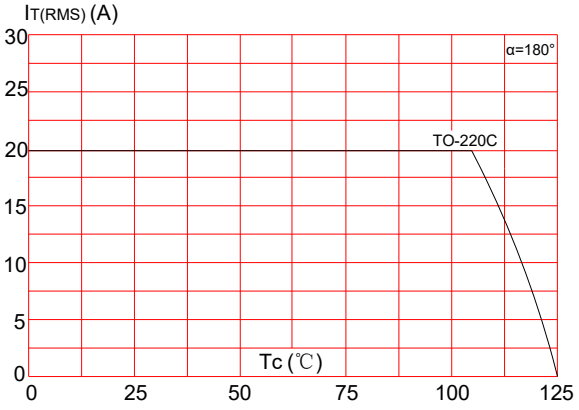


FIG.3: Surge peak on-state current versus number of cycles

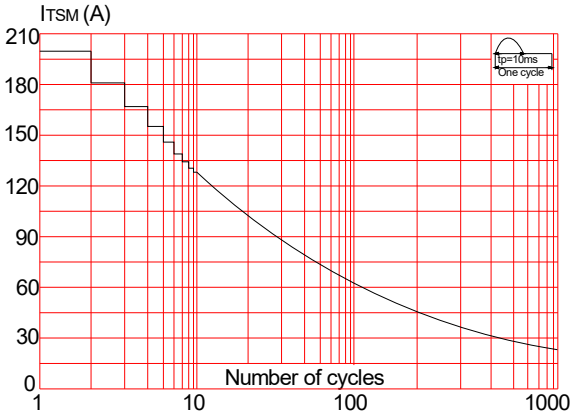


FIG.4: On-state characteristics (maximum values)

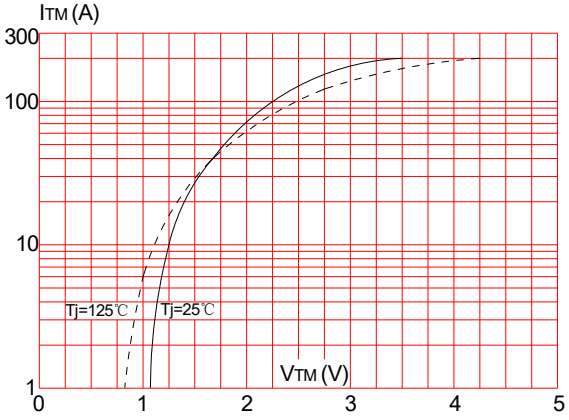


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms, and corresponging value of I^2t (dI_T/dt < 200A/μs)

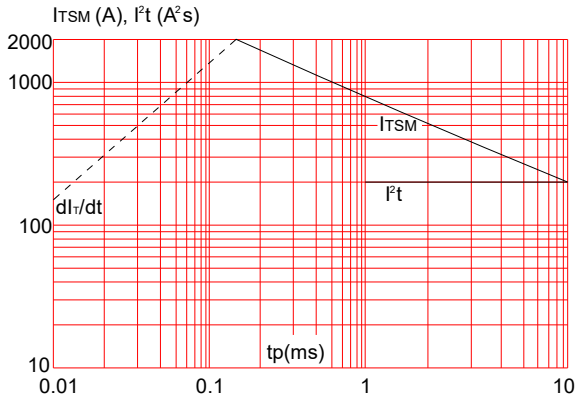
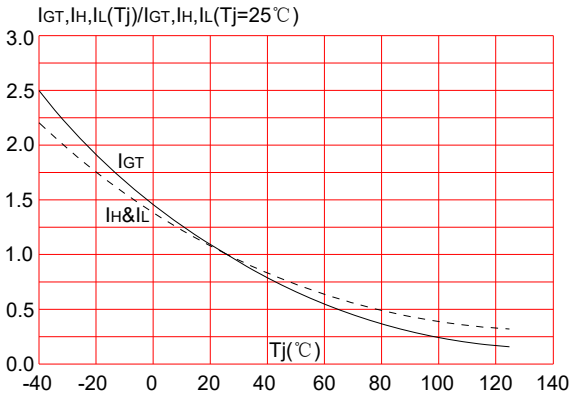


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



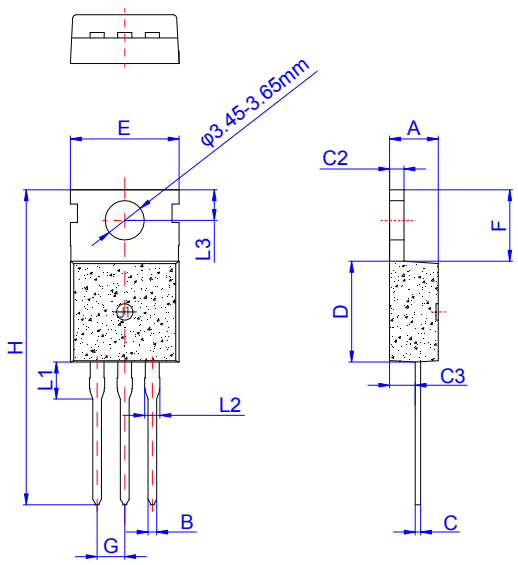
ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
BT152	**800**	**＜15**	**TO-220C**	**50**	**Tube**

Document Revision History

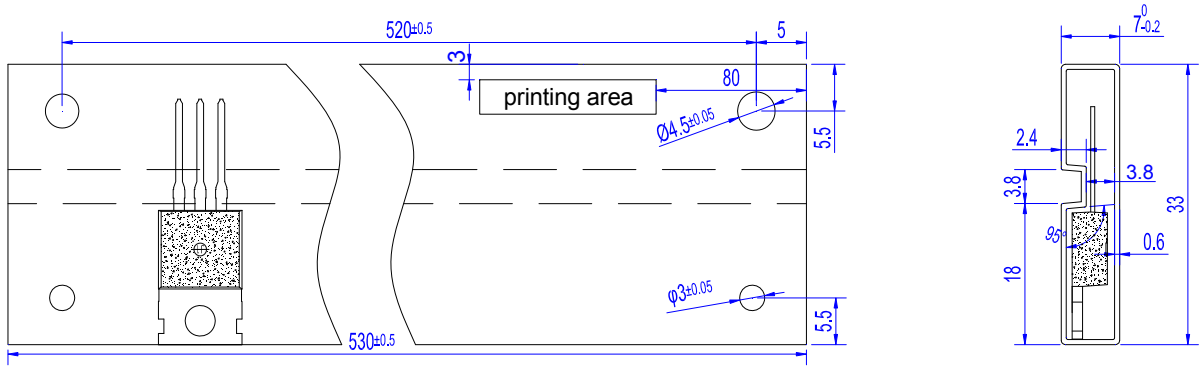
Date	Revision	Changes
Mar 21, 2022	1	Last update

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.70		0.90	0.028		0.035
C	0.45		0.60	0.018		0.024
C2	1.23		1.32	0.048		0.052
C3	2.20		2.60	0.087		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.3	0.390		0.406
F	6.30		6.90	0.248		0.272
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.39			0.133	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116

DELIVERY MODE



PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220C	TUBE	50	1,000	5,000

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