

**YZPST- BTA208 Series 8A Triacs**

**DESCRIPTION:**

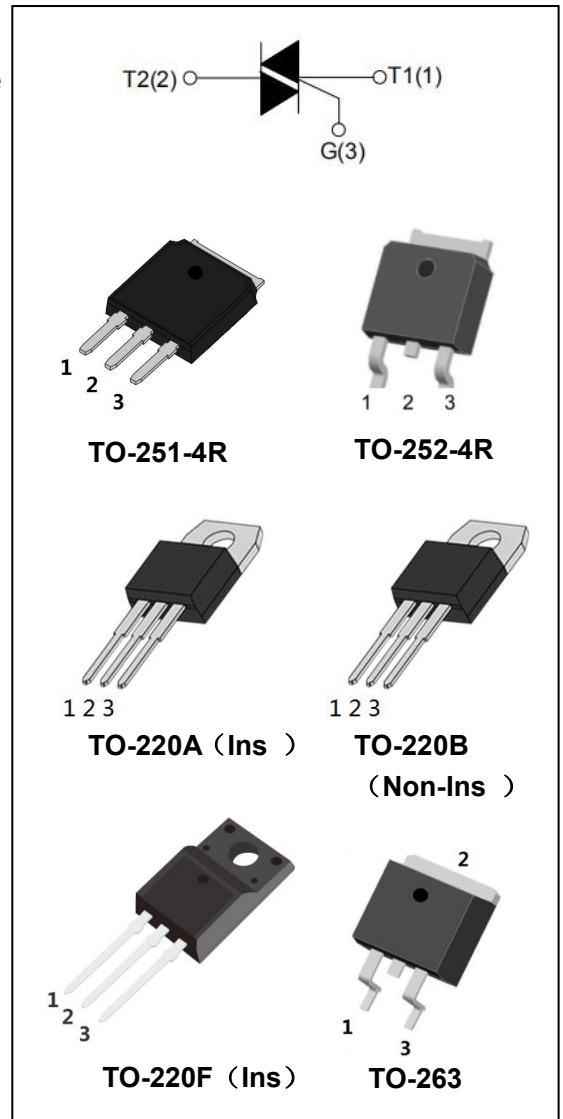
With high ability to withstand the shock loading of Large current, BTA208 series triacs provide high dv/dt rate with strong resistance to electromagnetic interface. With high commutation performances, 3 quadrants products especially recommended for use on inductive load. From all three terminals to external heatsink, BTA208 provides a rated insulation voltage of 2500 V<sub>RM</sub> scomplying with UL standards (File ref: E516503).

**MAIN FEATURES:**

symbol	value	unit
I <sub>T(RMS)</sub>	8	A
V <sub>DRM</sub> /V <sub>RRM</sub>	600/800	V
V <sub>TM</sub>	≤1.5	V

**ABSOLUTE MAXIMUM RATINGS:**

Symbol	Parameter	Value	Unit
I <sub>TSM</sub>	Non repetitive surge peak on-state Current (tp=10ms)	80	A
I <sup>2</sup> t	(tp=10ms)	32	A <sup>2</sup> S
di/dt	I <sub>G</sub> =2IGT, tr≤100ns,Tj=125°C	50	A/μs
I <sub>GM</sub>	Peak gate current(tp=20us)	2	A
P <sub>G(AV)</sub>	Average gate power	1=0.5	W
T <sub>stg</sub>	Storage temperature	-40--+125	°C
T <sub>j</sub>	Operating junction temperature	-40--+125	°C
Viso	AC RMS Applied for 1 minute Between lead and case	1800	V



**BTA208 Series 8A Triacs**

I <sup>2</sup> t value for fusing (t <sub>p</sub> =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:**

Parameter	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>				1.5				
V <sub>GD</sub>	V <sub>D</sub> =V <sub>DRM</sub>	I - II -III	MIN	0.2				V
I <sub>H</sub>	I <sub>T</sub> =100mA		MAX	10	20	40	60	mA
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	
dV/dt	V <sub>D</sub> =2/3V <sub>DRM</sub> T <sub>j</sub> =125°C Gate open		MIN	50	200	500	1000	V/μs

**BTA208 Series 8A Triacs**

		II		70	90	
dV/dt	$V_D=2/3V_{DRM}$ $T_j=125^\circ\text{C}$ Gate open		MIN	200	500	V/ $\mu\text{s}$

**STATIC CHARACTERISTICS**

Symbol	Test Condition			Value	Unit
$V_{TM}$	$I_{TM}=11\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	MAX	1.5	V
$I_{DRM}$ $I_{RRM}$	$V_{DRM}=V_{RRM}$	$T_j=25^\circ\text{C}$	MAX	5	$\mu\text{A}$
		$T_j=125^\circ\text{C}$		1	mA

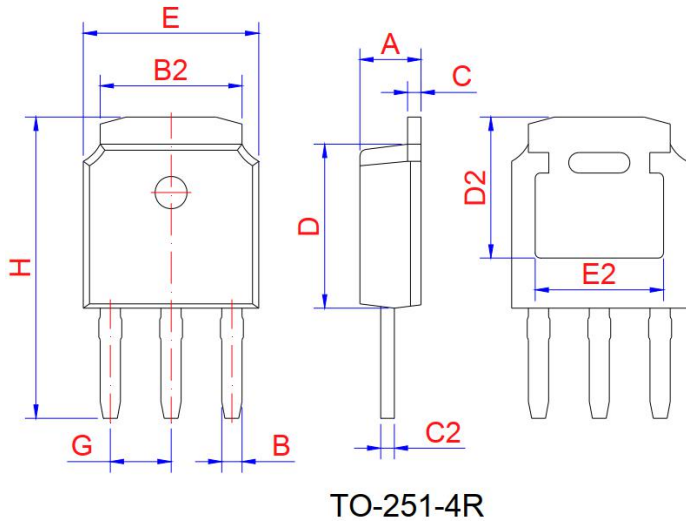
**THERMAL RESISTANCES**

Symbol	Test Condition		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-251-4R/ TO-252-4R	2.0	$^\circ\text{C/W}$
		TO-220A(Ins)	2.8	
		TO-220B(Non-Ins)	2.9	
		TO-220F(Ins)	3.1	
		TO-263	3.0	

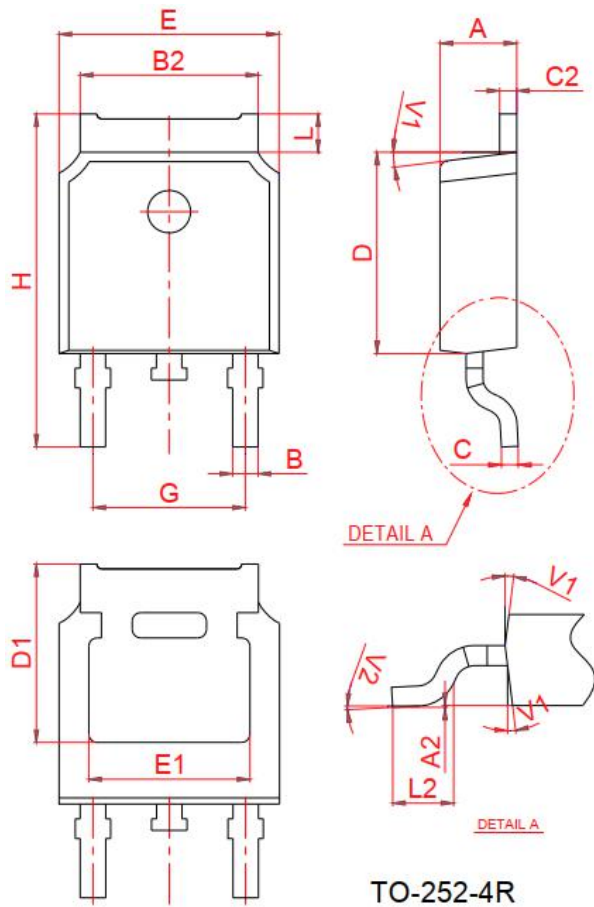
**ORDERING INFORMATION**

<b>B T A 2 0 8 - 6 0 0 C W</b>			
Triacs A: Insulated B: Non-Insulated	$I_{T(RMS)}: 8\text{A}$	$V_{DRM}, V_{RRM}$ : 600: 600V 800: 800V	B: $I_{GT1-3} \leq 50\text{mA}$ , $I_{GT4} \leq 100\text{mA}$ C: $I_{GT1-3} \leq 25\text{mA}$ , $I_{GT4} \leq 50\text{mA}$ TW: $I_{GT1-3} \leq 5\text{mA}$ SW: $I_{GT1-3} \leq 10\text{mA}$ CW: $I_{GT1-3} \leq 35\text{mA}$ BW: $I_{GT1-3} \leq 50\text{mA}$

**BTA208 Series 8A Triacs**  
**PACKAGE MECHANICAL DATA**

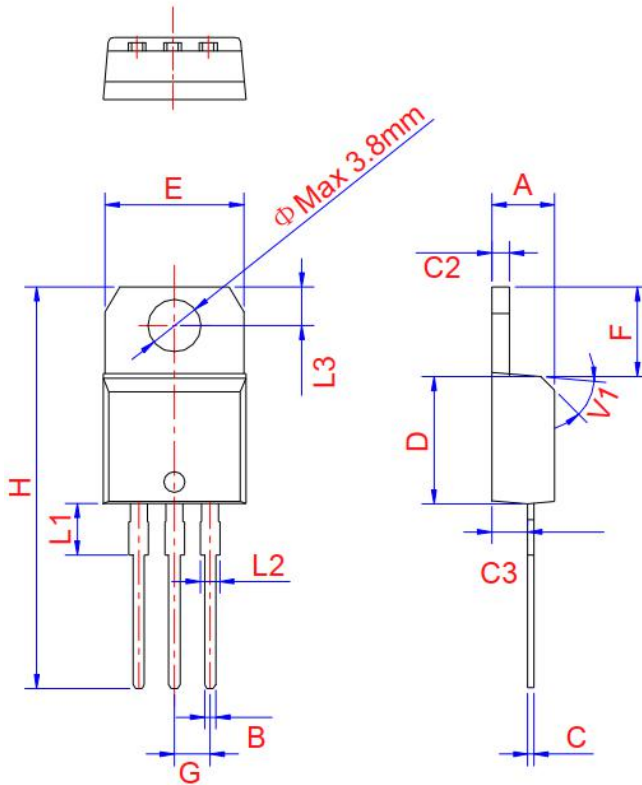


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10	2.30	2.50	0.083	0.091	0.098
B	0.66	0.76	0.86	0.026	0.030	0.034
B2	5.15	5.33	5.48	0.203	0.210	0.216
C	0.44	0.51	0.58	0.017	0.020	0.023
C2	0.44	0.51	0.58	0.017	0.020	0.023
D	5.90	6.10	6.30	0.232	0.240	0.248
D2	5.30REF			0.209REF		
E	6.40	6.60	6.80	0.252	0.260	0.268
E2	4.83REF			0.190REF		
G	2.19	2.29	2.39	0.086	0.090	0.094
H	10.60	11.20	11.80	0.417	0.441	0.465



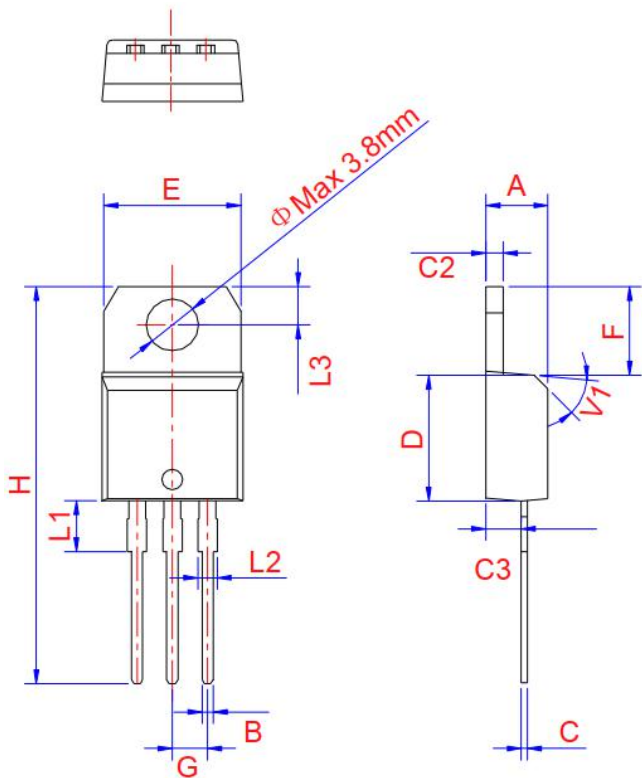
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.2		2.4	0.087		0.094
A2	0		0.1	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.1		5.46	0.201		0.215
C	0.46		0.58	0.018		0.023
C2	0.44		0.58	0.017		0.023
D	5.9		6.3	0.232		0.248
D1	5.30REF			0.211REF		
E	6.4		6.8	0.252		0.268
E1	4.63			0.182		
G	4.372		4.772	0.172		0.188
H	9.8		10.4	0.386		0.409
L	1.09		1.21	0.043		0.048
L2	1.35		1.65	0.053		0.065
V1		7°			7°	
V2	0°		6°	0°		6°

**BTA208Series 8A Triacs**



TO-220A Ins

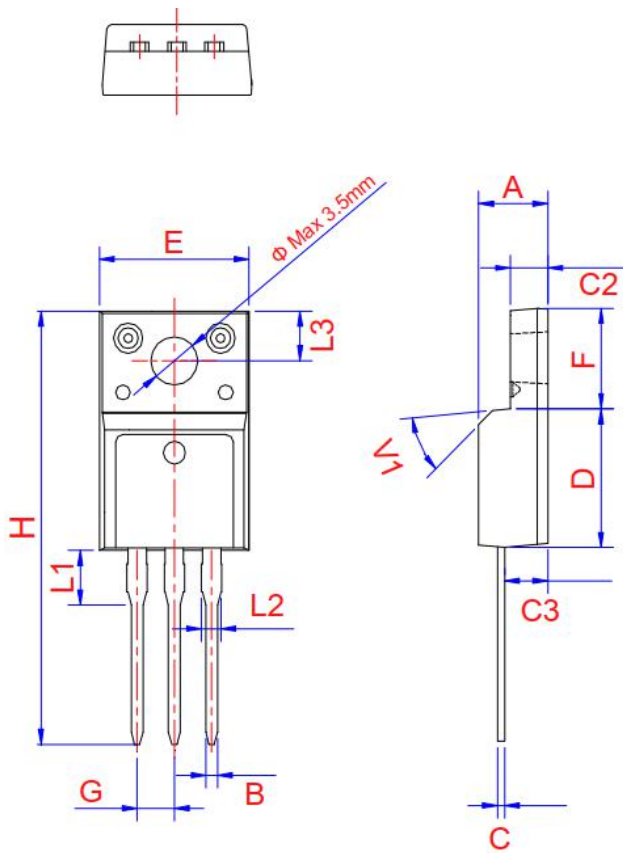
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4	4.47	4.6	0.173	0.176	0.181
B	0.61		0.88	0.024		0.035
C	0.46	0.50	0.7	0.018	0.02	0.028
C2	1.21	1.27	1.32	0.048	0.050	0.052
C3	2.4		2.72	0.094		0.107
D	8.6		9.7	0.339		0.382
E	9.8		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	
H	28		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.7	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	



TO-220B Non-Ins

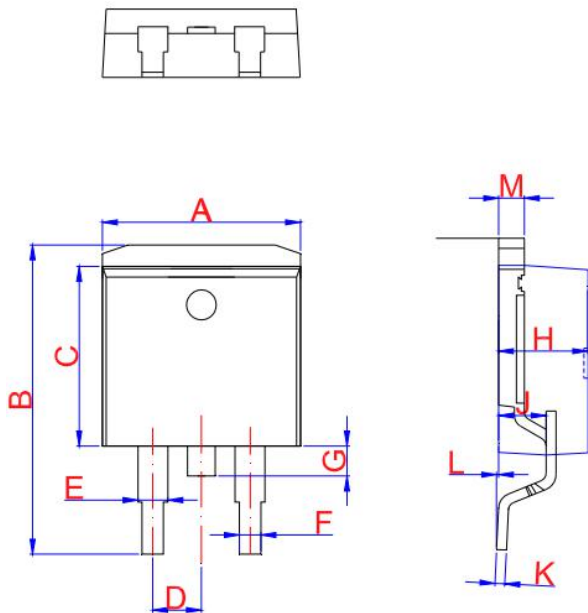
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4	4.47	4.6	0.173	0.176	0.181
B	0.61		0.88	0.024		0.035
C	0.46	0.50	0.7	0.018	0.02	0.028
C2	1.21	1.27	1.32	0.048	0.050	0.052
C3	2.4		2.72	0.094		0.107
D	8.6		9.7	0.339		0.382
E	9.8		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	
H	28		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.7	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

**BTA208Series 8A Triacs**



TO-220F Ins

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.5		4.9	0.177		0.193
B	0.74	0.8	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	2.6		3	0.102		0.118
D	8.8		9.3	0.346		0.366
E	9.8		10.4	0.386		0.41
F	6.4		6.8	0.252		0.268
G		2.54			0.1	
H	28		29.8	1.102		1.173
L1		3.63			0.148	
L2	1.14		1.7	0.045		0.067
L3	2.65	3.3	0		0.13	0.116
V1		45°			45°	



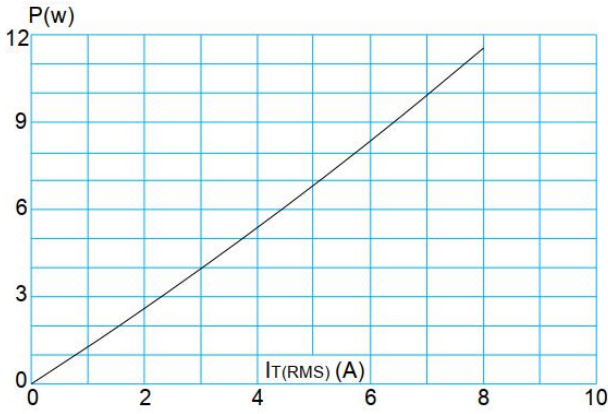
TO-263

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.9		10.3	0.390		0.406
B	14.7		15.8	0.579		0.622
C	8.5		8.9	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	4.60	4.80	0.173	0.181	0.189
J	2.40	2.60	2.80	0.094	0.102	0.110
L	0	0.1	0.25	0	0.004	0.010
M	1.17	1.27	1.37	0.046	0.05	0.054

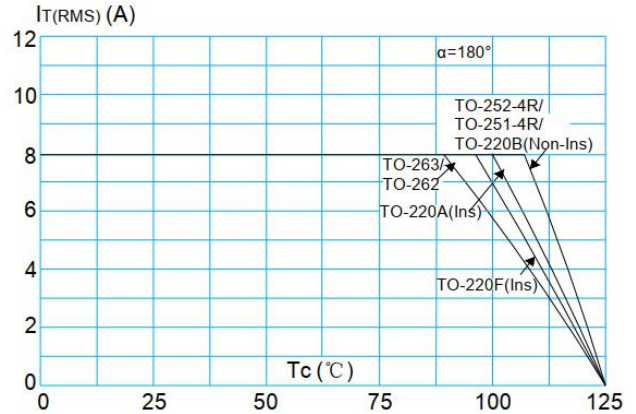


**BTA208Series 8A Triacs**

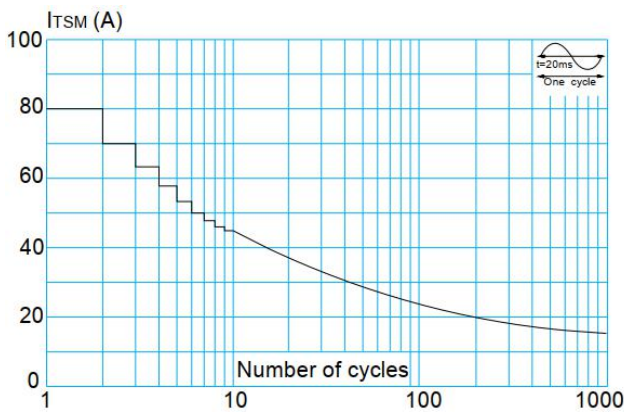
**FIG.1:** Maximum power dissipation versus RMS on-state current



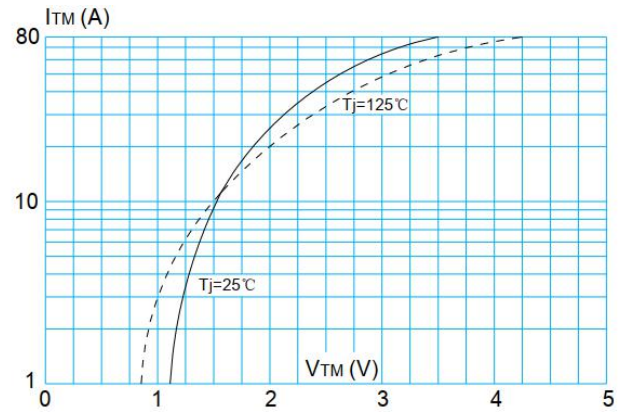
**FIG.2:** RMS on-state current versus case temperature



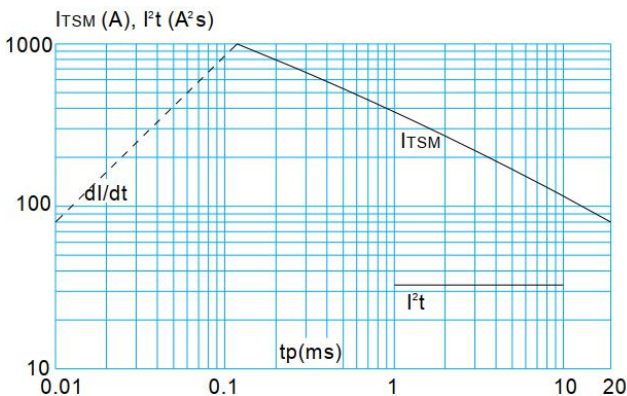
**FIG.3:** Surge peak on-state current versus number of cycles



**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  $I^2t$  ( I - II - III:  $dI/dt < 50\text{A}/\mu\text{s}$ ; IV:  $dI/dt < 10\text{A}/\mu\text{s}$ )



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

