

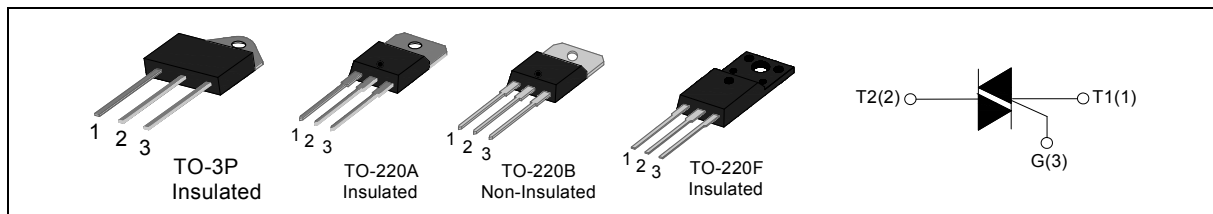
JST3035H/JST3050H Series 30A TRIACs

DESCRIPTION:

JST30xxH series triacs, with high ability to withstand the shock loading of large current, provide high dv/dt rate with strong resistance to electromagnetic interface. With high commutation performances, 3 quadrants products especially recommended for use on inductive load. From all three terminals to external heatsink, JST30xxH-xxA provides a rated insulation voltage of 2500 V_{RMS} , and JST30xxH-xxF provides a rated insulation voltage of 2000 V_{RMS} .

MAIN FEATURES

Symbol	Value	Unit
T_j	150	$^{\circ}C$
$I_{T(RMS)}$	30	A
V_{DRM} / V_{RRM}	600	V



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{stg}	-40-150	$^{\circ}C$
Operating junction temperature range		T_j	-40-150	$^{\circ}C$
Repetitive peak off-state voltage ($T_j=25^{\circ}C$)		V_{DRM}	600	V
Repetitive peak reverse voltage ($T_j=25^{\circ}C$)		V_{RRM}	600	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) ($T_C=75^{\circ}C$)	$I_{T(RMS)}$	30	A
	TO-220F(Ins) ($T_C=70^{\circ}C$)			
	TO-220B(Non-Ins) ($T_C=90^{\circ}C$)			
	TO-3P ($T_C=97^{\circ}C$)			



Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	270	A
I^2t value for fusing (tp=10ms)	I^2t	340	A ² s
Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	dI/dt	50	A/ μ s
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 ($T_j=25^\circ\text{C}$ unless otherwise specified)

Symbol	Test Condition	Quadrant		Value		Unit
				JST3035H	JST3050H	
I_{GT}	$V_D = 12\text{V } R_L = 33\Omega$	I - II -III	MAX	35	50	mA
V_{GT}		I - II -III	MAX	1.3		V
V_{GD}	$V_D = V_{DRM} T_j = 150^\circ\text{C}$ $R_L = 3.3\text{K}\Omega$	I - II -III	MIN	0.2		V
I_L	$I_G = 1.2I_{GT}$	I -III	MAX	50	70	mA
		II		60	80	
I_H	$I_T = 100\text{mA}$		MAX	40	50	mA
dV/dt	$V_D = 2/3V_{DRM}$ Gate Open $T_j = 150^\circ\text{C}$		MIN	500	1000	V/ μ s

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM} = 35\text{A } tp = 380\mu\text{s}$	$T_j = 25^\circ\text{C}$	1.5	V
I_{DRM}	$V_D = V_{DRM} V_R = V_{RRM}$	$T_j = 25^\circ\text{C}$	5	μA
I_{RRM}		$T_j = 150^\circ\text{C}$	3	mA

THERMAL RESISTANCES

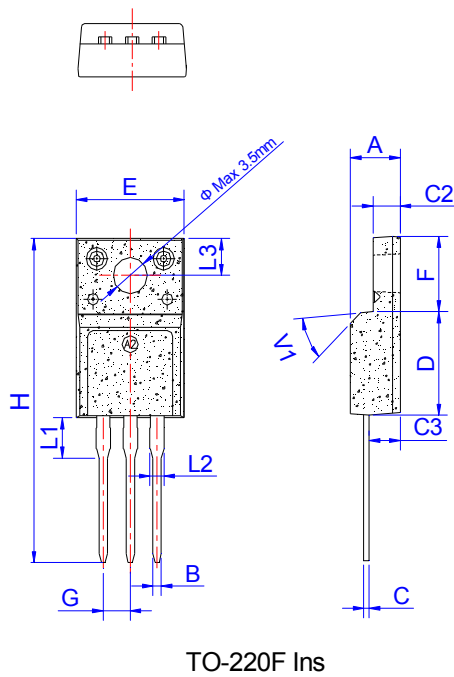
Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220A(Ins)	1.5	$^\circ\text{C/W}$
		TO-220F(Ins)	1.7	

$R_{th(j-c)}$	junction to case(AC)	TO-220B (Non-Ins)	1.3	°C/W
		TO-3P(Ins)	0.9	

ORDERING INFORMATION

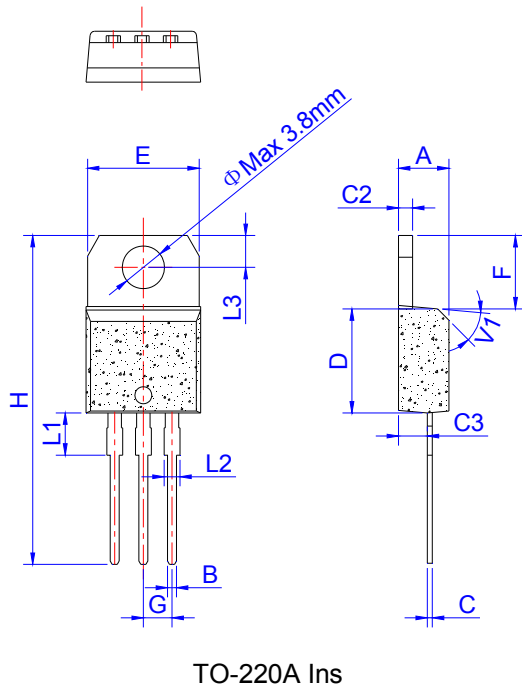
JST Triacs	30 30:IT(RMS):30A	35 35:IGT1-3 ≤ 35mA 50:IGT1-3 ≤ 50mA	H H:T _j =150°C	-6 6:V _{DRM} /V _{RRM} ≥ 600V	Z Z:TO-3P(Ins) A:TO-220A(Ins) F:TO-220F(Ins) B:TO-220B(Non-Ins)
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PACKAGE MECHANICAL DATA

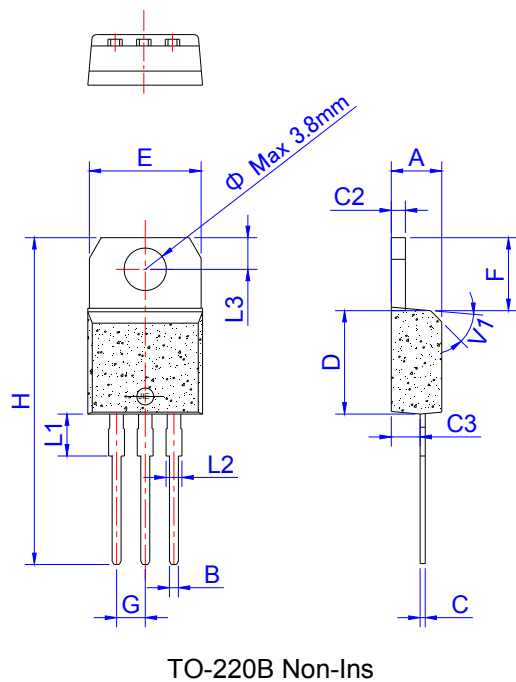


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		6.80	0.252		0.268
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.63			0.143	
L2	1.14		1.70	0.045		0.067
L3		3.30			0.130	
V1		45°			45°	

PACKAGE MECHANICAL DATA

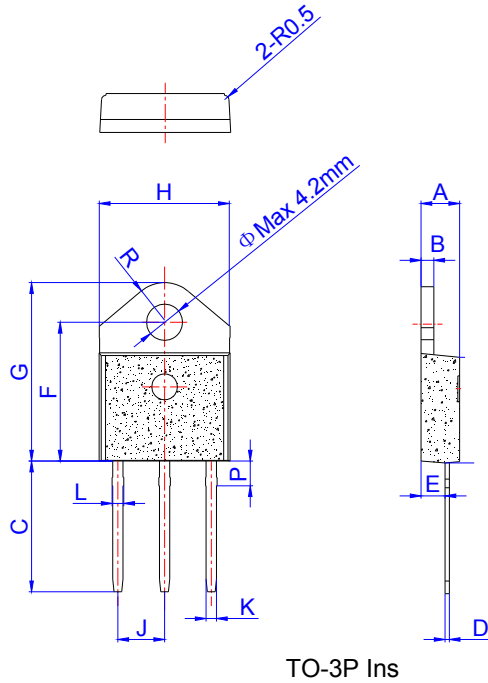


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	
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°	



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	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G		2.54			0.1	
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°	

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.60	0.565		0.614
D	0.50		0.70	0.020		0.028
E	2.70		2.90	0.106		0.114
F	15.80		16.50	0.622		0.650
G	20.40		21.10	0.803		0.831
H	15.10		15.50	0.594		0.610
J	5.40		5.65	0.213		0.222
K	1.10		1.40	0.043		0.055
L	1.35		1.50	0.053		0.059
P	2.80		3.00	0.110		0.118
R		4.35			0.171	

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

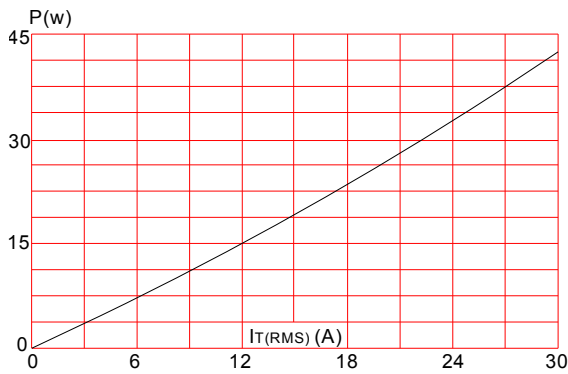


FIG.2: RMS on-state current versus case temperature

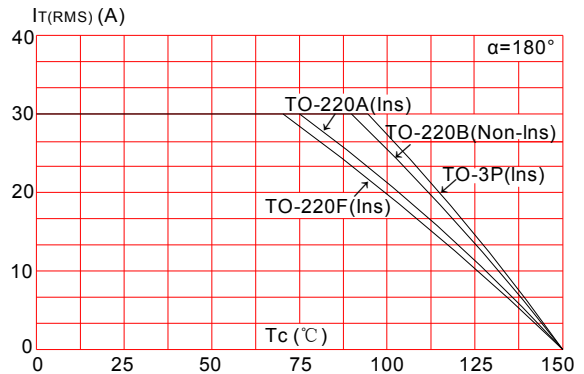


FIG.3: Surge peak on-state current versus number of cycles

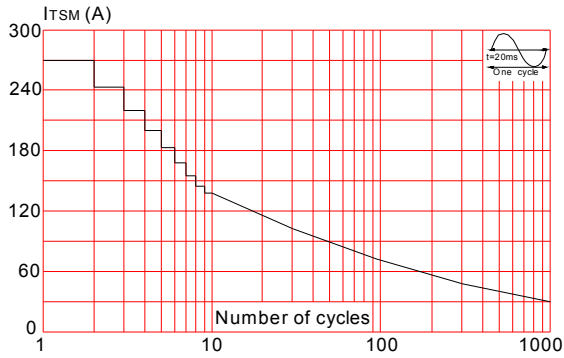


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of $\int i^2 t$ ($dI/dt < 50A/\mu s$)

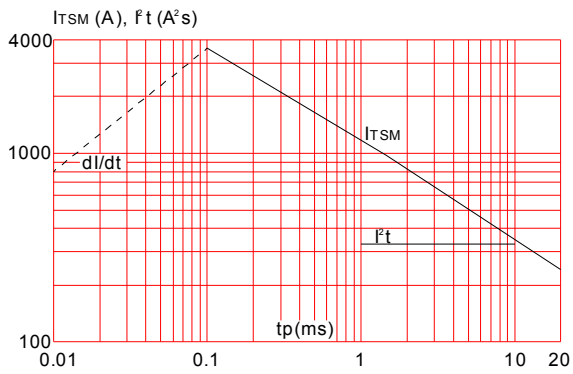


FIG.4: On-state characteristics (maximum values)

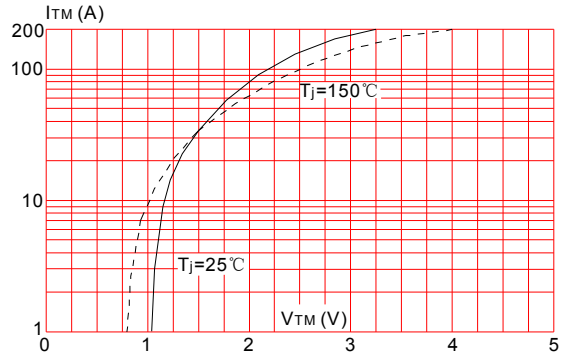
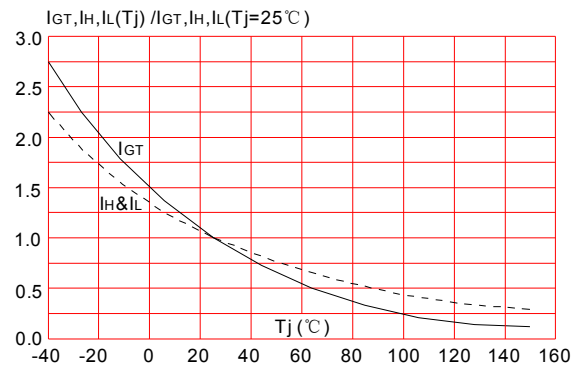


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



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