



T835H/T850H Series 8A TRIACs

Rev.3.0

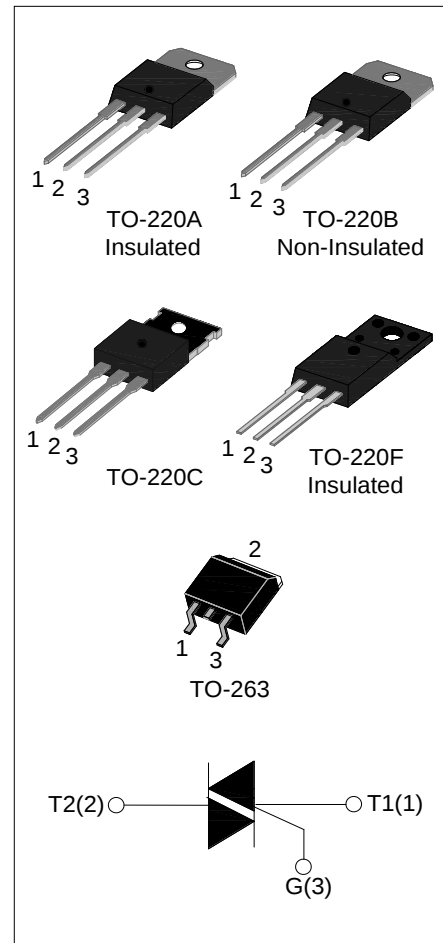
DESCRIPTION:

T8xxH series triacs of high junction temperature, with high ability to withstand the shock loading of large current, provide high dv/dt rate with strong resistance to electromagnetic interference. They are especially recommended for use on motor control of laundry machine.

T8xxH-xxA provides insulation voltage rated at 2500V RMS and T8xxH-xxF provides insulation voltage rated at 2000V RMS from all three terminals to external heatsink complying with UL standards (File ref: E252906).

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	8	A
V_{DRM}/V_{RRM}	800 and 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 ($T_j=25^{\circ}C$)		V_{DRM}	800/1000	V
Repetitive peak reverse voltage ($T_j=25^{\circ}C$)		V_{RRM}	800/1000	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) ($T_C=97^{\circ}C$)	$I_{T(RMS)}$	8	A
	TO-220B(Non-Ins)/ TO-220C($T_C=107^{\circ}C$)			

RMS on-state current	TO-220F(Ins) ($T_C=95^{\circ}\text{C}$)	$I_{T(RMS)}$	8	A
	TO-263 ($T_C=113^{\circ}\text{C}$)			
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
				T835H	T850H	
I_{GT}	$V_D=12\text{V } R_L=33\Omega$	I - II - III	MAX	35	50	mA
V_{GT}		I - II - III	MAX	1.5		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	50	70	mA
		II		60	80	
I_H	$I_T=100\text{mA}$		MAX	40	60	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=150^{\circ}\text{C}$		MIN	1000	1500	$\text{V}/\mu\text{s}$
$(dV/dt)_c$	$(di/dt)_c=-1.7\text{A/ms } T_j=150^{\circ}\text{C}$		MIN	10	25	$\text{V}/\mu\text{s}$

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=11\text{A } t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.55	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

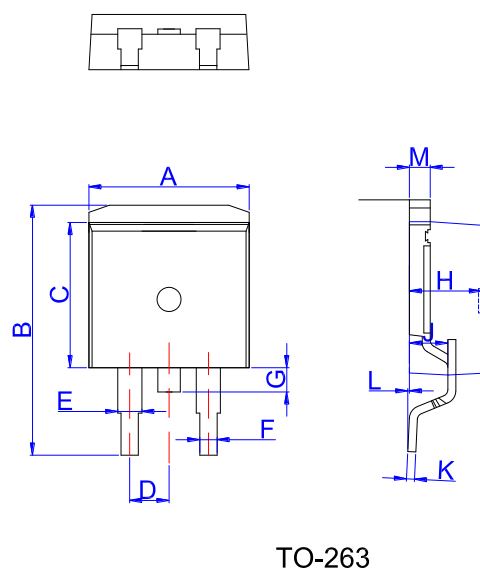
THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220A(Ins)	2.5
		TO-220B(Non-Ins)/ TO-220C	1.6
		TO-220F(Ins)	2.8
		TO-263	1.1

ORDERING INFORMATION

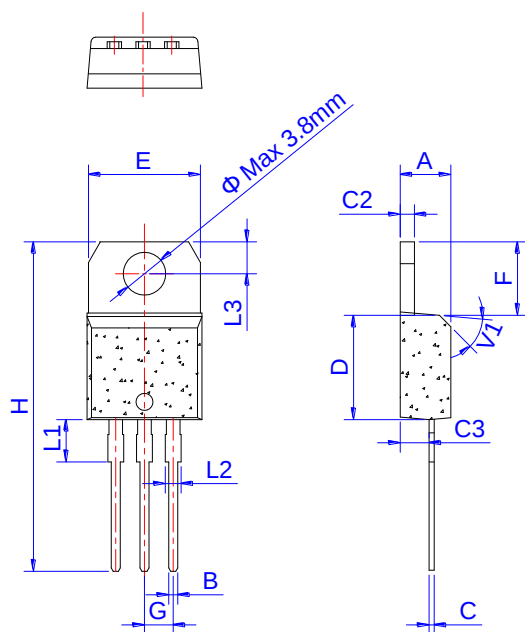
T	8	35	H	-8	C
Triacs					
$I_{T(RMS)}:8A$					
		35: $I_{GT1-3} \leq 35mA$			A:TO-220A(Ins)
		50: $I_{GT1-3} \leq 50mA$			F:TO-220F(Ins)
					B:TO-220B(Non-Ins)
					C:TO-220C E:TO-263
		High junction temperature		8: $V_{DRM} / V_{RRM} \geq 800V$	
				10: $V_{DRM} / V_{RRM} \geq 1000V$	

PACKAGE MECHANICAL DATA



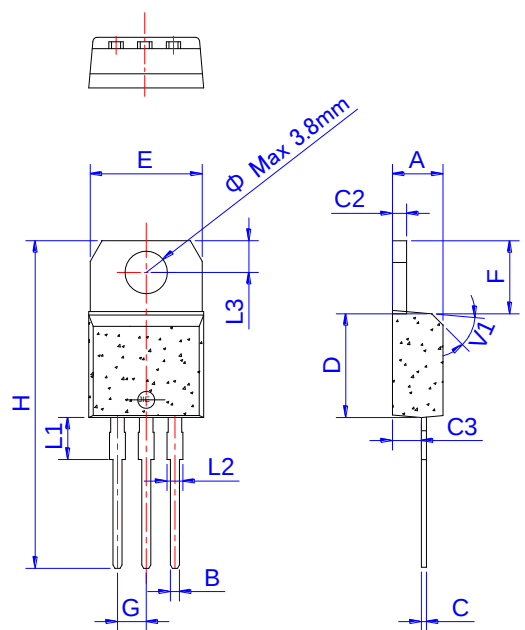
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.90		10.20	0.390		0.402
B	14.70		15.80	0.579		0.622
C	9.4		9.6	0.37		0.378
D		2.54			0.100	
E	1.20		1.40	0.047		0.055
F	0.75		0.85	0.029		0.033
G			1.75			0.069
H	4.40		4.70	0.173		0.185
J	2.30		2.70	0.091		0.106
K	0.38		0.55	0.015		0.022
L	0	0.10	0.25	0	0.004	0.010
M	1.25		1.35	0.049		0.053

PACKAGE MECHANICAL DATA



TO-220A Ins

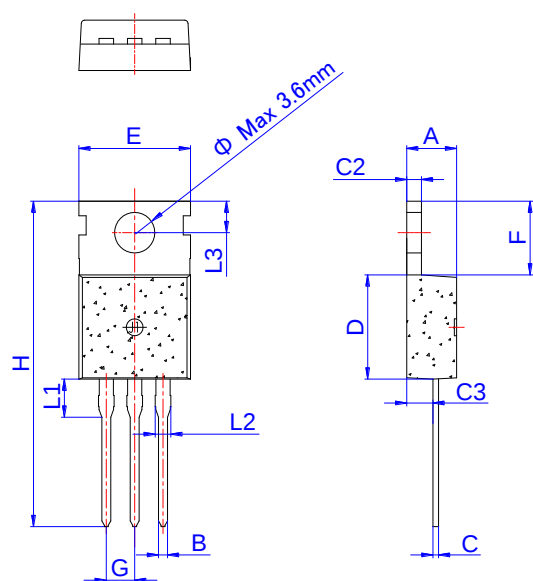
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	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



TO-220B Non-Ins

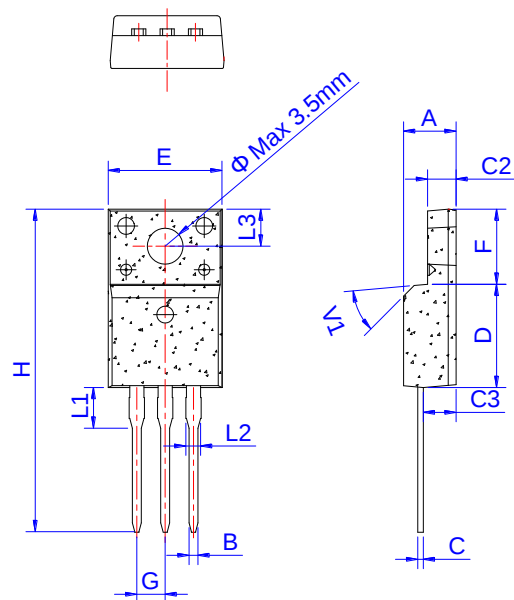
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G		2.54			0.1	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

PACKAGE MECHANICAL DATA



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	



TO-220F Ins

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.80	0.173		0.189
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.48		0.75	0.019		0.030
C2	2.40		2.70	0.094		0.106
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.70		10.3	0.382		0.406
F	6.40		7.00	0.252		0.276
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°	

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

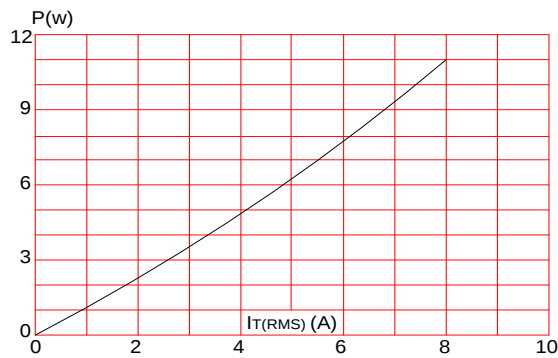


FIG.3: Surge peak on-state current versus number of cycles

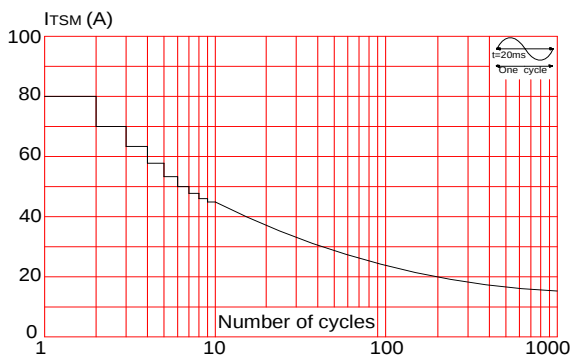


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t ($dI/dt < 50\text{A}/\mu\text{s}$)

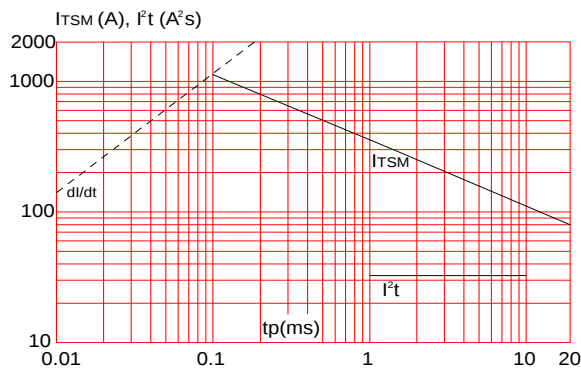


FIG.2: RMS on-state current versus case temperature

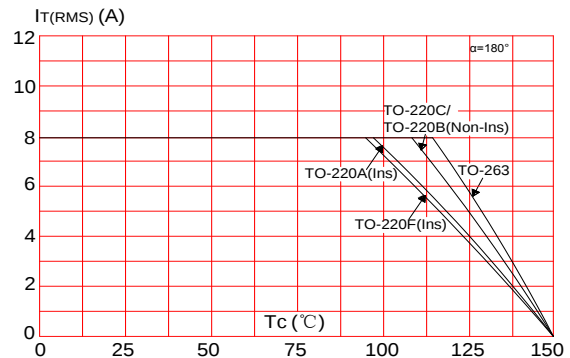


FIG.4: On-state characteristics (maximum values)

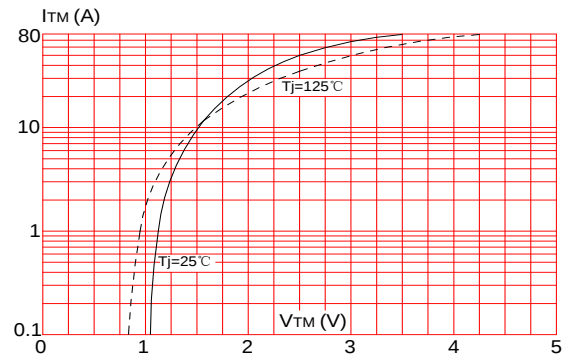
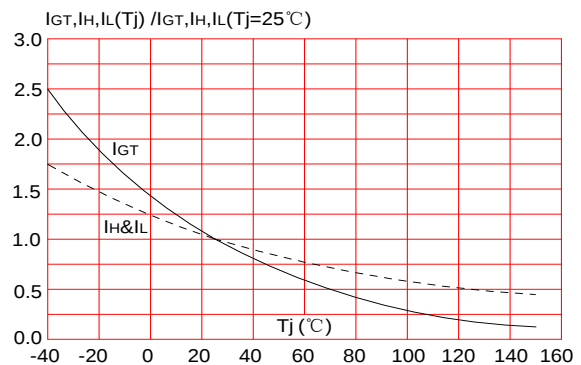


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



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