

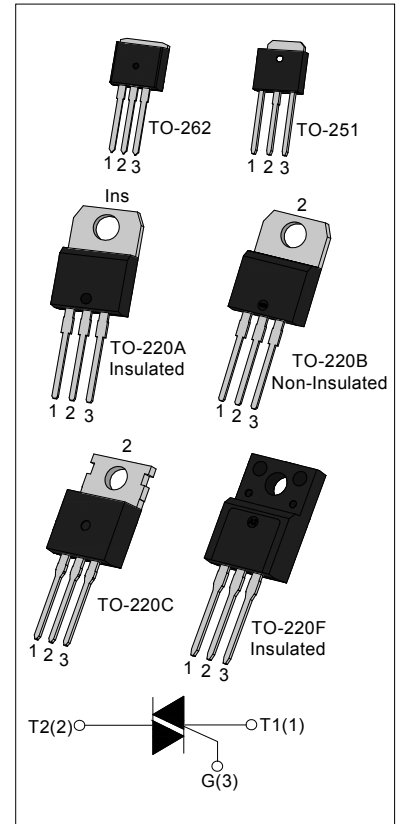


JST08 Series 8A TRIACs

Rev.9.0

DESCRIPTION:

With high ability to withstand the shock loading of large current, JST08 series triacs 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, JST08A provides a rated insulation voltage of 2500 V_{RMS}, and JST08F provides a rated insulation voltage of 2000 V_{RMS}, complying with UL standards (File ref: E252906). All the packages above are RoHS compliant.(2011/65/EU)



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	8	A
V_{DRM}/V_{RRM}	600/800/1200	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}	600/800/1200	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)		V_{RRM}	600/800/1200	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-251/TO-220C TO-220B(Non-Ins) ($T_c=100^\circ\text{C}$)	$I_{T(RMS)}$	8	A
	TO-220A(Ins)/ TO-220F(Ins) ($T_c=95^\circ\text{C}$)			
	TO-262 ($T_c=90^\circ\text{C}$)			
Non repetitive surge peak on-state current (full cycle, F=50Hz)		I_{TSM}	80	A

I ² t value for fusing (tp=10ms)	I ² t	32	A ² s
Critical rate of rise of on-state current (I _G =2×I _{GT})	di/dt	50	A/μs
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°C unless otherwise specified)

3 Quadrants

Symbol	Test Condition	Quadrant		Value				Unit
				TW	SW	CW	BW	
I _{GT}	V _D =12V R _L =33Ω	I - II -III	MAX	5	10	35	50	mA
V _{GT}		I - II -III	MAX	1.5				V
V _{GD}	V _D =V _{DRM} T _j =125°C R _L =3.3KΩ	I - II -III	MIN	0.2				V
I _L	I _G =1.2I _{GT}	I -III	MAX	20	25	50	70	mA
		II		25	35	70	90	
I _H	I _{TM} =100mA		MAX	15	20	40	60	mA
dV/dt	V _D =2/3V _{DRM} Gate Open T _j =125°C		MIN	50	200	500	1000	V/μs

4 Quadrants

Symbol	Test Condition	Quadrant		Value		Unit
				C	B	
I _{GT}	V _D =12V R _L =33Ω	I - II -III	MAX	25	50	mA
		IV		50	70	
V _{GT}		ALL	MAX	1.5		V
V _{GD}	V _D =V _{DRM} T _j =125°C R _L =3.3KΩ	ALL	MIN	0.2		V
I _L	I _G =1.2I _{GT}	I -III-IV	MAX	50	70	mA
		II		70	90	
I _H	I _{TM} =200mA		MAX	40	60	mA
dV/dt	V _D =2/3V _{DRM} Gate Open T _j =125°C		MIN	200	500	V/μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM} = 11A$ $t_p = 380\mu s$	$T_j = 25^\circ C$	1.5	V
I_{DRM}	$V_D = V_{DRM}$ $V_R = V_{RRM}$	$T_j = 25^\circ C$	5	μA
I_{RRM}		$T_j = 125^\circ C$	1	mA

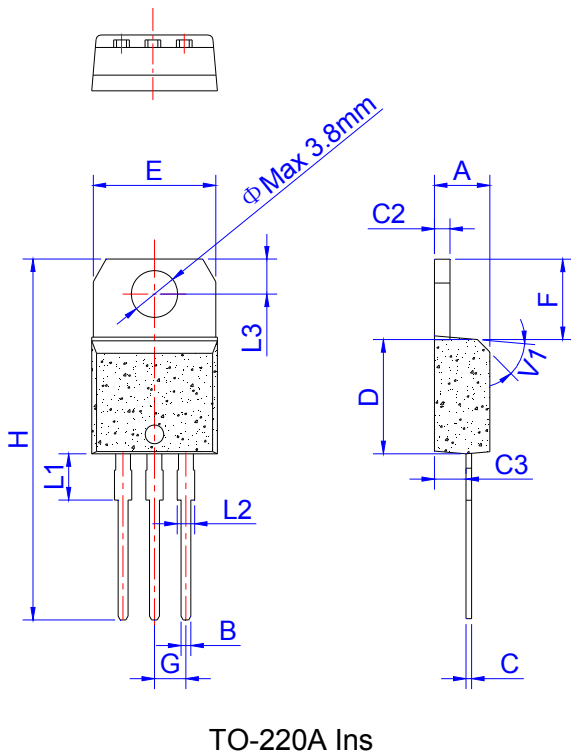
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-251	2.1	$^\circ C/W$
		TO-220A(Ins)	2.7	
		TO-220C/ TO-220B(Non-Ins)	1.8	
		TO-220F(Ins)	2.9	
		TO-262	3.0	

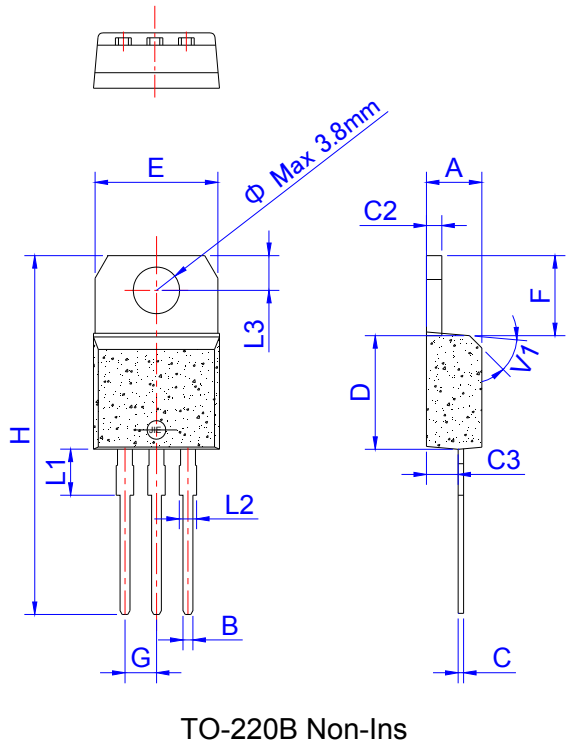
ORDERING INFORMATION

<p>JieJie Microelectronics Co.,Ltd</p> <p style="text-align: center;">Triacs</p> <p style="text-align: center;">$I_T(RMS): 8A$</p> <p>A: TO-220A(Ins) F: TO-220F(Ins) B: TO-220B(Non-Ins) C: TO-220C H: TO-251 D: TO-262 DTR: TO-262(Tape&Reel)</p>	<p>J ST 08 C -800 SW</p>	<p>TW: $I_{GT1-3} \leq 5mA$ SW: $I_{GT1-3} \leq 10mA$ CW: $I_{GT1-3} \leq 35mA$ BW: $I_{GT1-3} \leq 50mA$ C: $I_{GT1-3} \leq 25mA$ $I_{GT4} \leq 50mA$ B: $I_{GT1-3} \leq 50mA$ $I_{GT4} \leq 70mA$</p> <p>600: $V_{DRM} / V_{RRM} \geq 600V$ 800: $V_{DRM} / V_{RRM} \geq 800V$ 1200: $V_{DRM} / V_{RRM} \geq 1200V$</p>
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PACKAGE MECHANICAL DATA

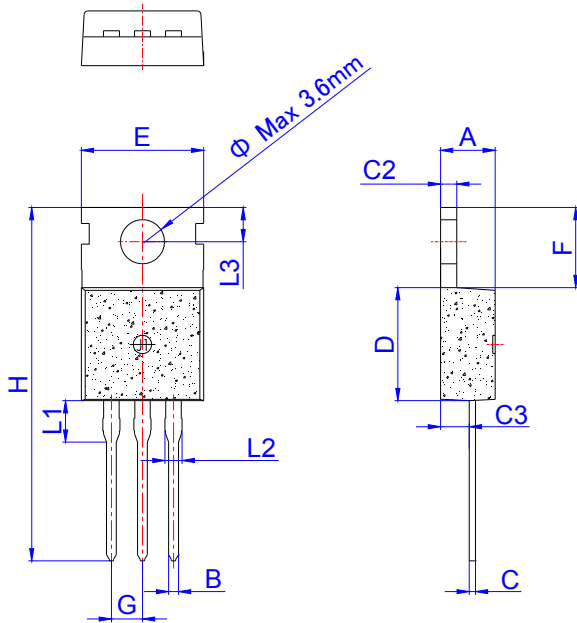


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	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



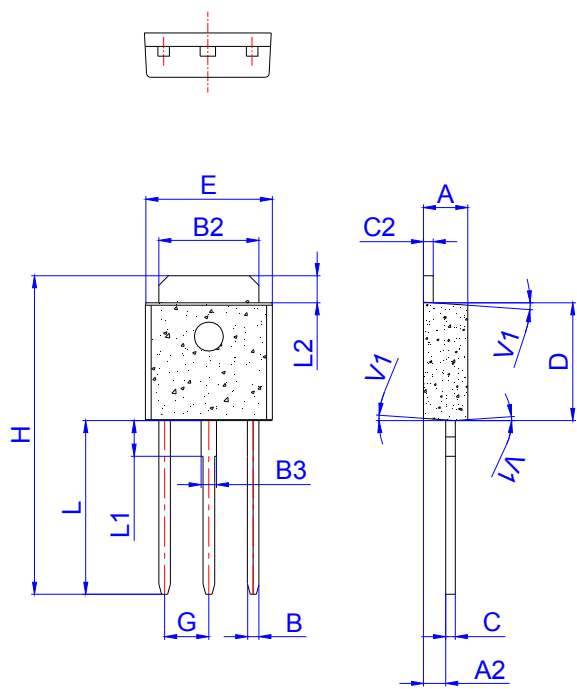
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G		2.54			0.1	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

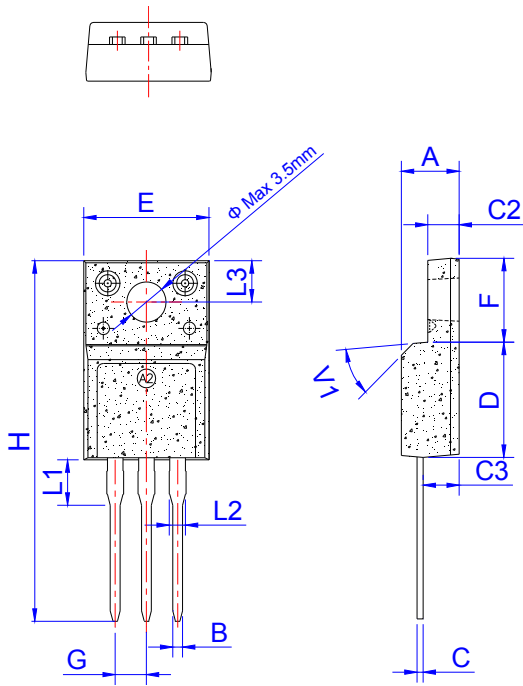
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		1.181
B	0.70		0.90	0.027		0.035
C	0.45		0.60	0.018		0.024
C2	1.23		1.32	0.048		0.052
C3	2.20		2.60	0.086		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.3	0.390		0.406
F	6.30		6.90	0.248		0.272
G		2.54			0.1	
H	28.0		29.8	11.0		11.7
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	



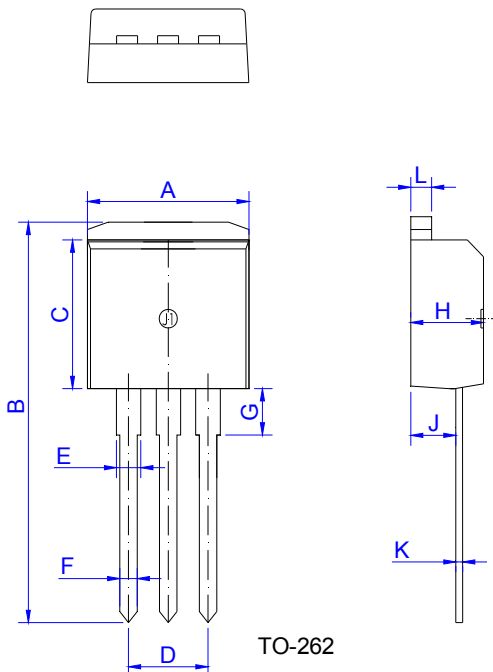
TO-251

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.095
A2	0.90		1.20	0.035		0.047
B	0.55		0.65	0.022		0.026
B2	5.10		5.40	0.200		0.213
B3	0.76		0.85	0.030		0.033
C	0.45		0.62	0.018		0.024
C2	0.48		0.62	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.70	0.252		0.264
G		2.30			0.091	
H	16.0		17.0	0.630		0.669
L	8.90		9.40	0.350		0.370
L1	1.80		1.90	0.071		0.075
L2	1.37		1.50	0.054		0.059
V1		4°			4°	

PACKAGE MECHANICAL DATA

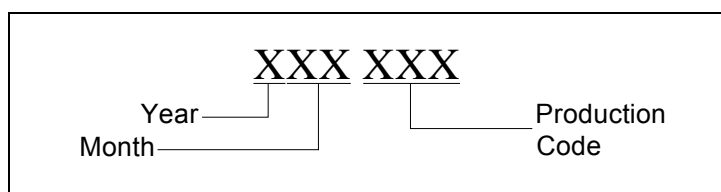
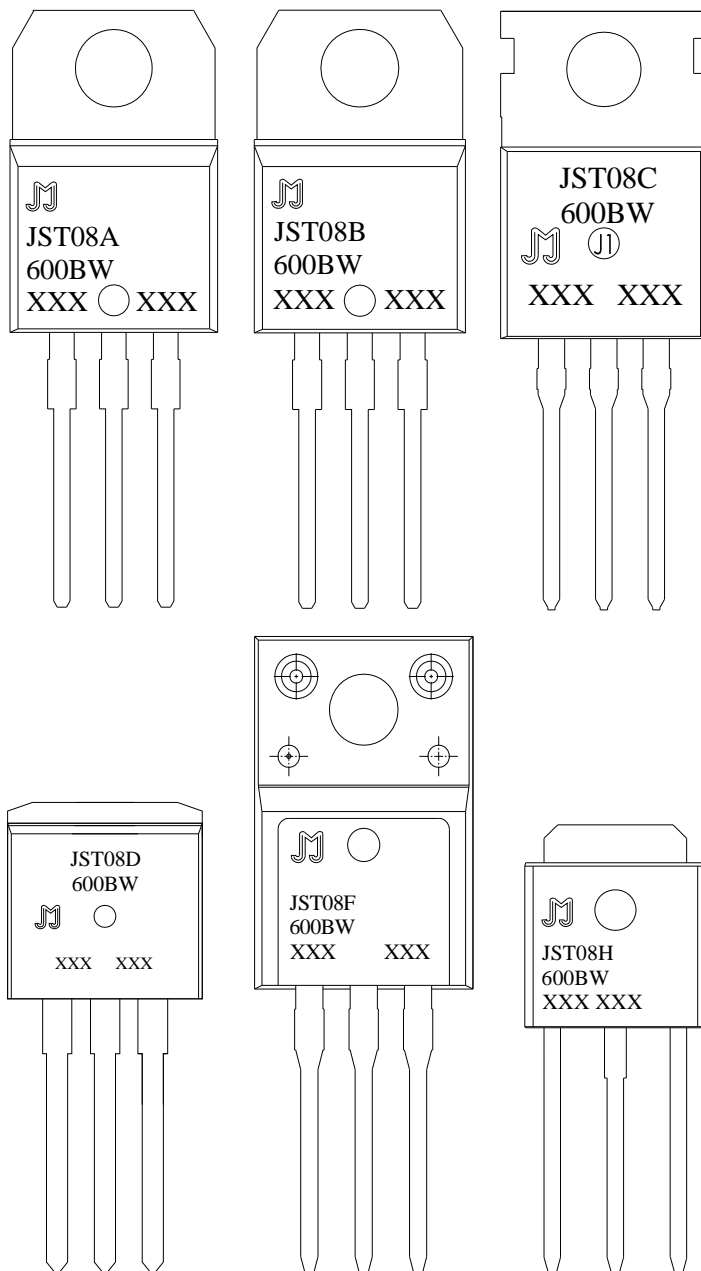


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		6.80	0.252		0.268
G		2.54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



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.95		10.20	0.392		0.402
B	23.25		23.45	0.915		0.923
C	8.90		9.10	0.35		0.358
D	5.00		5.20	0.197		0.205
E	1.20		1.35	0.047		0.053
F	0.80		0.85	0.031		0.033
G	3.30		3.60	0.130		0.142
H	4.45		4.55	0.175		0.179
J	2.50		2.70	0.098		0.106
K	0.38		0.42	0.015		0.017
L	1.25		1.29	0.049		0.051

MARKING



PACKAGE INFORMATION

PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220A	TUBE	50	1,000	8,000
TO-220B	TUBE	50	1,000	8,000
TO-220C	TUBE	50	1,000	8,000
TO-220F	TUBE	50	1,000	8,000
TO-262	TUBE	50	1,000	8,000
TO-251	TUBE	80	4,000	32,000

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

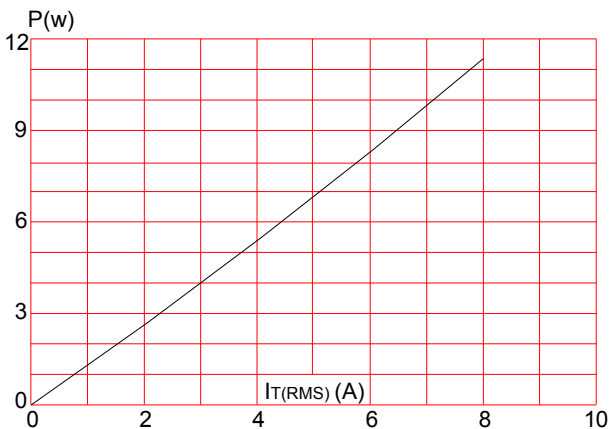


FIG.3: Surge peak on-state current versus number of cycles

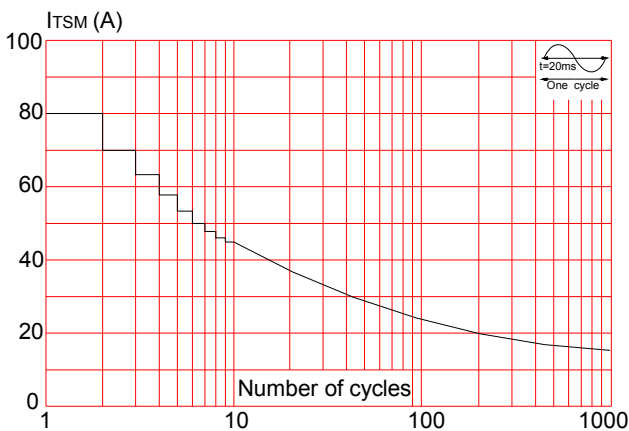


FIG.2: RMS on-state current versus case temperature

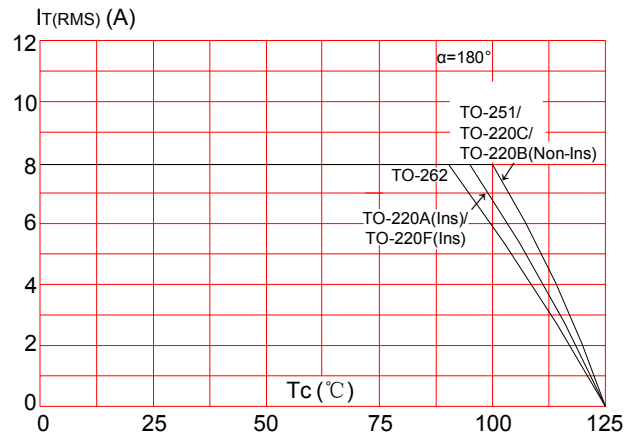


FIG.4: On-state characteristics (maximum values)

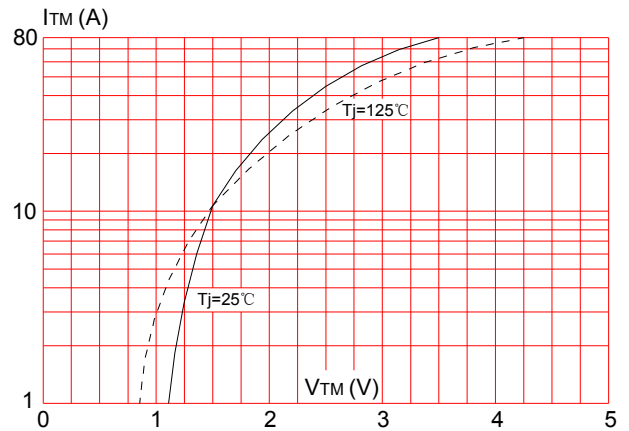


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

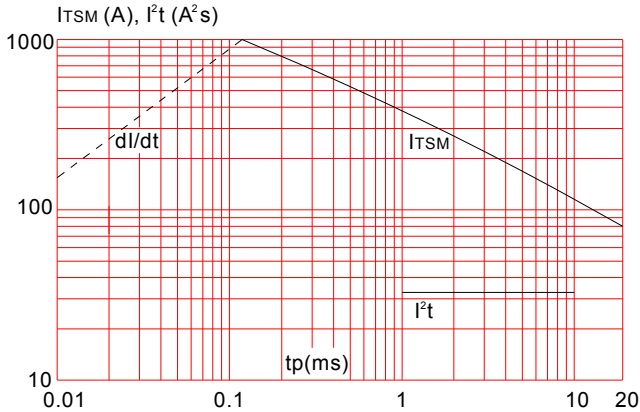
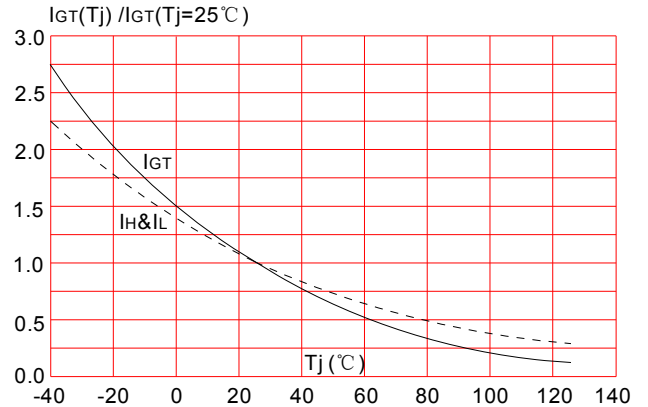



FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



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