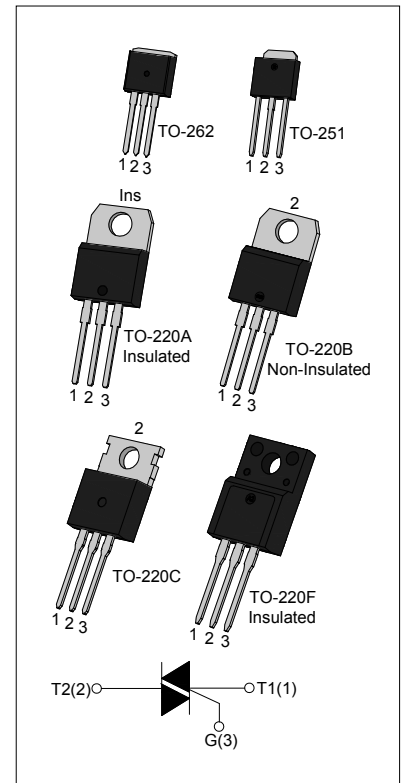




### DESCRIPTION:

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<sub>RMS</sub>, and JST08F provides a rated insulation voltage of 2000 V<sub>RMS</sub>, 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 <sup>2</sup> t value for fusing (tp=10ms)	I <sup>2</sup> t	32	A <sup>2</sup> s
Critical rate of rise of on-state current (I <sub>G</sub> =2×I <sub>GT</sub> )	di/dt	50	A/μs
Peak gate current	I <sub>GM</sub>	4	A
Average gate power dissipation	P <sub>G(AV)</sub>	1	W
Peak gate power	P <sub>GM</sub>	5	W

**ELECTRICAL CHARACTERISTICS** (T<sub>j</sub>=25°C unless otherwise specified)

3 Quadrants

Symbol	Test Condition	Quadrant		Value				Unit
				TW	SW	CW	BW	
I <sub>GT</sub>	V <sub>D</sub> =12V R <sub>L</sub> =33Ω	I - II - III	MAX	5	10	35	50	mA
V <sub>GT</sub>		I - II - III	MAX	1.5				V
V <sub>GD</sub>	V <sub>D</sub> =V <sub>DRM</sub> T <sub>j</sub> =125°C R <sub>L</sub> =3.3KΩ	I - II - III	MIN	0.2				V
I <sub>L</sub>	I <sub>G</sub> =1.2I <sub>GT</sub>	I - III	MAX	20	25	50	70	mA
		II		25	35	70	90	
I <sub>H</sub>	I <sub>TM</sub> =100mA		MAX	15	20	40	60	mA
dV/dt	V <sub>D</sub> =2/3V <sub>DRM</sub> Gate Open T <sub>j</sub> =125°C		MIN	50	200	500	1000	V/μs

4 Quadrants

Symbol	Test Condition	Quadrant		Value		Unit
				C	B	
I <sub>GT</sub>	V <sub>D</sub> =12V R <sub>L</sub> =33Ω	I - II - III	MAX	25	50	mA
		IV		50	70	
V <sub>GT</sub>		ALL	MAX	1.5		V
V <sub>GD</sub>	V <sub>D</sub> =V <sub>DRM</sub> T <sub>j</sub> =125°C R <sub>L</sub> =3.3KΩ	ALL	MIN	0.2		V
I <sub>L</sub>	I <sub>G</sub> =1.2I <sub>GT</sub>	I - III - IV	MAX	50	70	mA
		II		70	90	
I <sub>H</sub>	I <sub>TM</sub> =200mA		MAX	40	60	mA
dV/dt	V <sub>D</sub> =2/3V <sub>DRM</sub> Gate Open T <sub>j</sub> =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	$\mu A$
$I_{RRM}$		$T_j = 125^\circ C$	1	mA

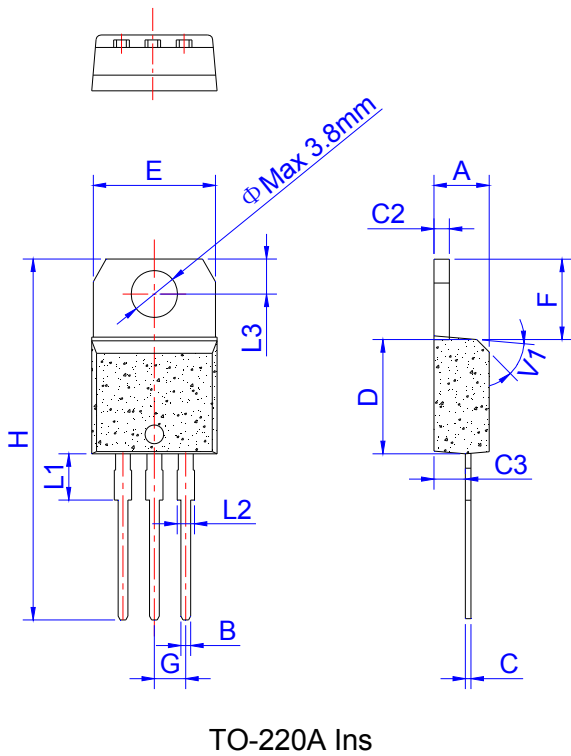
**THERMAL RESISTANCES**

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	

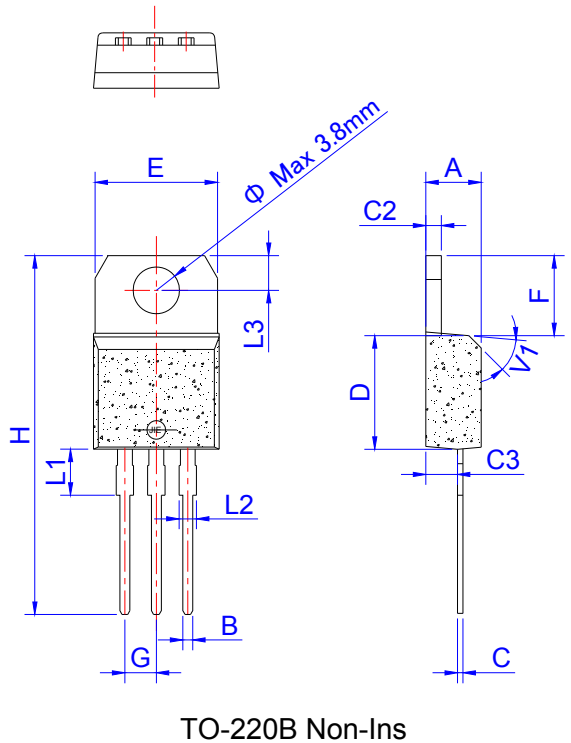
**ORDERING INFORMATION**

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

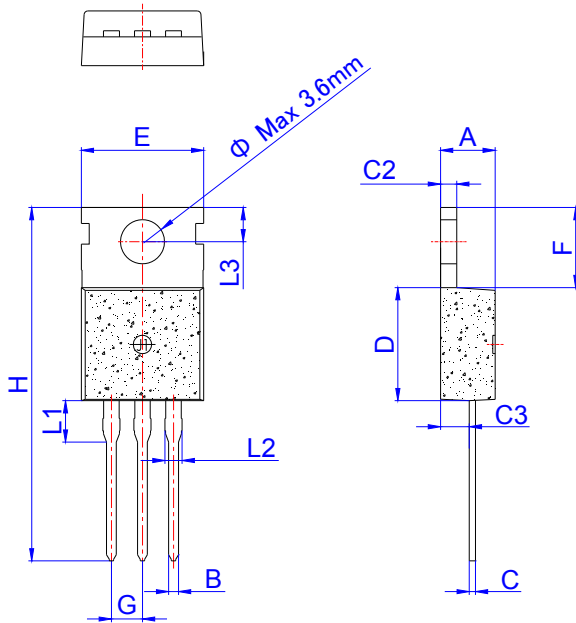


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	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



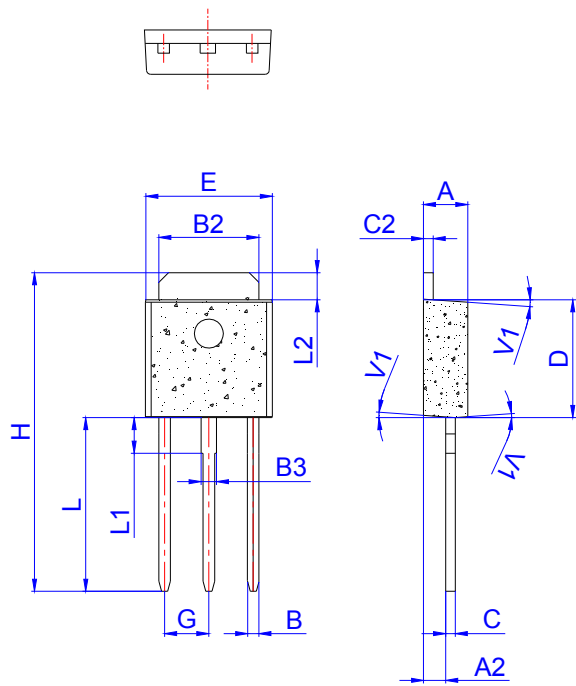
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G		2.54			0.1	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

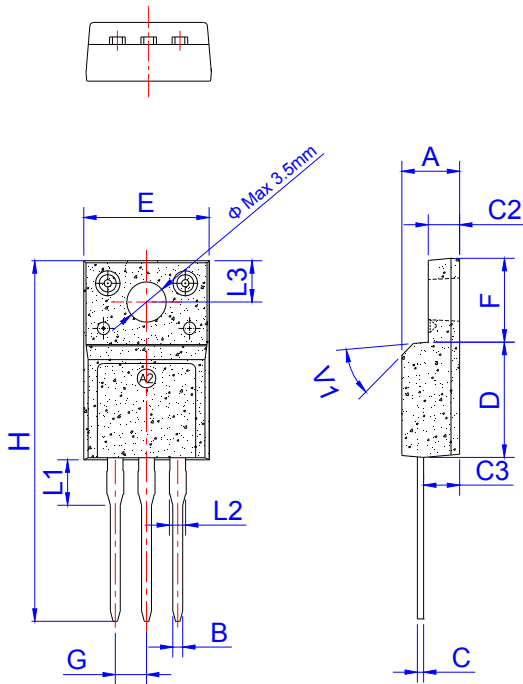
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		1.181
B	0.70		0.90	0.027		0.035
C	0.45		0.60	0.018		0.024
C2	1.23		1.32	0.048		0.052
C3	2.20		2.60	0.086		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.3	0.390		0.406
F	6.30		6.90	0.248		0.272
G		2.54			0.1	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



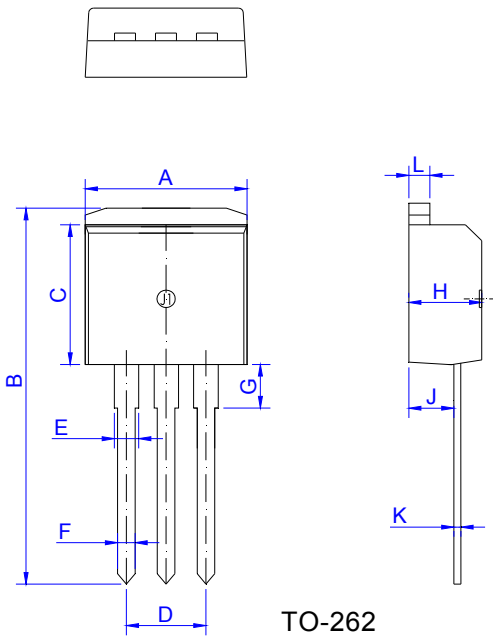
TO-251

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

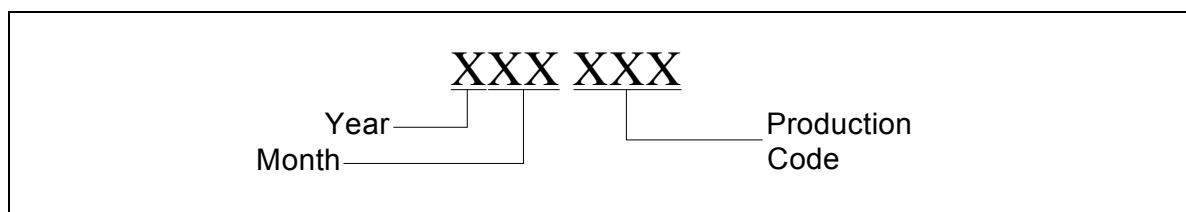
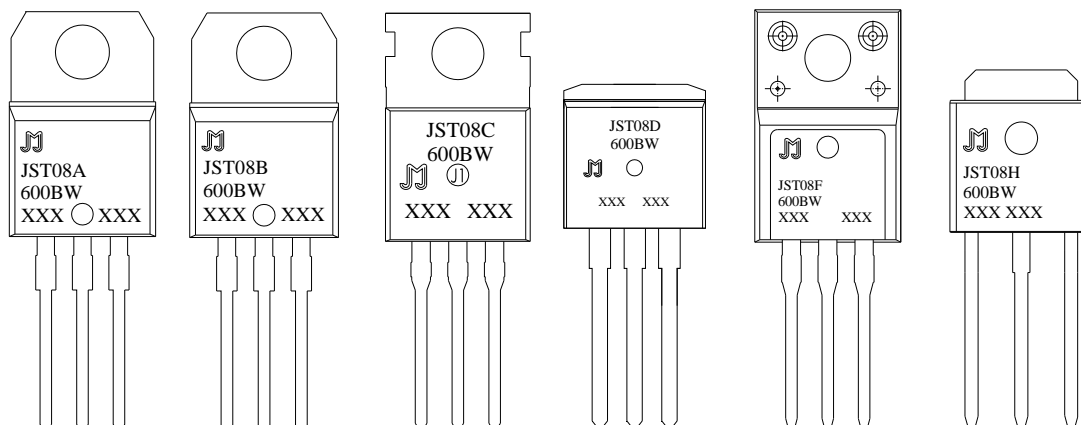


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		6.80	0.252		0.268
G		2.54			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	23.85		24.05	0.939		0.947
C	9.40		9.60	0.370		0.378
D	5.00		5.20	0.197		0.205
E	1.35		1.40	0.053		0.055
F	0.80		0.85	0.031		0.033
G	2.70		3.40	0.106		0.134
H	4.45		4.55	0.175		0.179
J	2.30		2.50	0.091		0.098
K	0.48		0.52	0.019		0.020
L	1.30		1.35	0.051		0.053

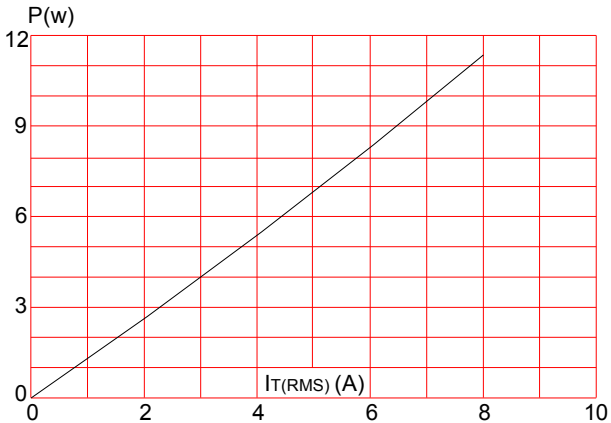
## MARKING



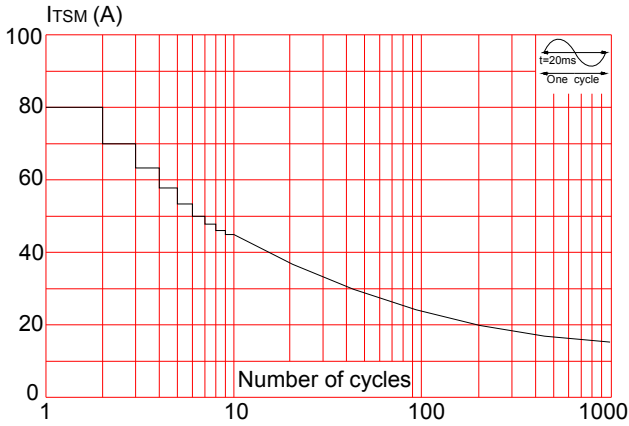
## PACKAGE INFORMATION

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

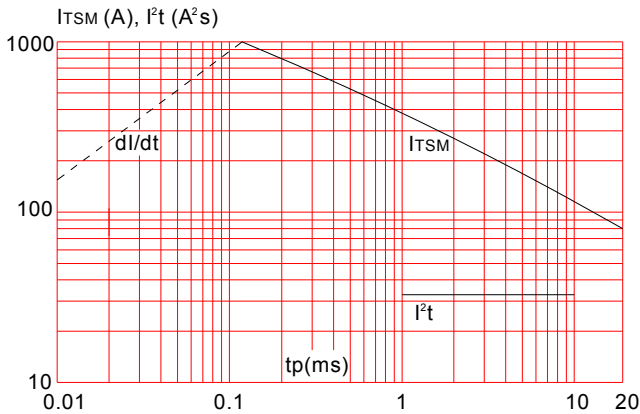
**FIG.1:** Maximum power dissipation versus RMS on-state current



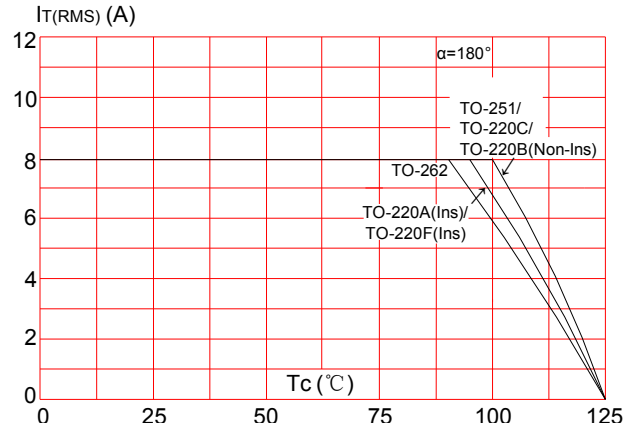
**FIG.3:** Surge peak on-state current versus number of cycles



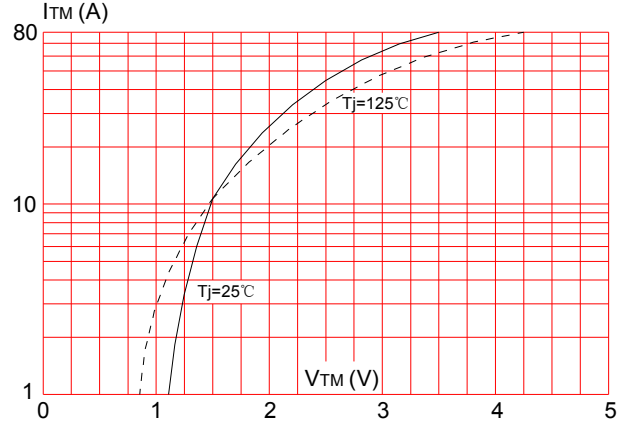
**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20\text{ms}$ , and corresponding value of  $I^2t$  ( $di/dt < 50\text{A}/\mu\text{s}$ )



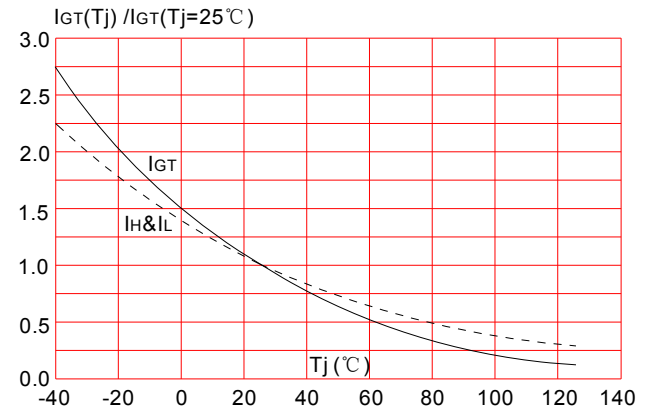
**FIG.2:** RMS on-state current versus case temperature



**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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