



JR0105 Series Sensitive gate SCRs

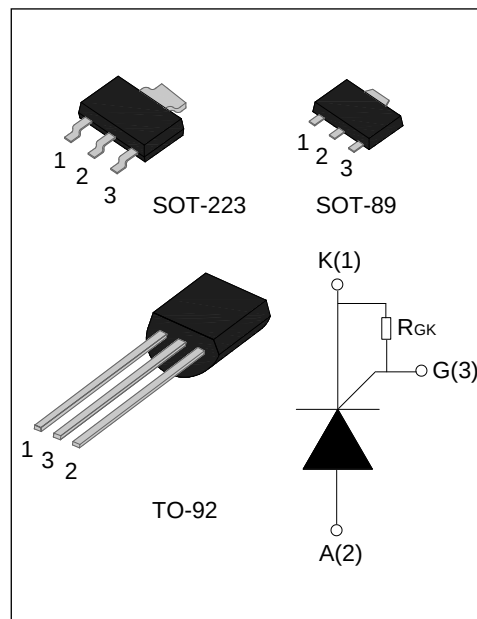
Rev.3.0

DESCRIPTION:

The JR0105 SCR series with the parallel resistor between Gate and Cathode are especially recommended for use on straight hair, igniter, anion generator, etc.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	1	A
I_{GT}	≤ 200	μA
V_{TM}	≤ 1.5	V



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{stg}	-40-150	$^{\circ}C$
Operating junction temperature range		T_j	-40-110	$^{\circ}C$
Repetitive peak off-state voltage		V_{DRM}	600	V
Repetitive peak reverse voltage		V_{RRM}	600	V
RMS on-state current	TO-92 ($T_C=60^{\circ}C$)	$I_{T(RMS)}$	1	A
	SOT-223 ($T_C=72^{\circ}C$)			
	SOT-89 ($T_C=65^{\circ}C$)			
Non repetitive surge peak on-state current (tp=10ms)		I_{TSM}	10	A
I^2t value for fusing (tp=10ms)		I^2t	0.5	A^2s
Critical rate of rise of on-state current		di/dt	50	$A/\mu s$
Peak gate current (tp=20 μs , $T_j=110^{\circ}C$)		I_{GM}	0.2	A
Peak gate power (tp=20 μs , $T_j=110^{\circ}C$)		P_{GM}	0.5	W
Average gate power dissipation($T_j=110^{\circ}C$)		$P_{G(AV)}$	0.1	W

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

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12\text{V } R_L=33\Omega$	-	50	200	μA
V_{GT}		-	0.6	0.8	V
V_{GD}	$V_D=V_{DRM} T_j=110^{\circ}\text{C } R_L=3.3\text{K}\Omega$	0.2	-	-	V
I_L	$I_G=1.2 I_{GT}$	-	-	3	mA
I_H	$I_T=0.05\text{A}$	-	-	2	mA
dV/dt	$V_D=2/3V_{DRM} T_j=110^{\circ}\text{C } R_{GK}=1\text{K}\Omega$	20	-	-	$\text{V}/\mu\text{s}$

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=1.6\text{A } t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.5	V
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	μA
I_{RRM}		$T_j=110^{\circ}\text{C}$	100	μA

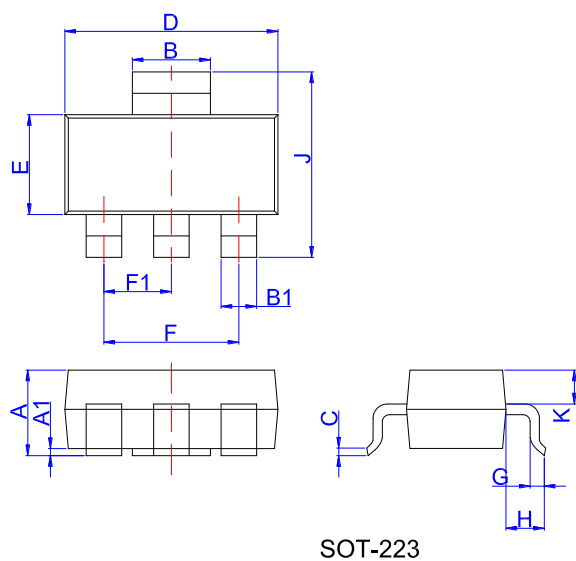
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case	TO-92	20	$^{\circ}\text{C}/\text{W}$
		SOT-223	10	
		SOT-89	16	

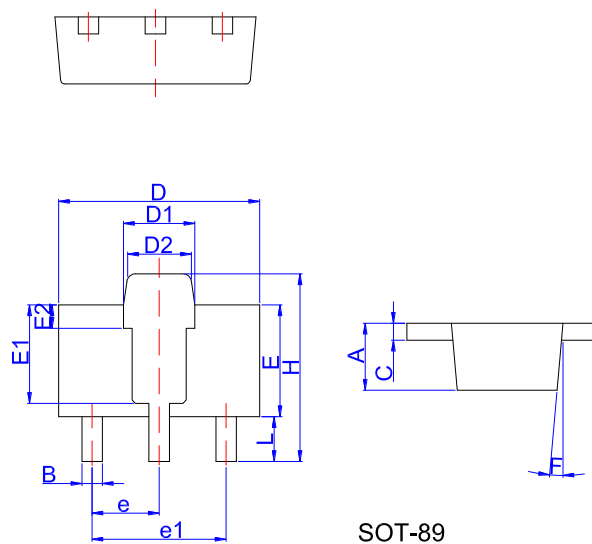
ORDERING INFORMATION

J R 01 05 U U:TO-92 V:SOT-223 N:SOT-89 05: $I_{GT} \leq 200\mu\text{A}$				
JieJie Microelectronics Co.,Ltd Sensitive gate SCRs $I_{T(RMS)}:1\text{A}$				

PACKAGE MECHANICAL DATA

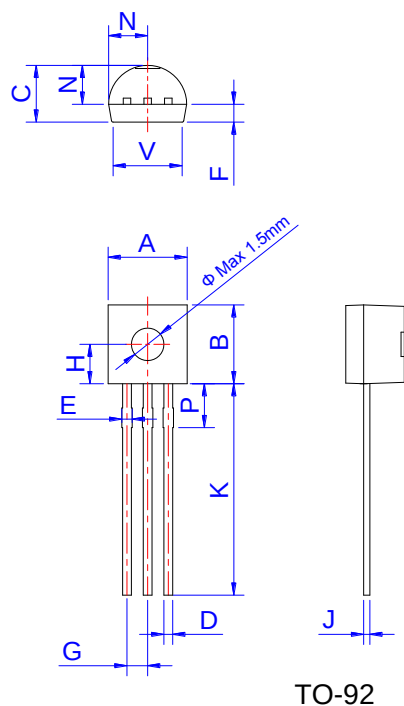


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.5	1.6	1.8	0.059	0.063	0.071
A1	0	0.06	0.10	0	0.002	0.004
B	2.9	3.0	3.1	0.114	0.118	0.122
B1	0.6	0.7	0.8	0.024	0.028	0.031
C	0.22	0.26	0.32	0.009	0.010	0.013
D	6.3	6.5	6.7	0.248	0.256	0.264
E	3.3	3.5	3.7	0.130	0.138	0.146
F		4.6			0.181	
F1		2.3			0.091	
G	0.7	0.9	1.1	0.028	0.035	0.043
H	1.5	1.75	2.0	0.059	0.069	0.079
J	6.7	7.0	7.3	0.264	0.276	0.287
K	0.8	0.9	1.0	0.031	0.035	0.039



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.40		1.60	0.055		0.063
B	0.35		0.52	0.014		0.020
C	0.35		0.46	0.014		0.018
D	4.30		4.70	0.169		0.185
D1	1.50		1.70	0.059		0.067
D2	1.30		1.50	0.051		0.059
E	2.30		2.70	0.091		0.106
E1		2.20			0.087	
E2		0.52			0.020	
e		1.50			0.059	
e1		3.00			0.118	
F		5°			5°	
H	3.94		4.0	0.155		0.157
L	0.80		1.20	0.031		0.047

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.45		5.20	0.175		0.205
B	4.32		5.33	0.170		0.210
C	3.18		4.19	0.125		0.165
D	0.407		0.533	0.016		0.021
E	0.60		0.80	0.024		0.031
F	-	1.1	-	-	0.043	-
G	-	1.27	-	-	0.050	-
H	-	2.30	-	-	0.091	-
J	0.36		0.50	0.014		0.020
K	12.70		15.0	0.500		0.591
N	2.04		2.66	0.080		0.105
P	1.86		2.06	0.073		0.081
V	-		4.3	-		0.169

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

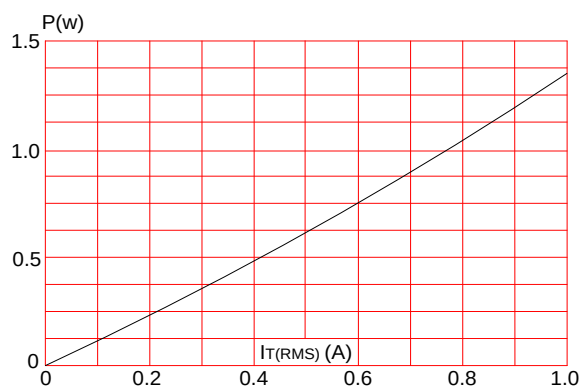


FIG.2: RMS on-state current versus case temperature

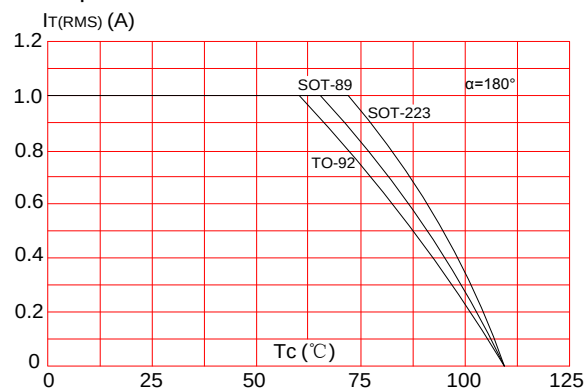


FIG.3: Surge peak on-state current versus number of cycles

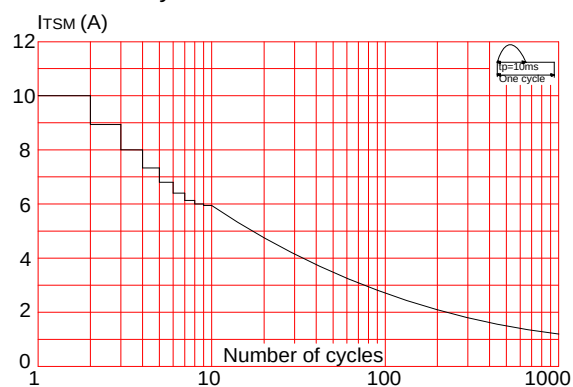


FIG.4: On-state characteristics (maximum values)

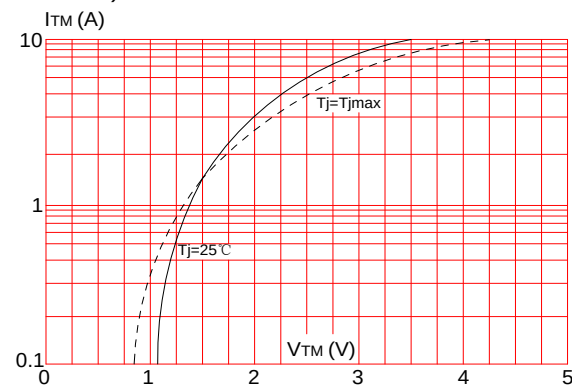


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

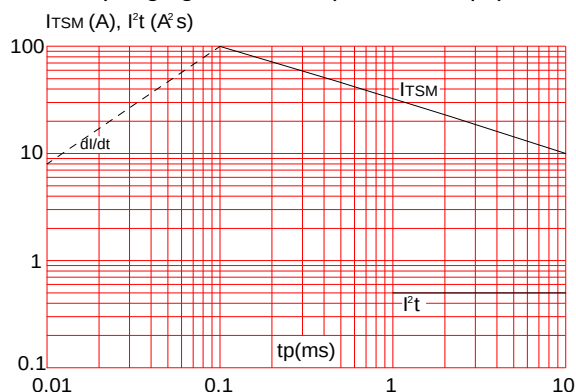
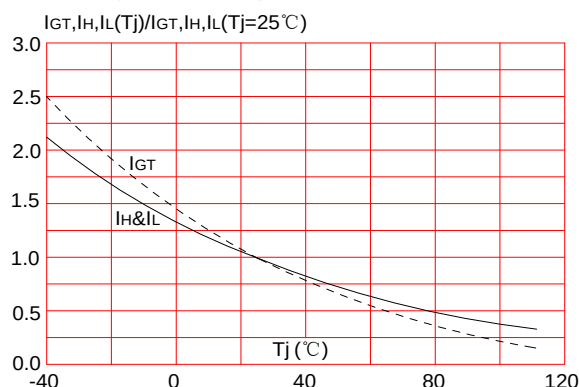


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



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