



JR0805 Series Sensitive gate SCRs

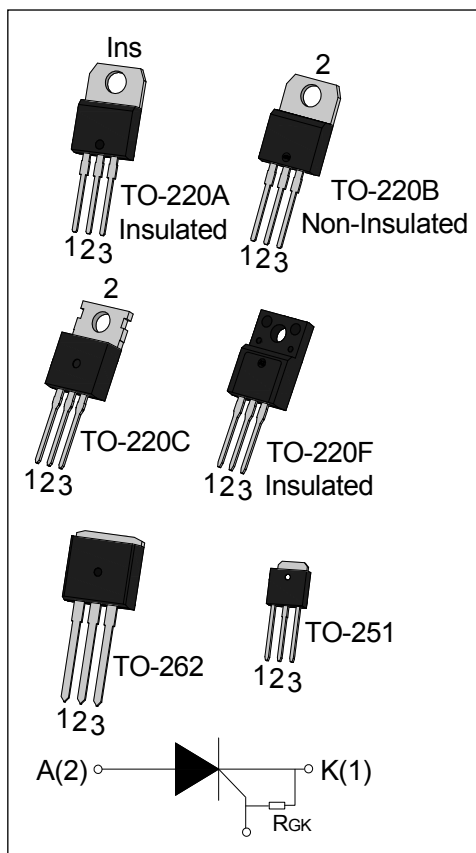
Rev.9.0

DESCRIPTION:

Because of highly sensitive triggering levels, the JR0805 SCRs are suitable for all applications where the available gate current is limited, such as hair straighteners and flame igniters.

From all three terminals to external heatsink, JR0805A provides a rated insulation voltage of 2500 V_{RMS}, and JR0805F provides a rated insulation voltage of 2000 V_{RMS}. (File ref: E252906).

All the packages mentioned are RoHS compliant. (2011/65/EU)



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	8	A
I_{GT}	≤ 200	μA
V_{TM}	≤ 1.55	V

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit	
Storage junction temperature range	T_{stg}	-40-150	$^{\circ}C$	
Operating junction temperature range	T_j	-40-125 ^①	$^{\circ}C$	
Repetitive peak off-state voltage	V_{DRM}	600	V	
Repetitive peak reverse voltage	V_{RRM}	600	V	
RMS on-state current	$I_{T(RMS)}$	TO-220A(Ins)/ TO-220F(Ins) ($T_C=95^{\circ}C$)	8	A
		TO-220B(Non-Ins)/ TO-220C/TO-251 ($T_C=100^{\circ}C$)		
		TO-262 ($T_C=90^{\circ}C$)		
Non repetitive surge peak on-state current ($t_p=10ms$)	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	di/dt	50	A/μs
Peak gate current (tp=20μs, T _j =125°C)	I _{GM}	4	A
Peak gate power (tp=20μs, T _j =125°C)	P _{GM}	2	W
Average gate power dissipation(T _j =125°C)	P _{G(AV)}	1	W

NOTE 1: When we parallel connect a ≤1KΩ resistor between Gate and Cathode, the T_j can reach 125°C; if without this resistor, the T_j only can reach 110°C.

ELECTRICAL CHARACTERISTICS (T_j=25°C unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I _{GT}	V _D =12V R _L =140Ω	-	-	200	μA
V _{GT}		-	-	0.8	V
V _{GD}	V _D =V _{DRM} T _j =125°C	0.2	-	-	V
I _L	I _G =1.2 I _{GT}	-	-	6	mA
I _H	I _T =0.05A	-	-	5	mA
dV/dt	V _D =2/3V _{DRM} T _j =125°C R _{GK} =1KΩ	10	-	-	V/μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V _{TM}	I _{TM} =16A tp=380μs	T _j =25°C	1.55	V
I _{DRM}	V _D =V _{DRM} V _R =V _{RDM}	T _j =25°C	5	μA
I _{RRM}		T _j =125°C	500	μA

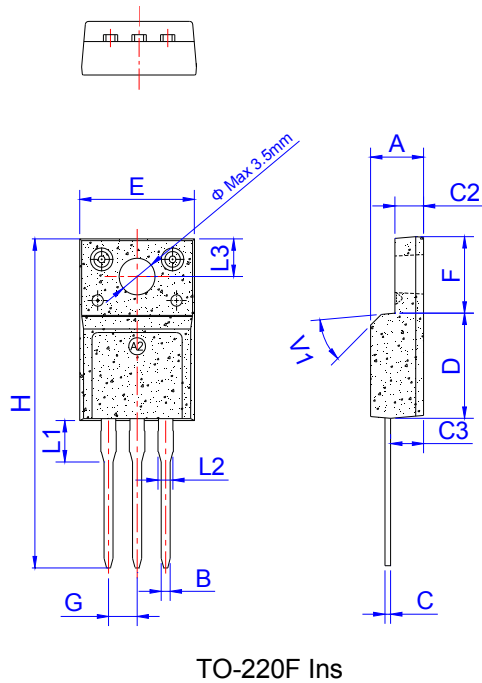
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
R _{th(j-c)}	junction to case	TO-220A(Ins)/ TO-220F(Ins)	2.9	°C/W
		TO-220B(Non-Ins)/ TO-220C	2.1	
		TO-251	2.3	
		TO-262	3.2	

ORDERING INFORMATION

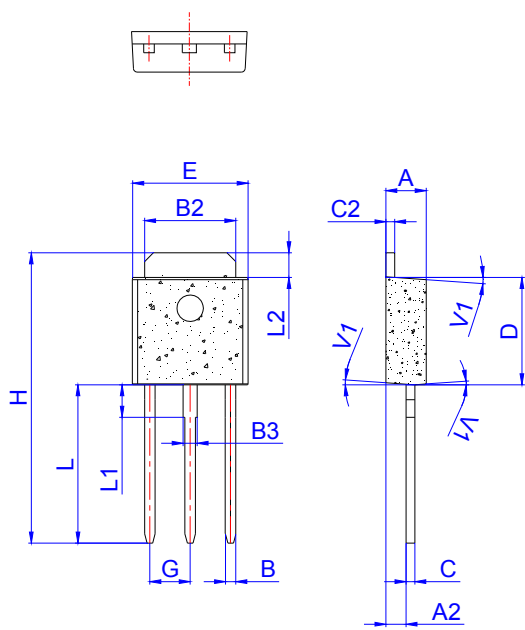
<p>J</p> <p>JieJie Microelectronics Co.,Ltd</p> <p>Sensitive gate SCRs</p>	<p>R</p> <p>$I_{T(RMS)}:8A$</p>	<p>08</p>	<p>05</p> <p>05: $I_{GT} \leq 200\mu A$</p>	<p>H</p> <p>D:TO-262 H:TO-251 C:TO-220C A:TO-220A(Ins) F:TO-220F(Ins) B:TO-220B(Non-Ins) DTR:TO-262(Tape&Reel)</p>
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PACKAGE MECHANICAL DATA



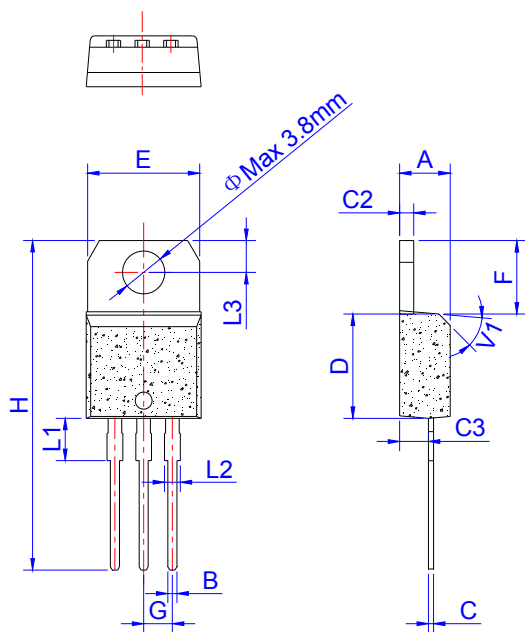
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		6.80	0.252		0.268
G		2.54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

PACKAGE MECHANICAL DATA



TO-251

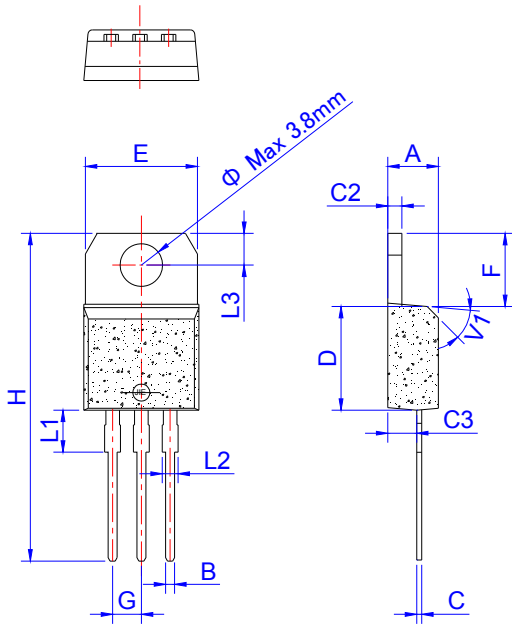
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.095
A2	0.90		1.20	0.035		0.047
B	0.55		0.65	0.022		0.026
B2	5.10		5.40	0.200		0.213
B3	0.76		0.85	0.030		0.033
C	0.45		0.62	0.018		0.024
C2	0.48		0.62	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.70	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°	



TO-220A Ins

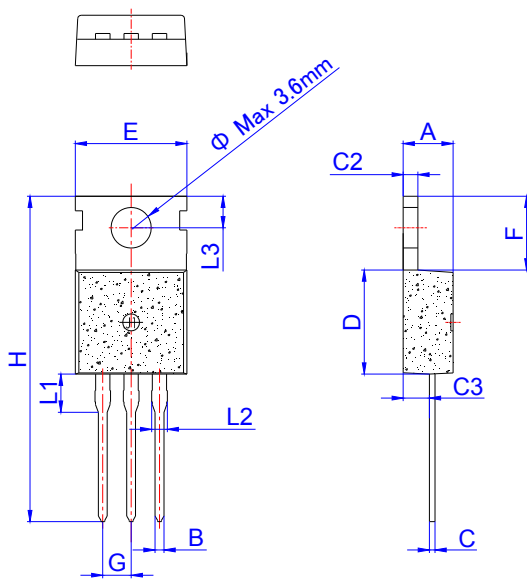
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	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

PACKAGE MECHANICAL DATA



TO-220B Non-Ins

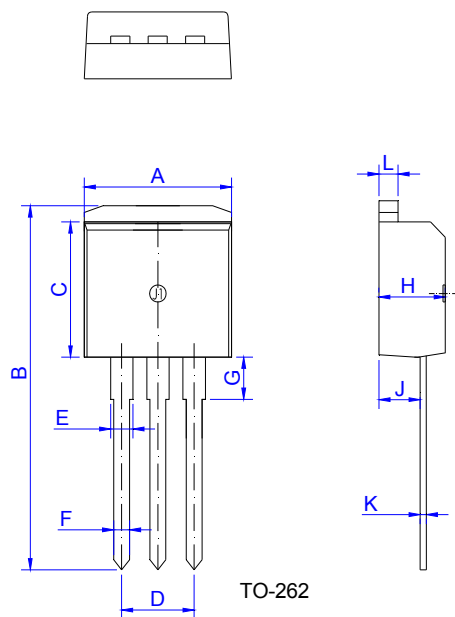
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G		2.54			0.1	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



TO-220C

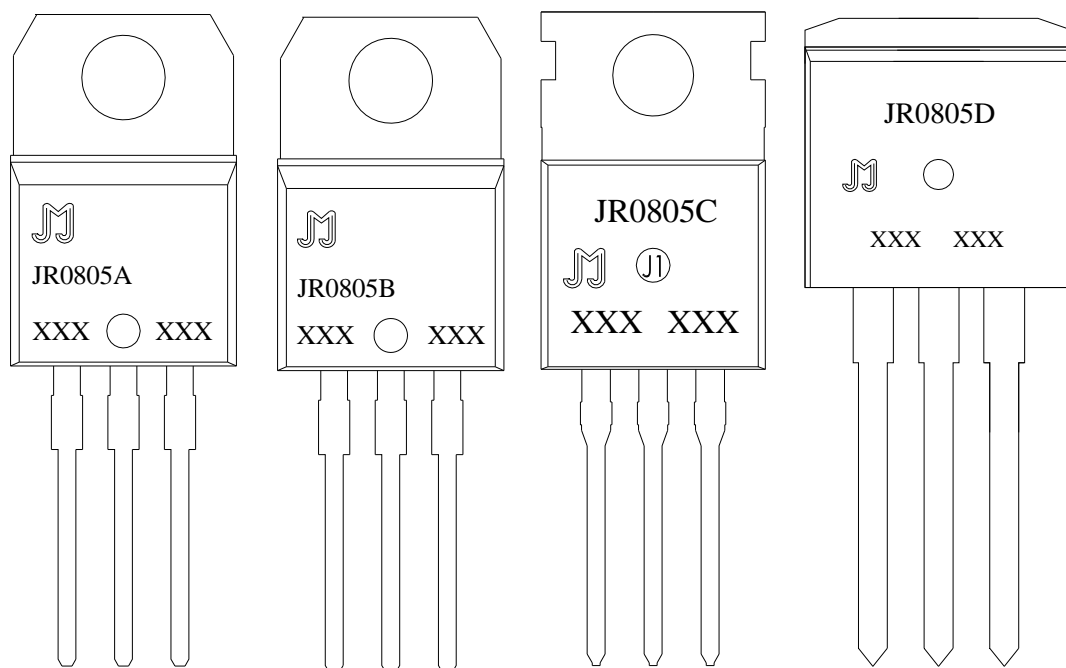
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.70		0.90	0.028		0.035
C	0.45		0.60	0.018		0.024
C2	1.23		1.32	0.048		0.052
C3	2.20		2.60	0.087		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.3	0.390		0.406
F	6.30		6.90	0.248		0.272
G		2.54			0.1	
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	

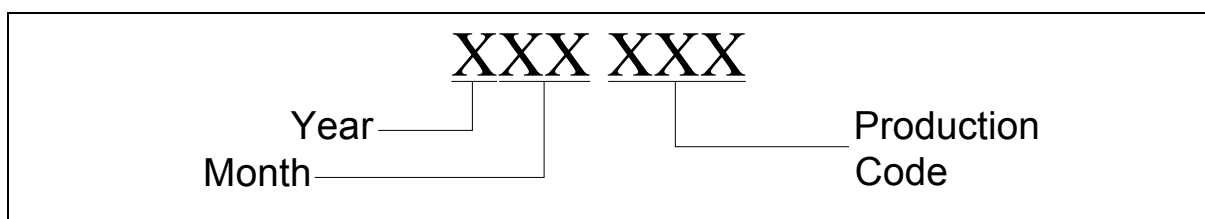
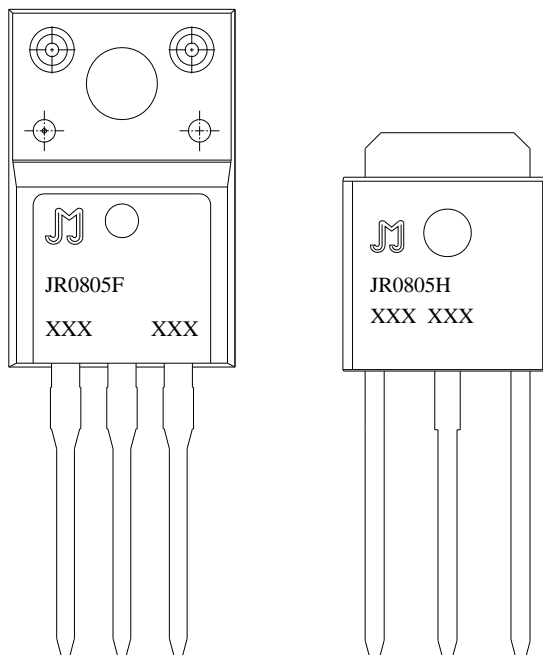
PACKAGE MECHANICAL DATA



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
PACKAGE	OUTLINE	REEL (PCS)	PER CARTON (PCS)	TAPE & REEL
TO-262	TAPING	800	4,000	13 inch

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

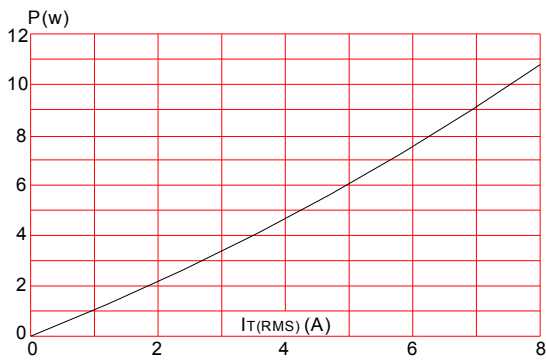


FIG.2: RMS on-state current versus case temperature

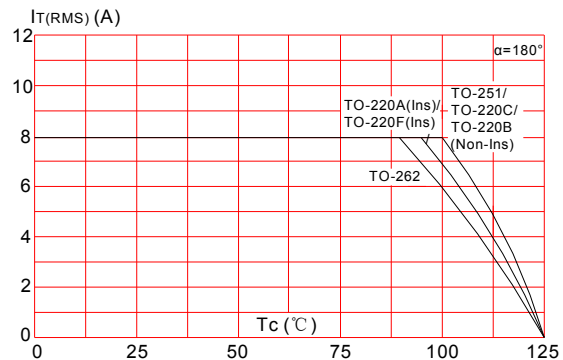


FIG.3: Surge peak on-state current versus number of cycles

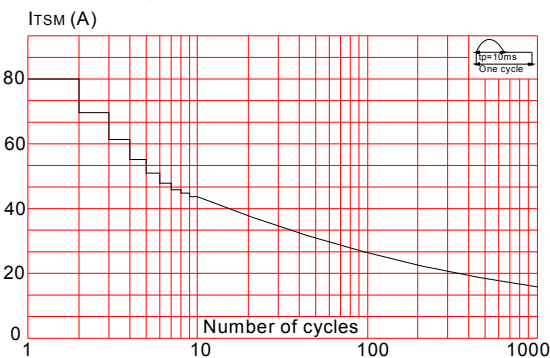


FIG.4: On-state characteristics (maximum values)

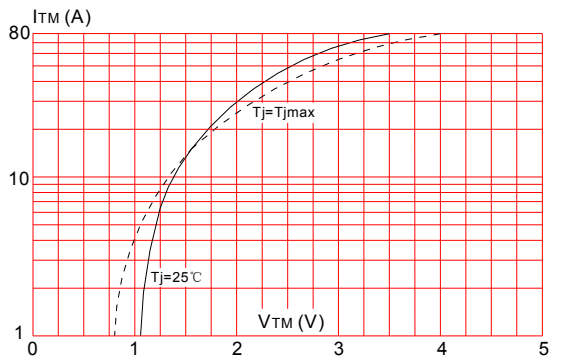


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t ($dI/dt < 50\text{A}/\mu\text{s}$)

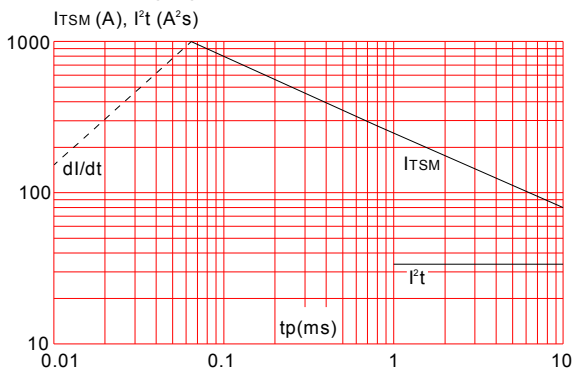
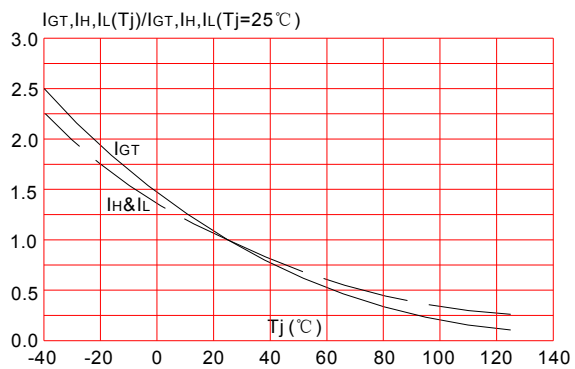



FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



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