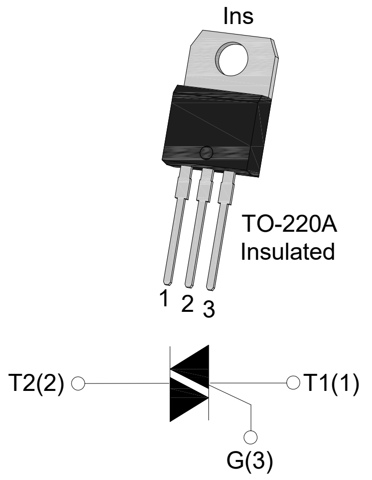
JST20A-800BW 20A TRIACs

Rev.1

DESCRIPTION:

With high ability to withstand the shock loading of large current, JST20A-800BW triacs provide high dv/dt rate with strong resistance to electromagnetic interface. With high commutation performances, especially recommended for use on inductive load. From all three terminals to external heatsink, JST20A -800BW provide a rated insulation voltage of 2500 V_{RMS},complying with UL standards (File ref: E252906). PackagesTO-220A is RoHS compliant. (2011/65/EU)



MAIN FEATURES

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

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-220A(Ins) (T_C=70℃)	$I_{T(RMS)}$	20	A
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^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}	10	W

ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

Symbol	Test Condition	Quadrant		Value	Unit
I_{GT}	V_D =12V R_L =33Ω	Ⅰ-Ⅱ-Ⅲ	MAX	50	mA
V_{GT}		Ⅰ-Ⅱ-Ⅲ	MAX	1.3	V
V_{GD}	V_D =V_{DRM} T_j =125℃ R_L =3.3KΩ	Ⅰ-Ⅱ-Ⅲ	MIN	0.2	V
I_L	I_G =1.2I_{GT}	Ⅰ-Ⅲ	MAX	70	mA
		Ⅱ		90	
I_H	I_T =100mA		MAX	60	mA
dv/dt	V_D=2/3V_{DRM} Gate Open T_j =125℃		MIN	1000	V/μs

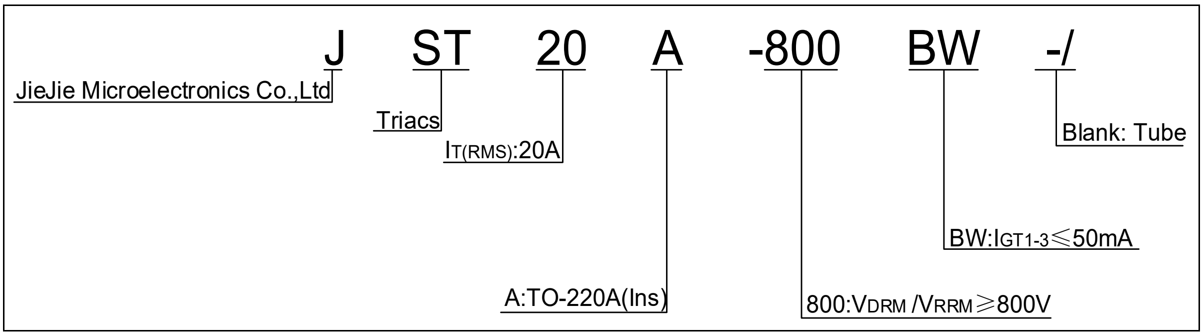
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	I_{TM} =28A tp=380μs	T_j=25℃	1.5	V
V_{TO}	Threshold voltage	T_j=125℃	0.88	V
Rd	Dynamic resistance	T_j=125℃	14.72	mΩ
I_{DRM}	V_D =V_{DRM} V_R =V_{RRM}	T_j=25℃	5	μA
I_{RRM}		T_j=125℃	2.5	mA

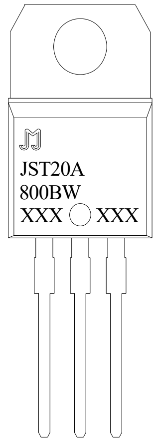
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220A(Ins)	2.2	℃/W

ORDERING INFORMATION



MARKING



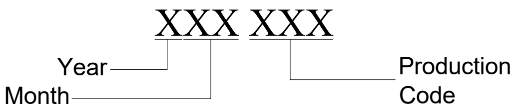


FIG.1 Maximum power dissipation versus RMS on-state current

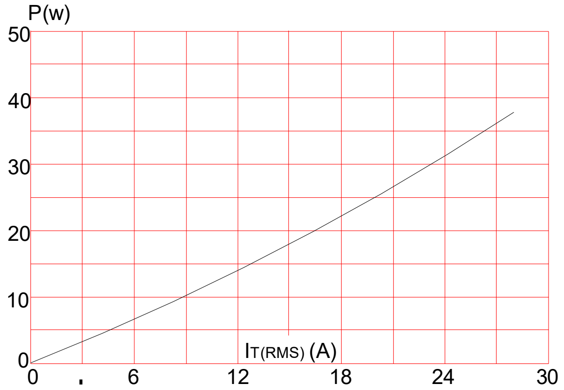


FIG.2: RMS on-state current versus case temperature

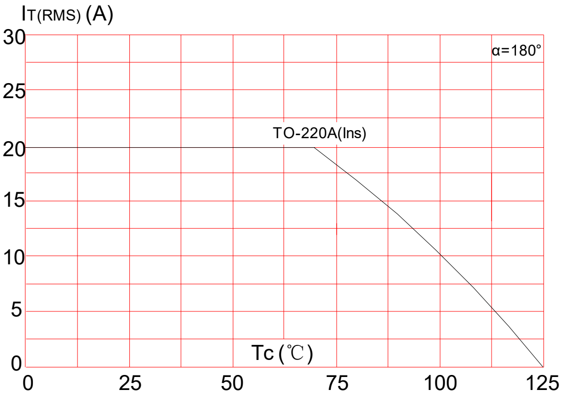


FIG.3: Surge peak on-state current versus number of cycles

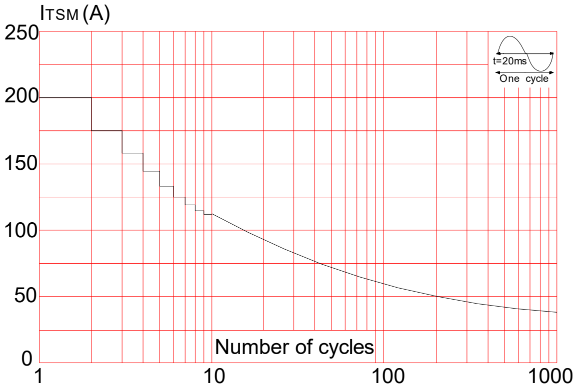


FIG.4: On-state characteristics (maximum values)

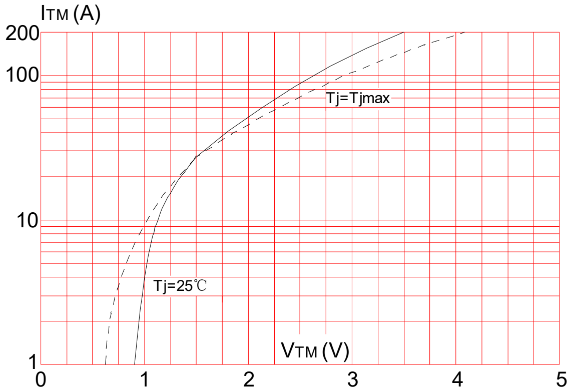


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<20ms, and corresponging value of I^2t (dI/dt < 50A/μs)

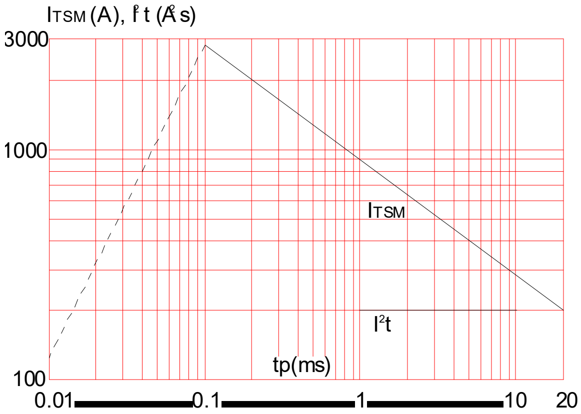
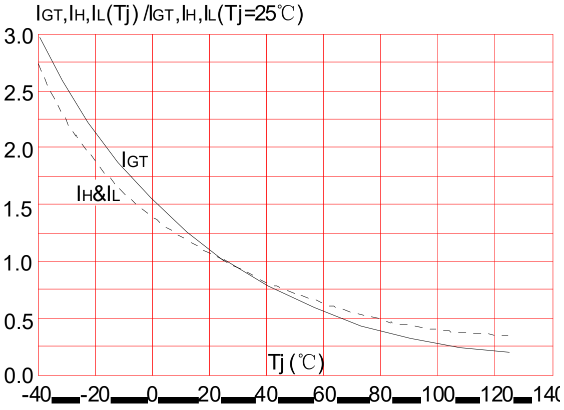


FIG.6: Relative variations of gate trigger current holding current and latching current versus junction temperature



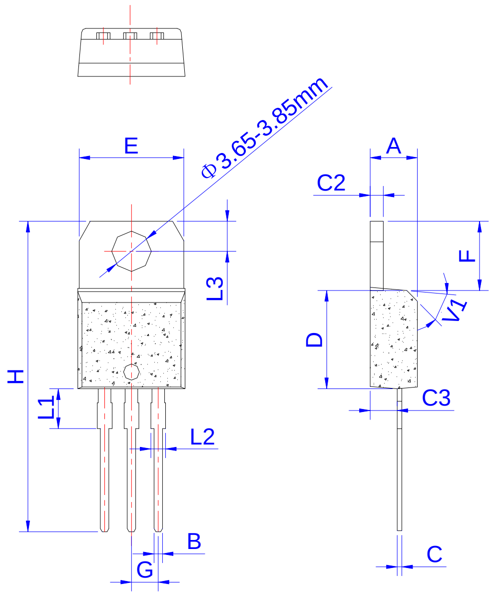
ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
JST20A-800BW	800	50	TO-220A(Ins)	50	Tube

Document Revision History

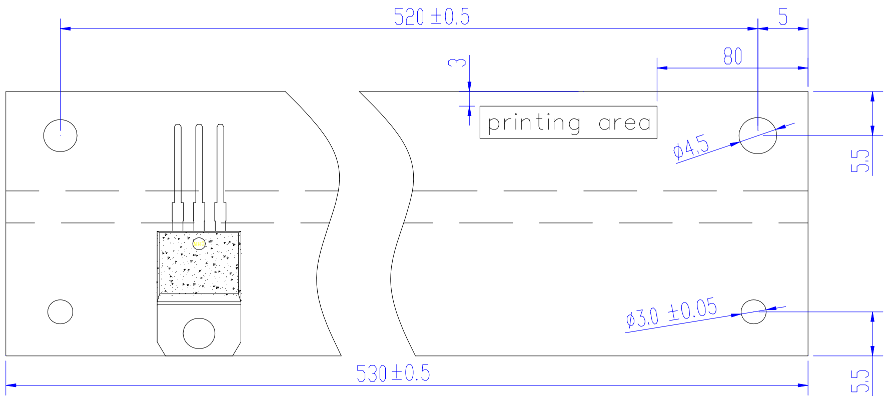
Date	Revision	Changes
Mar 27, 2022	1	Last update

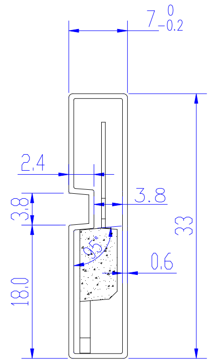
PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G	2.40		2.70	0.094		0.106
H	28.0		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

DELIVERY MODE





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