



T8xxH Series 8A TRIACs

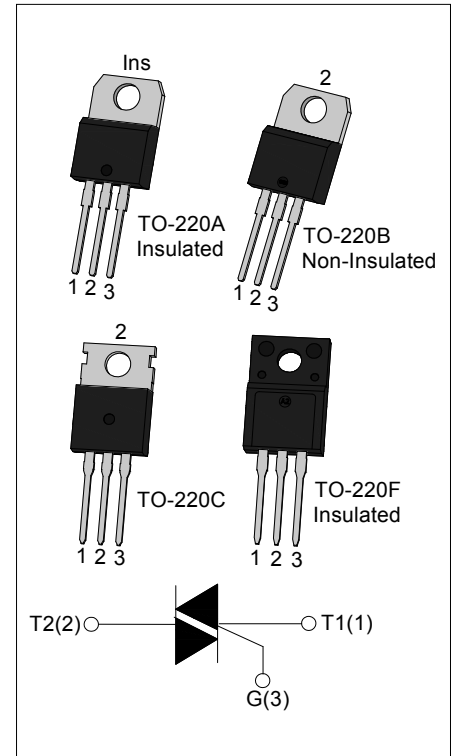
Rev.8.0

DESCRIPTION:

With high ability to withstand the shock loading of large current, T8xxH series triacs of high junction temperature provide high dv/dt rate with strong resistance to electromagnetic interference. They are especially recommended for use on motor control of laundry machine. Packages listed above are RoHS compliant. (2011/65/EU)

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	8	A
V_{DRM}/V_{RRM}	600/800/1000	V
T_{jmax}	150	°C



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 ($T_j=25^\circ\text{C}$)	V_{DRM}	600/800/1000	V	
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{RRM}	600/800/1000	V	
RMS on-state current	$I_{T(RMS)}$	TO-220A(Ins)/ TO-220F(Ins) ($T_C=115^\circ\text{C}$)	8	A
		TO-220B(Non-Ins)/ TO-220C ($T_C=125^\circ\text{C}$)		
Non repetitive surge peak on-state current (full cycle, $F=50\text{Hz}$)	I_{TSM}	80	A	
I^2t value for fusing ($t_p=10\text{ms}$)	I^2t	32	A^2s	
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$)	di/dt	50	$\text{A}/\mu\text{s}$	

Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	5	W

ELECTRICAL CHARACTERISTICS ($T_j=25^\circ\text{C}$ unless otherwise specified)

Symbol	Test Condition	Quadrant		Value			Unit
				T810H	T835H	T850H	
I_{GT}	$V_D=12\text{V } R_L=33\Omega$	I - II - III	MAX	10	35	50	mA
V_{GT}		I - II - III	MAX	1.5			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	20	50	70	mA
		II		35	60	80	
I_H	$I_T=100\text{mA}$		MAX	20	40	60	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=150^\circ\text{C}$		MIN	500	1000	1500	V/ μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=11\text{A } t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	1.5	V
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	10	μA
I_{RRM}		$T_j=150^\circ\text{C}$	5	mA

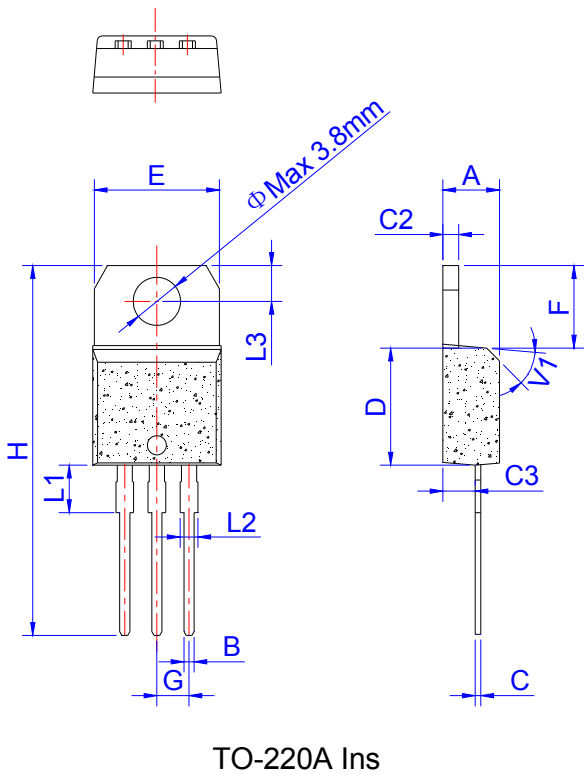
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220A(Ins)	2.5	$^\circ\text{C/W}$
		TO-220B(Non-Ins)/ TO-220C	1.6	
		TO-220F(Ins)	2.7	

ORDERING INFORMATION

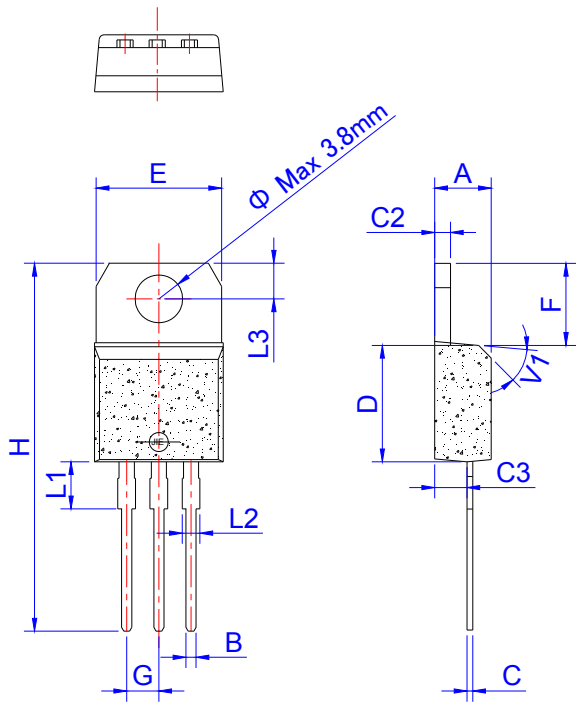
<p>T</p> <p>Triacs</p> <p>$I_{T(RMS)}:8A$</p> <p>10: $I_{GT1-3} \leq 10mA$</p> <p>35: $I_{GT1-3} \leq 35mA$</p> <p>50: $I_{GT1-3} \leq 50mA$</p> <p>High junction temperature</p>	<p>8</p>	<p>35</p>	<p>H</p>	<p>-6</p>	<p>B</p> <p>C: TO-220C</p> <p>A: TO-220A(Ins)</p> <p>F: TO-220F(Ins)</p> <p>B: TO-220B(Non-Ins)</p> <p>6: $V_{DRM} / V_{RRM} \geq 600V$</p> <p>8: $V_{DRM} / V_{RRM} \geq 800V$</p> <p>10: $V_{DRM} / V_{RRM} \geq 1000V$</p>
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PACKAGE MECHANICAL DATA



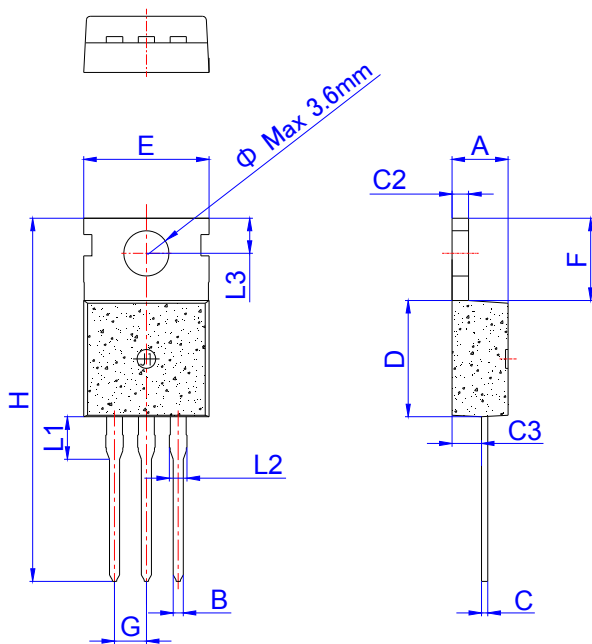
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	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

PACKAGE MECHANICAL DATA



TO-220B Non-Ins

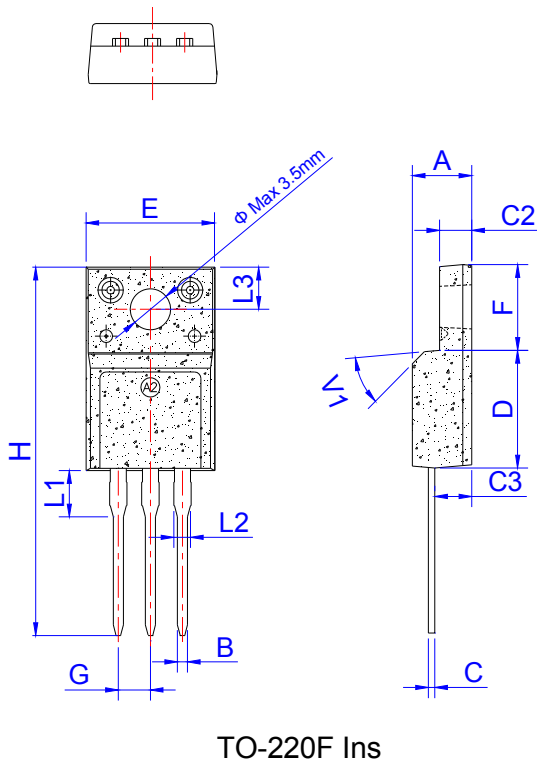
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G		2.54			0.1	
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°	



TO-220C

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
Φ		3.6			0.142	

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 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-220C	2.05g	TUBE	50	1,000	8,000
TO-220F	2.093g	TUBE	50	1,000	8,000

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

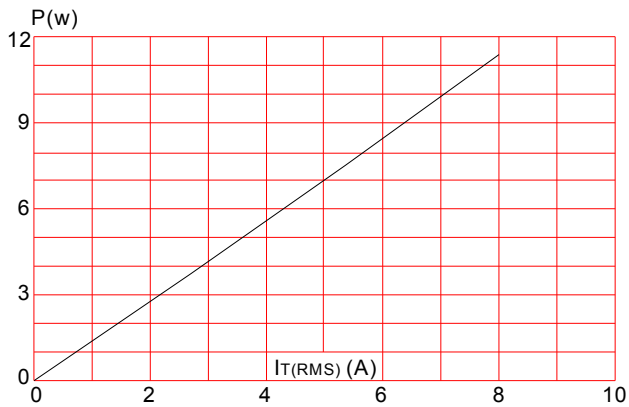


FIG.3: Surge peak on-state current versus number of cycles

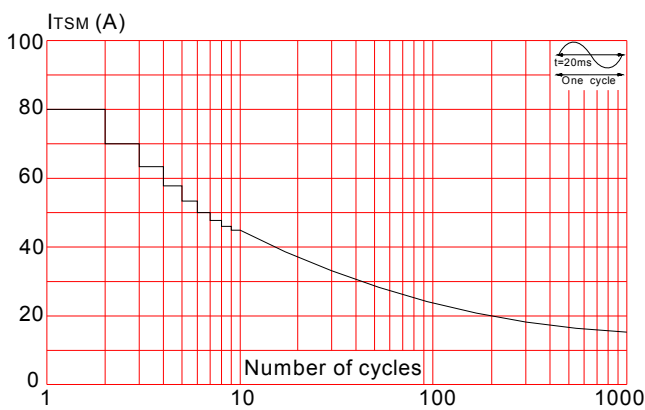


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t ($dI/dt < 50\text{A}/\mu\text{s}$)

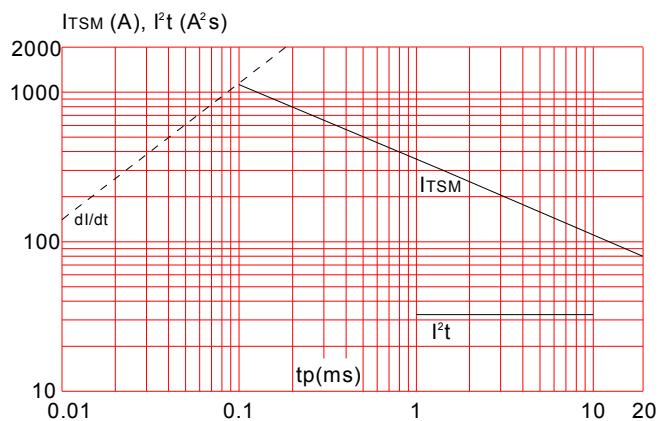


FIG.2: RMS on-state current versus case temperature

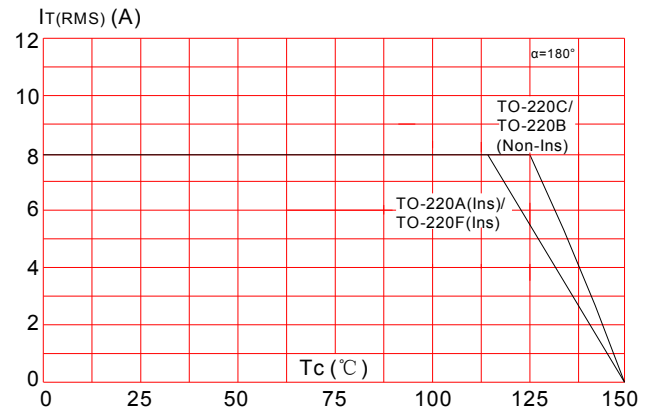


FIG.4: On-state characteristics (maximum values)

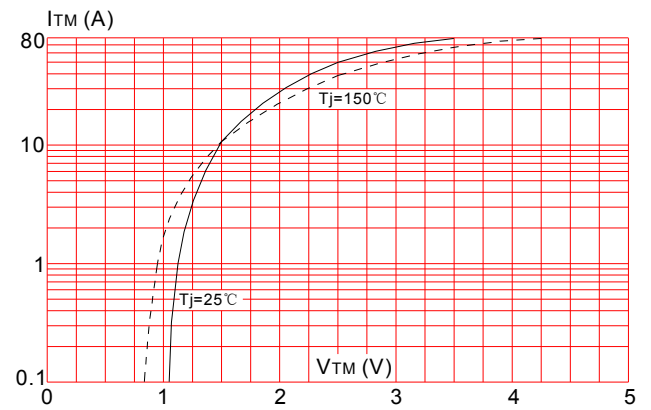
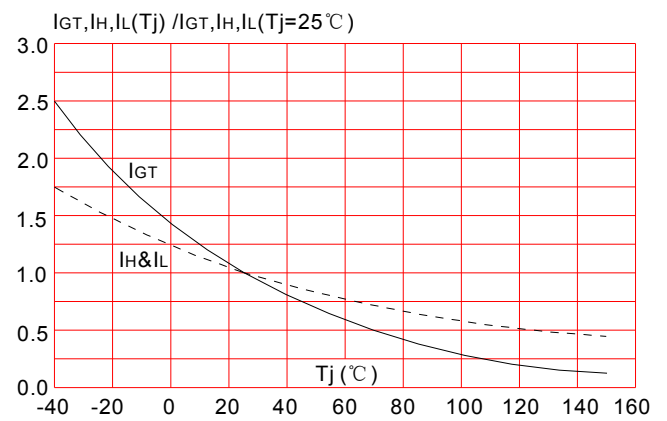


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature




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