

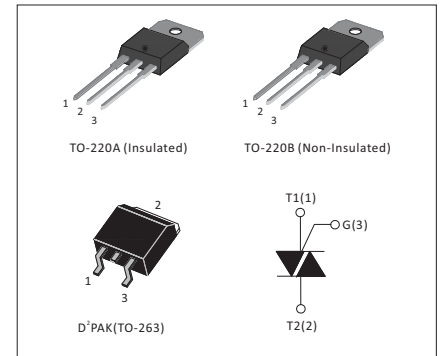
FEATURES

Available either in through hole or surface mount packages, the 8A series Triac is suitable for general purpose AC switching. They can be used as an ON/OFF function in applications such as static relays, heating regulation, induction motor starting circuits..or for phase control operation in light dimmers, motor speed controllers...

The snubberless versions are specially recommended for use on inductive loads, thanks to their high commutation performances.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	8	A
V_{RRM}	600/800	V
V_{DRM}	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	-40~125	°C
Repetitive peak off-state voltage ($T_j=25^\circ\text{C}$)	V_{DRM}	600/800	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{RRM}	600/800	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)($T_c=100^\circ\text{C}$)	8	A
	TO-220B(Non-Ins)($T_c=110^\circ\text{C}$)		
	TO-263($T_c=110^\circ\text{C}$)		
Non repetitive surge peak on-state current(full cycle, F=50Hz)	I_{TSM}	80	A
I^2t value for fusing ($t_p=10\text{ms}$)	I^2t	36	A^2s
Critical rate of rise of on-state current($I_G=2 \times I_{GT}$)	d_i/d_t	50	A/us
Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_{G(AV)}$	1	W

STATIC CHARACTERISTICS

Symbol	Parameter	Value(Max)	Unit
V_{TM}	$I_{TM}=11\text{A}, t_p=380\mu\text{s}$	1.55	V
I_{DRM}	$V_D=V_{DRM}, V_R=V_{RRM}, T_j=25^\circ\text{C}$	5	μA
I_{RRM}	$V_D=V_{DRM}, V_R=V_{RRM}, T_j=125^\circ\text{C}$	1	mA



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

3 Quadrants							
Symbol	Test Condition	Quadrant		Value			Unit
				BW	CW	SW	
I_{GT}	$V_D=12\text{V}, R_L=30\Omega$	I - II - III	Max	50	35	10	mA
V_{GT}		I - II - III	Max	1.3			
V_{GD}	$V_D=V_{DRM}, R_L=3.3\text{K}\Omega, T_j=125^{\circ}\text{C}$	I - II - III	Min	0.2			V
I_L	$I_G=1.2I_{GT}$	I - III	Max	70	50	25	mA
		II		80	60	30	
I_H	$I_T=100\text{mA}$		Max	50	35	15	mA
d_V/d_t	$V_D=2/3V_{DRM}, \text{Gate open}, T_j=125^{\circ}\text{C}$		Min	1000	500	40	V/uS

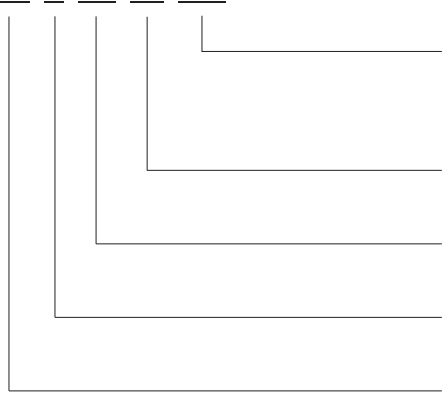
4 Quadrants						
Symbol	Test Condition	Quadrant		Value		Unit
				B	C	
I_{GT}	$V_D=12\text{V}, R_L=30\Omega$	I - II - III	Max	50	25	mA
		IV	Max	100	50	
V_{GT}	$V_D=12\text{V}, R_L=30\Omega$	All	Max	1.3		V
V_{GD}	$V_D=V_{DRM}, R_L=3.3\text{K}\Omega, T_j=125^{\circ}\text{C}$	All	Min	0.2		V
I_L	$I_G=1.2I_{GT}$	I - III - IV	Max	50	40	mA
		II		100	80	
I_H	$I_T=100\text{mA}$		Max	50	25	mA
d_V/d_t	$V_D=2/3V_{DRM}, \text{Gate open}, T_j=125^{\circ}\text{C}$		Min	400	200	V/uS

THERMAL RESISTANCES

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

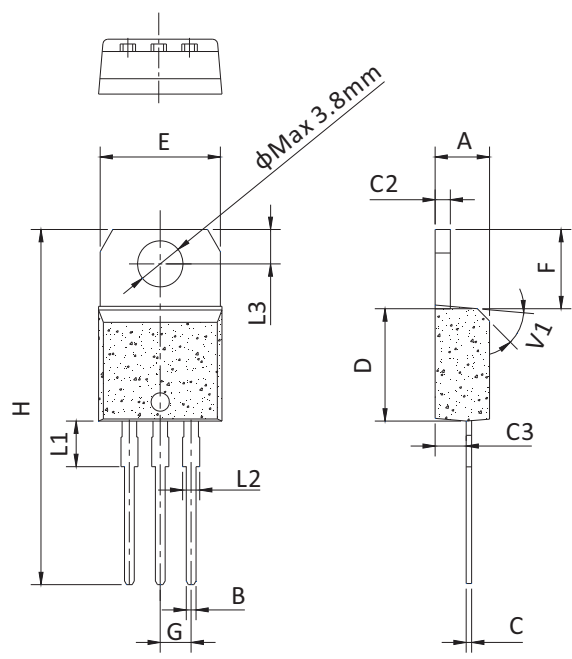


PRODUCT IDENTIFICATION

<p>ST A 8A 60 BW</p> 	<p>I_{GT} BW: $I_{GT1-3} \leq 50mA$ CW: $I_{GT1-3} \leq 35mA$ SW: $I_{GT1-3} \leq 10mA$ B: $I_{GT1-3} \leq 50mA, I_{GT4} \leq 100mA$, C: $I_{GT1-3} \leq 25mA, I_{GT4} \leq 50mA$</p> <p>$V_{DRM}/V_{RRM}$ 60: 600V 80:800V</p> <p>$I_{T(RMS)}$ 8A: 8A</p> <p>Package A: TO-220A B:TO-220B E:TO-263</p> <p>Product Line ST: Semiware Triacs</p>
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PACKAGE MECHANICAL DATA

TO-220A (Insulated)



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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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	9.90		10.20	0.390		0.402
B	14.70		15.80	0.579		0.622
C	9.40		9.60	0.370		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		0.25	0		0.010
M	1.25		1.35	0.049		0.053



FIG.1 Maximum Power Dissipation Versus RMS On-state Current

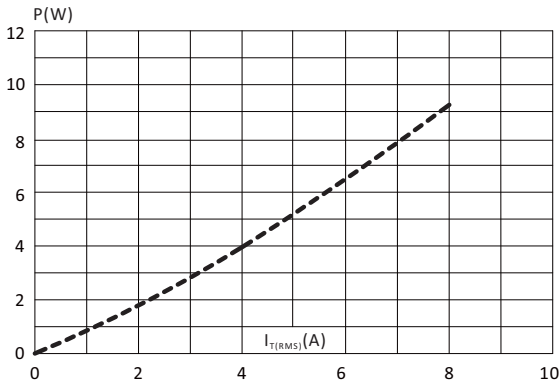


FIG.2 RMS On-state Current Versus Case Temperature

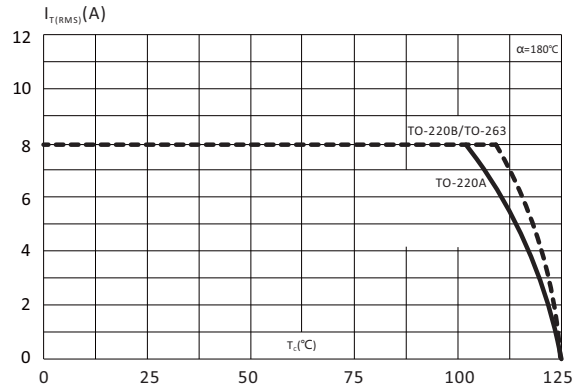


FIG.3 Surge Peak On-state Current Versus Number Of Cycles

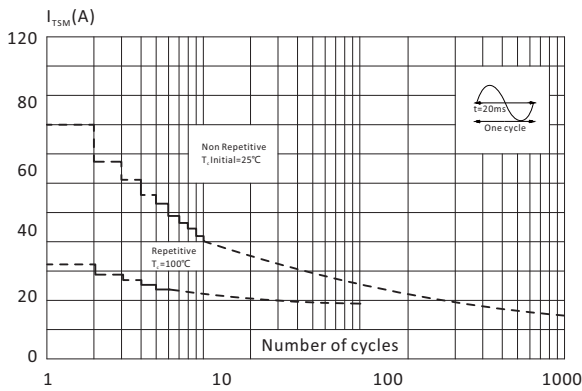


FIG.4 On-state Characteristics (Maximum Values)

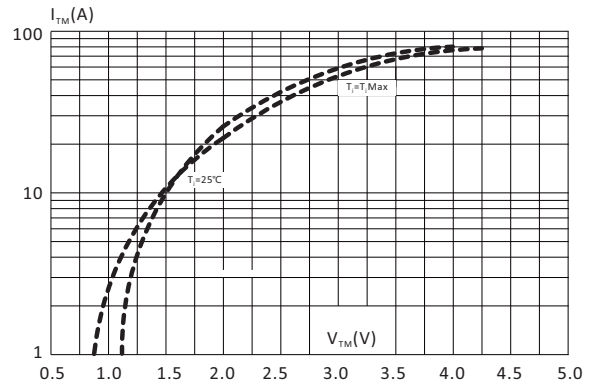


FIG.5 Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t

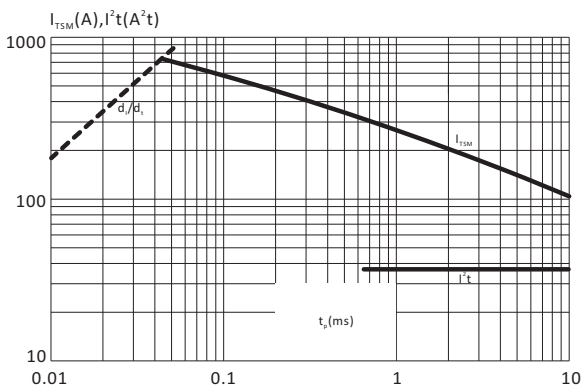
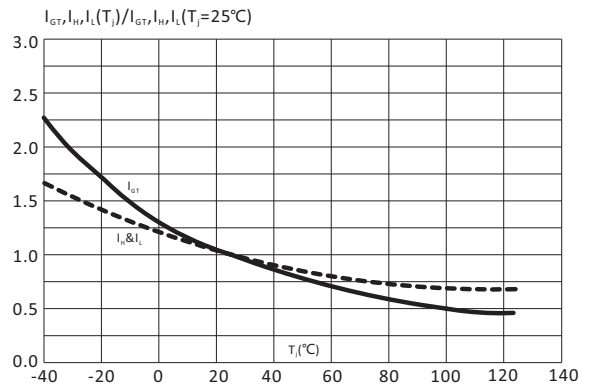


FIG.6 Relative variations of gate trigger current, holding current and latching current versus junction temperature



CONTACT US

Headquarters

A Building Caohejing I&E Park Pujiang Minhang Shanghai
China

Hotline

400-021-5756

Web

<http://www.semiware.com.cn>

By Telephone

Sales: 86-21-3463-7345

Customer Service: 86-21-3463-7172-8810/8826

Technical Support: 86-21-3463-7173-8811

By Email

Sales: sales03@semiware.com.cn

Customer Service: sales17@semiware.com.cn

Technical Support: fae03@semiware.com.cn

By Fax

General: 86-21-3965-0654

Sales: 86-21-3463-7458

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