



T30xxH Series 30A TRIACS

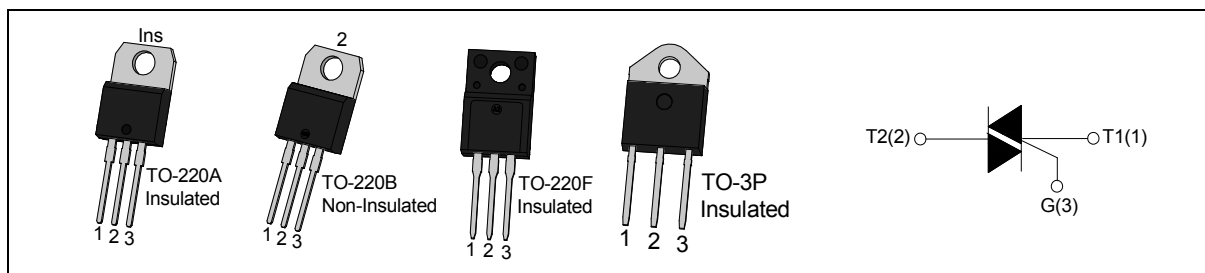
Rev.6.0

DESCRIPTION:

T30xxH 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, T30xxH-xxA provides a rated insulation voltage of 2500 V_{RMS}, and T30xxH-xxF provides a rated insulation voltage of 2000 V_{RMS}, complying with UL standards. (File ref: E252906).

MAIN FEATURES

Symbol	Value	Unit
T _j	150	°C
I _{T(RMS)}	30	A
V _{DRM} / V _{RPM}	600/800	V



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T _{stg}	-40-150	°C
Operating junction temperature range	T _j	-40-150	°C
Repetitive peak off-state voltage (T _j =25°C)	V _{DRM}	600/800	V
Repetitive peak reverse voltage (T _j =25°C)	V _{RPM}	600/800	V
RMS on-state current	TO-220A(Ins)/ TO-220F(Ins) (T _c =75°C)	30	A
	TO-220B(Non-Ins) (T _c =90°C)		
	TO-3P (T _c =100°C)		

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

Symbol	Test Condition	Quadrant		Value		Unit
				T3035H	T3050H	
I_{GT}	$V_D=12V R_L=33\Omega$	I - II -III	MAX	35	50	mA
V_{GT}		I - II -III	MAX	1.3		V
V_{GD}	$V_D=V_{DRM} T_j=150^\circ C$ $R_L=3.3K\Omega$	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	$I_T=100mA$		MAX	40	50	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=150^\circ C$		MIN	500	1000	$V/\mu s$

STATIC CHARACTERISTICS

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

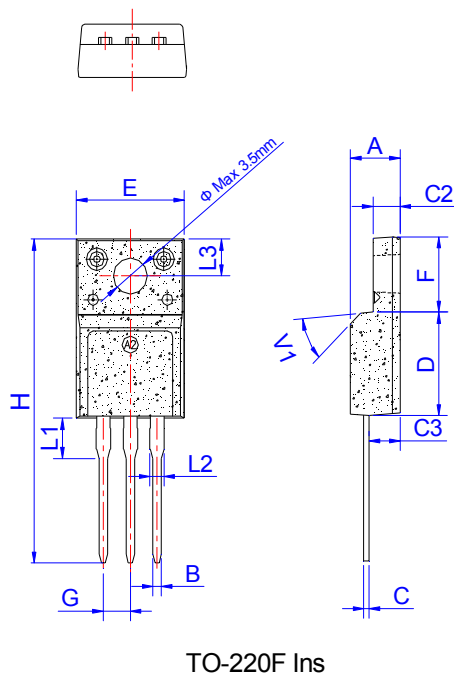
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220A(Ins)	1.5	$^\circ C/W$
		TO-220F(Ins)	1.7	
		TO-220B (Non-Ins)	1.3	
		TO-3P(Ins)	0.9	

ORDERING INFORMATION

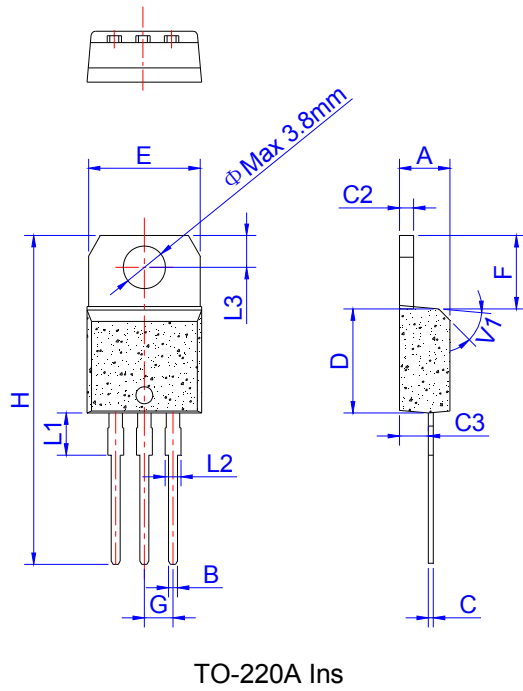
<p>T Triacs</p> <p>30:IT(RMS):30A</p> <p>35:IGT1-3 ≤ 35mA</p> <p>50:IGT1-3 ≤ 50mA</p>	<p>30</p>	<p>35</p>	<p>H</p> <p>H:T_j=150°C</p>	<p>-6</p> <p>6:V_{DRM}/V_{RRM} ≥ 600V</p> <p>8:V_{DRM}/V_{RRM} ≥ 800V</p>	<p>A</p> <p>Z:TO-3P(Ins)</p> <p>A:TO-220A(Ins)</p> <p>F:TO-220F(Ins)</p> <p>B:TO-220B(Non-Ins)</p>
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PACKAGE MECHANICAL DATA

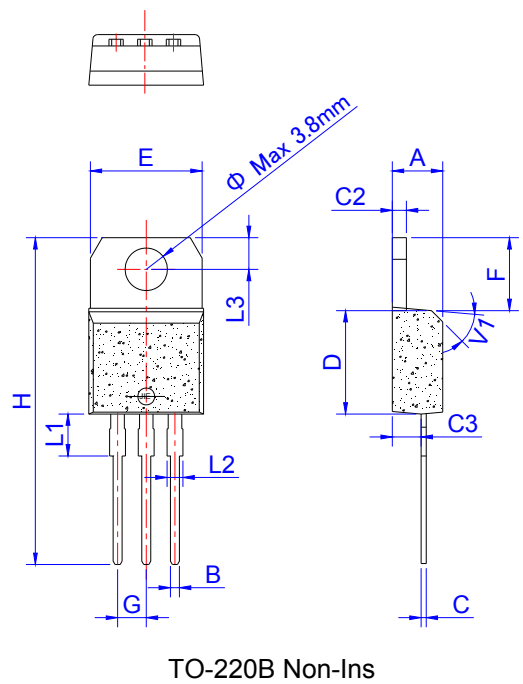


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		6.80	0.252		0.268
G		2.54			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

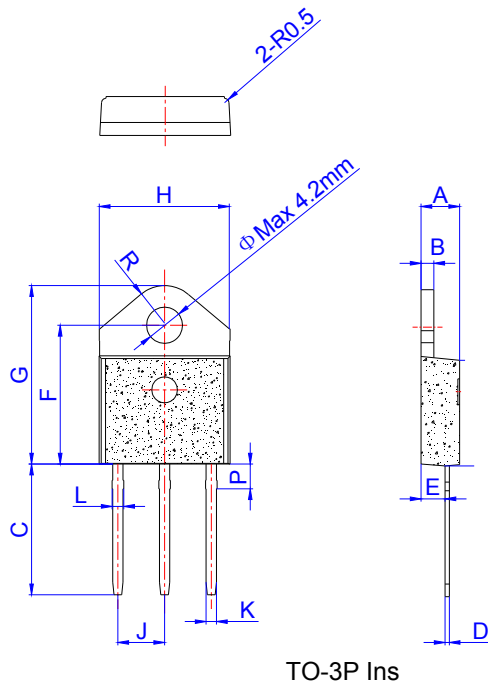


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	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



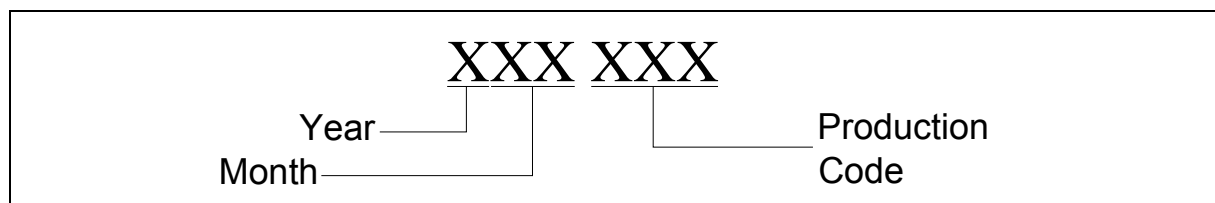
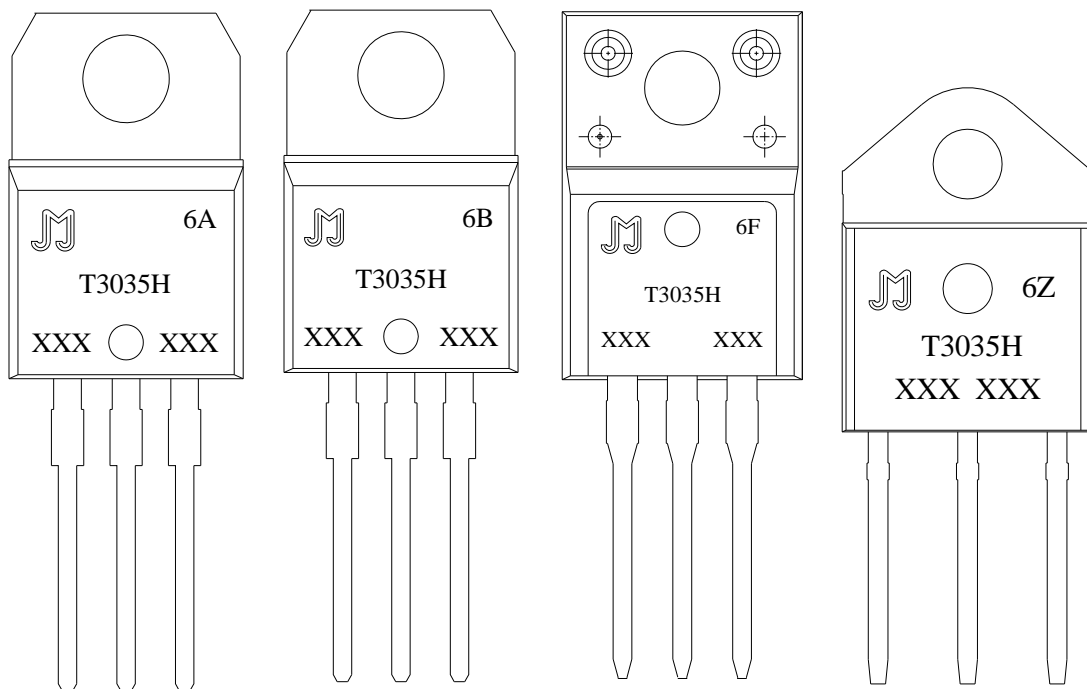
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A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
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	

MARKING



PACKAGE INFORMATION

PACKAGE	WEIGHT (PER PCS)	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220A	2.308g	TUBE	50	1,000	8,000
TO-220B	1.935g	TUBE	50	1,000	8,000
TO-220F	2.093g	TUBE	50	1,000	8,000
TO-3P	4.63g	TUBE	30	450	3,600

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

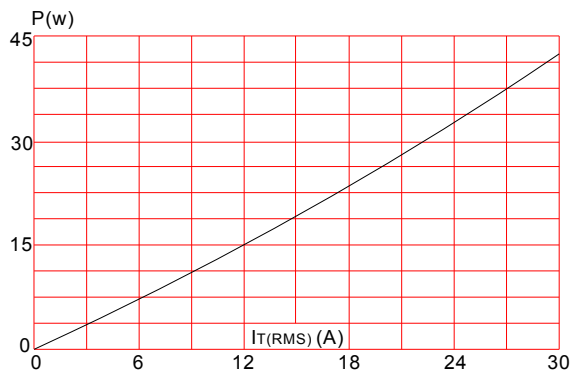


FIG.2: RMS on-state current versus case temperature

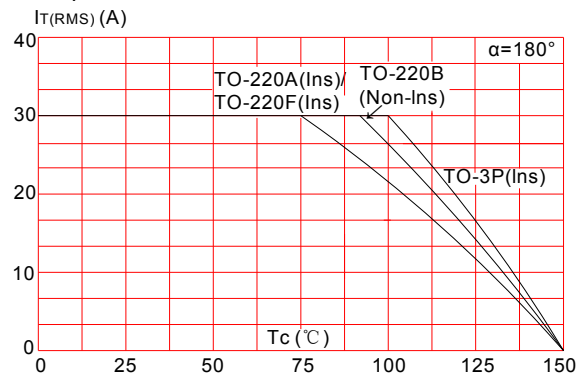


FIG.3: Surge peak on-state current versus number of cycles

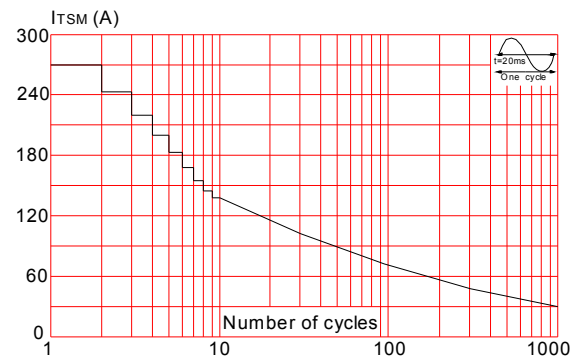


FIG.4: On-state characteristics (maximum values)

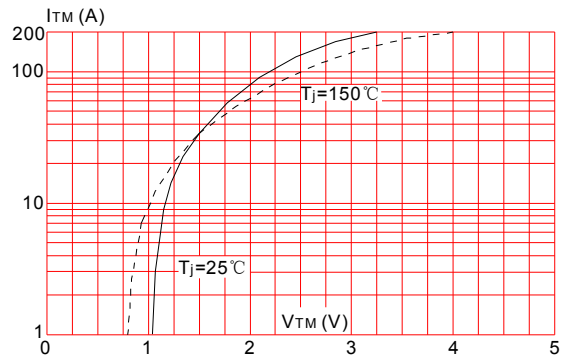


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of $\int i^2 t$ ($dI/dt < 50\text{A}/\mu\text{s}$)

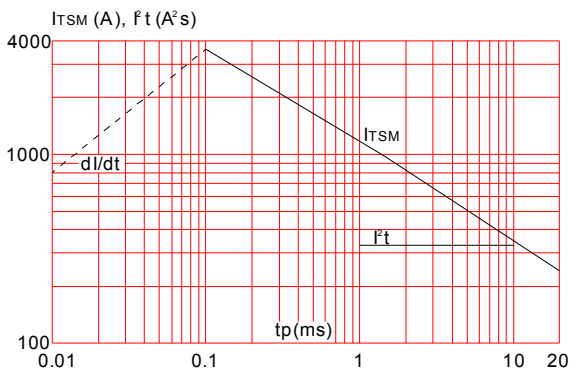
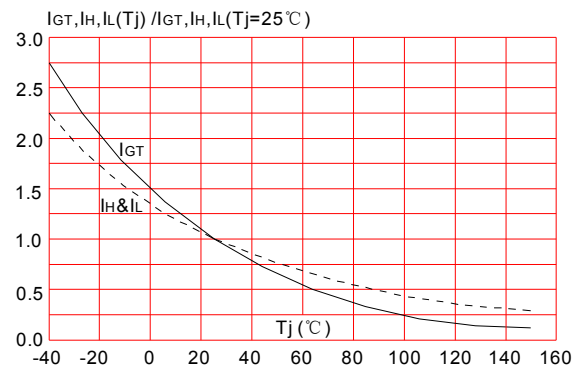



FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



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