

JST20xxH Series 20A TRIACS

DESCRIPTION:

High current density due to double mesa technology, glass passivation, guaranteed maximum junction temperature 150° C.

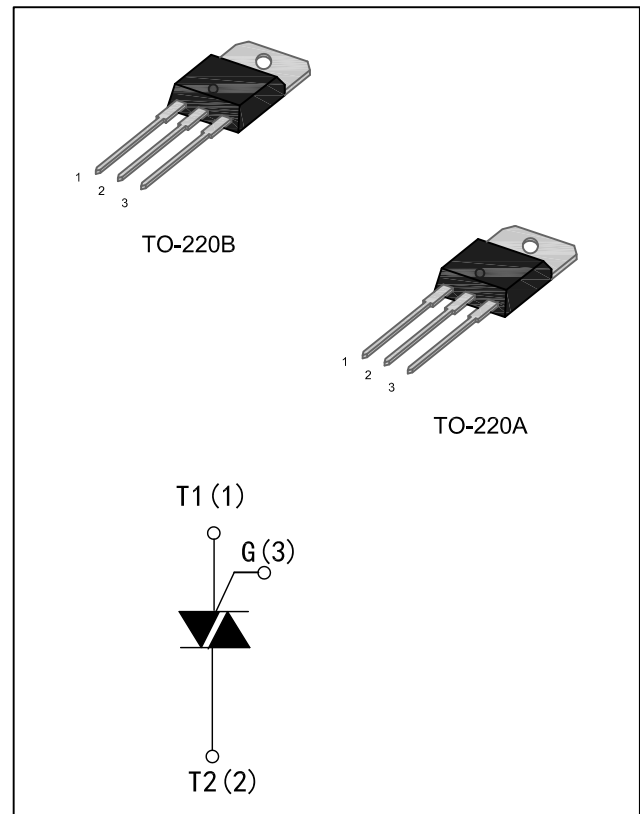
JST20xxH series triacs are suitable for general purpose AC switching, They can be used as an ON/OFF function in applications such as static relays, washing machine, soy milk maker, flush toilet, hair drier, induction motor starting circuits...or for phase control operation light dimmers, motor speed controllers.

JST2035H -JST2050H are 3 quadrants triacs, They are specially recommended for use on inductive loads.

JST20xxHxA series are full pack plastic e, they provide a 2500V RMS isolation voltage from all three terminals to external heat sink.

MAIN FEATURES

Symbol	Value	Unit
$I_T(RMS)$	20	A
V_{DRM}/V_{RRM}	600 / 800	V
V_{TM}	1.5	V



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit	
Storage junction temperature range	T _{stg}	-40 to +150	°C	
Operating junction temperature range	T _j	-40 to +150	°C	
Repetitive Peak Off-state Voltage (T _j =25°C)	JST2035H6 V _{DRM}	600	V	
Repetitive Peak Reverse Voltage (T _j =25°C)	JST2035H8 V _{RRM}	800		
Non repetitive Surge Peak Off-state Voltage (t _p =10ms, T _j =25°C)	V _{DSM}	V _{DRM} +100	V	
Non repetitive Peak Reverse Voltage (t _p =10ms, T _j =25°C)	V _{RSM}	V _{RRM} +100		
RMS on-state current (full sine wave)	TO-220A T _c =95°C	I _{T(RMS)}	20	A
	TO-220B T _c =110°C			
Non repetitive surge peak on-state current (full cycle, T _j =25°C)	f=60Hz, t=16.7ms	I _{TSM}	190	A
	f=50Hz, t=20ms		200	
I ² t Value for fusing	t _p =10ms	I ² t	340	A ² s
Critical rate of rise of on-state current (I _G =2×I _{GT} , t _r ≤100ns, f=120Hz, T _j =150°C)	di/dt	50	A/μs	
Peak gate current (t _p =20us, T _j =150°C)	I _{GM}	4	A	
Peak Gate Power Dissipation (t _p =20us, T _j =150°C)	P _{GM}	10	W	
Average gate power dissipation (T _j =150°C)	P _{G(AV)}	1	W	

ELECTRICAL CHARACTERISTICS(Tj=25°C unless otherwise specified)

Symbol	Test Condition	Quadrant		Limits		Unit
				JST2035	JST2050	
IGT	VD=12V RL=33Ω	I-II-III	MAX.	35	50	mA
VGT		I-II-III	MAX.	1.3		V
VGD	VD=VDRM RL=3.3KΩ Tj =125°C	I-II-III	MIN.	0.2		V
IL	IG=1.2IGT	I-III	MAX.	55	70	mA
		II	MAX.	80	100	mA
IH	IT =100mA		MAX.	40	55	mA
dV/dt	VD=67%VDRM gate open Tj=125°C		MIN.	500	1000	V/μs
(di/dt)c	Without snubber Tj=125°C		MIN.	13	22	A/ms

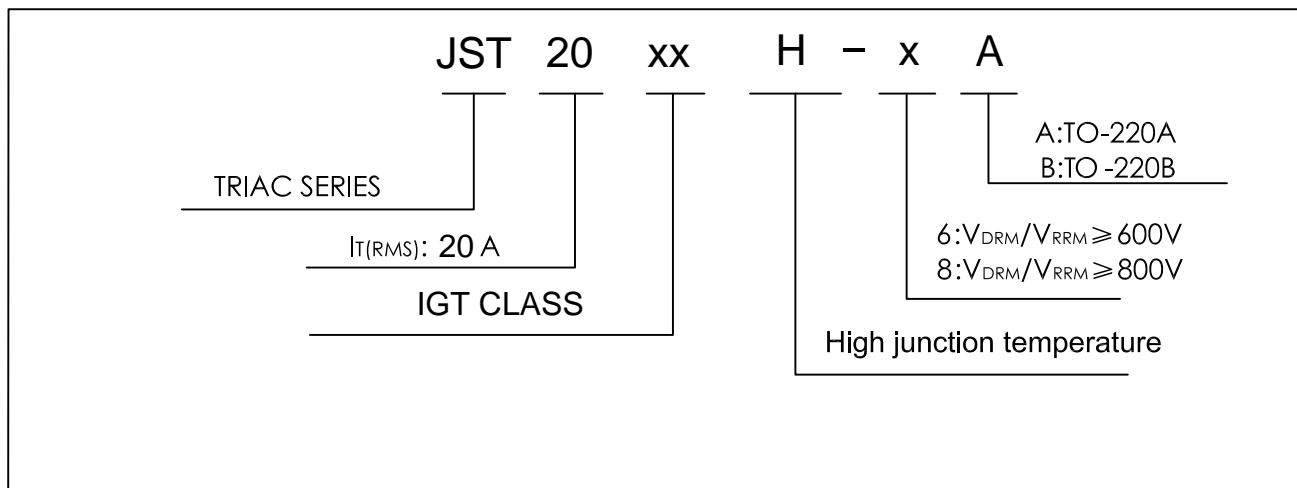
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
VTM	ITM=35A, tp=380μs	Tj=25°C	1.5	V
IDRM IRRM	VD=VDRM VR=VRRM	Tj=25°C	10	μA
		Tj=150°C	5	mA

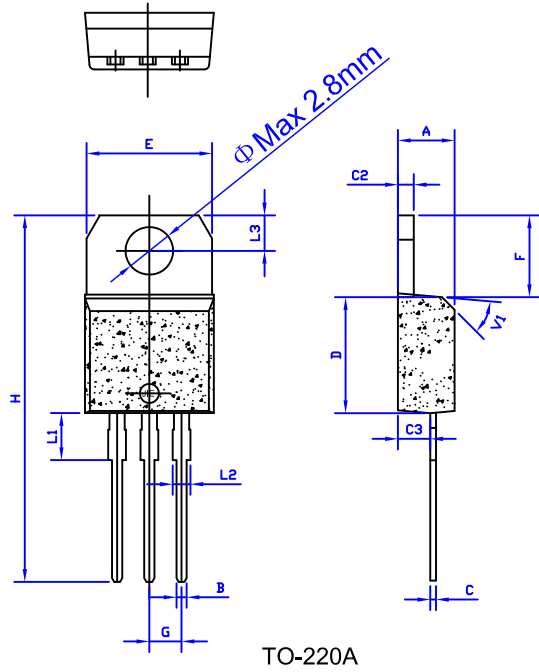
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
Rth(j-c)	Junction to Case(AC)	TO-220A	1.7	°C/W
		TO-220B	0.8	
Rth(j-a)	Junction to ambient (S=1cm²)		60	°C/W

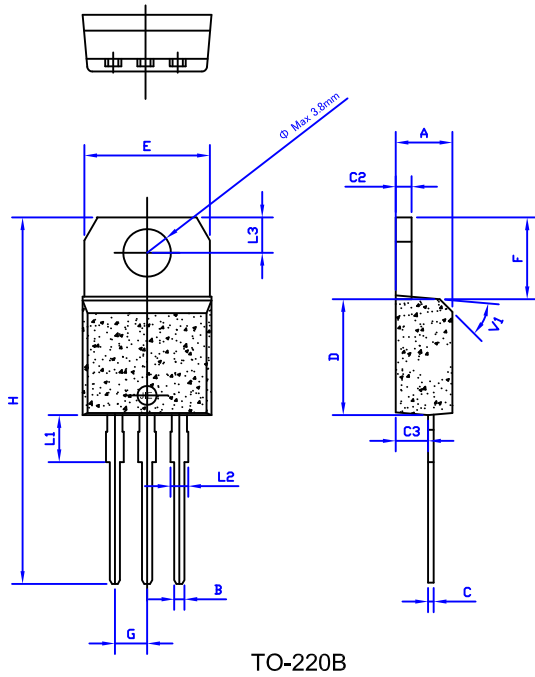
ORDERING INFORMATION



PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4		4.6	0.173		1.181
B	0.61		0.88	0.024		0.034
C	0.46		0.70	0.018		0.027
C2	1.23		1.32	0.048		0.051
C3	2.4		2.72	0.094		0.107
D	8.6		9.7	0.338		0.382
E	9.8		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	
H	28.0		29.8	11.0		11.7
L1		3.75			0.147	
L2	1.14		1.7	0.044		0.066
L3	2.65		2.95	0.104		0.116
V1		45°			40°	



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	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4		4.6	0.173		1.181
B	0.61		0.88	0.024		0.034
C	0.46		0.70	0.018		0.027
C2	1.21		1.32	0.048		0.051
C3	2.4		2.72	0.094		0.107
D	8.6		9.7	0.338		0.382
E	9.6		10.4	0.378		0.409
F	6.2		6.6	0.244		0.259
G		2.54			0.1	
H	28.0		29.8	11.0		11.7
L1		3.71			0.146	
L2	1.14		1.7	0.044		0.066
L3	2.65		2.95	0.104		0.116
V1		45°			40°	

FIG.1: Maximum power dissipation versus RMS on-state current(full cycle)

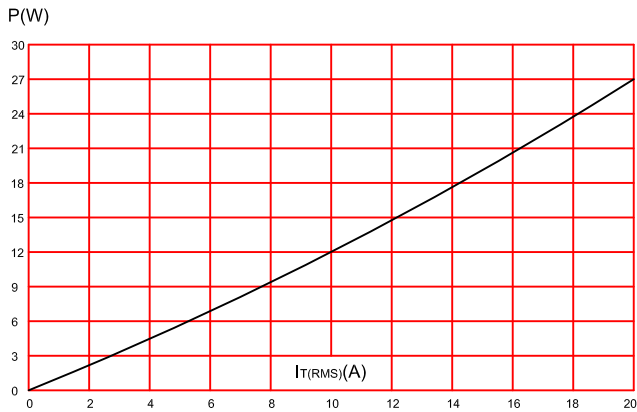


FIG.2: RMS on-state current versus case temperature(full cycle)

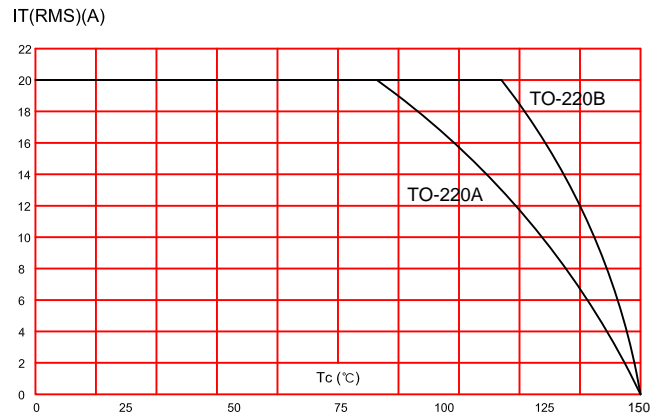


FIG.3: On-state characteristics (maximum values)

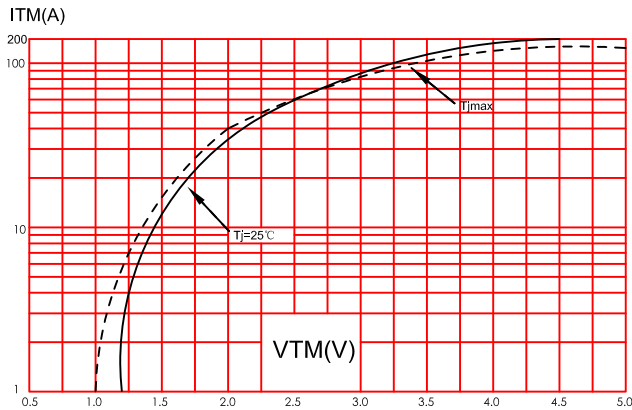


FIG.4: Surge peak on-state current versus number of cycles.

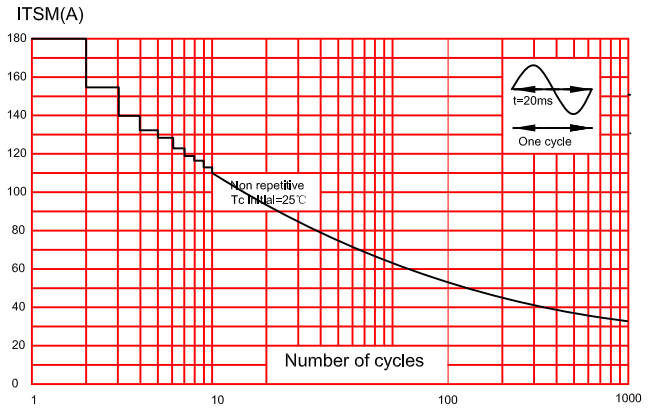


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t .

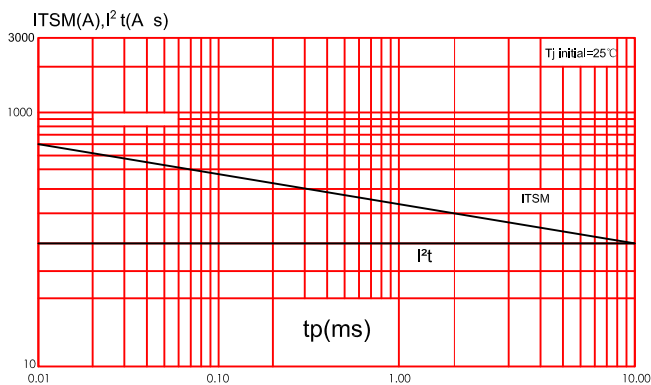
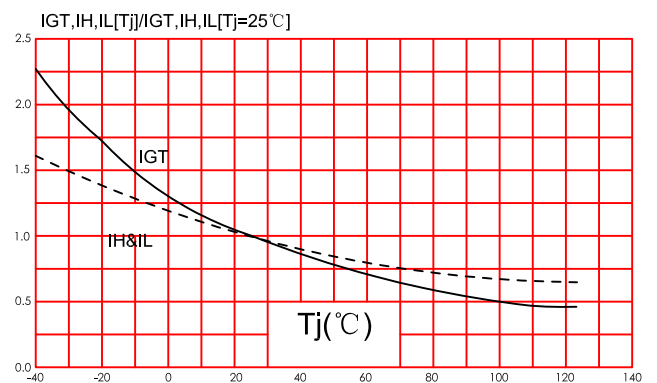


FIG.6: Relative variation of gate trigger current, holding current and latching current versus junction temperature(typical values).



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