

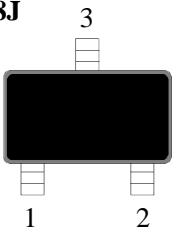

1、Description

PNPN devices designed for high volume, line-powered consumer applications such as relay and lamp drivers, small motor controls, gate drivers for larger thyristors, and sensing and detection circuits. Supplied in an inexpensive plastic SOT-23-3L package which is readily adaptable for use in automatic insertion equipment.

2、Features

- Sensitive gate allows triggering by micro-controllers and other logic circuits
- Blocking voltage to 800 volts
- On-state RMS current to 1.0A RMS at 50°C
- Ultra low gate trigger current
- Glass-Passivated Surface for Reliability and Uniformity

3、Pinning information

PIN	Description	Simplified outline	Symbol
1	Cathode (K)	CODE: CS18J  SOT-23-3L	
2	Gate (G)		
3	Anode (A)		

4、Quick reference data

SYMBOL	PARAMETER	MAX	UNIT
V_{DRM} V_{RRM}	Repetitive peak off-state voltages	800	V
$I_{T(RMS)}$	RMS on-state current	1.0	A
I_{TSM}	Non-repetitive peak on-state current	10	A
I_{GT}	Gate trigger current	100	uA

5、Thermal characteristics

SYMBOL	PARAMETER	Value	UNIT	
$R_{th(j-c)}$	junction to case(AC)	SOT-23-3L	80	°C/W

6、Limiting value

Limiting values in accordance with the Maximum System(IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V_{DRM} V_{RRM}	Repetitive peak off-state voltages		-	800	V
$I_{T(RMS)}$	RMS on-state current	Full Cycle Sine Wave 50 to 60 Hz (TC = 50°C)	-	1.0	A
I_{TSM}	Non-repetitive peak Surge current	One Full cycle, 60 Hz, $T_J = +110^{\circ}C$	-	10	A
I^2t	I^2t for fusing	$t = 8.3ms$	-	0.32	A^2s
V_{GM}	Peak gate voltage	Pulse Width $\leq 1.0 \mu s$, TC = 85°C	-	5	V
P_{GM}	Peak gate power	Pulse Width $\leq 1.0 \mu s$, TC = 85°C	-	0.5	W
$P_{G(AV)}$	Average gate power	Pulse Width $\leq 1.0 \mu s$, TC = 85°C	-	0.1	W
T_{stg}	Storage temperature		-40	150	°C
T_J	Operating junction temperature		-40	110	°C

7、Characteristics

$T_J = 25^{\circ}C$ unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Static characteristics						
I_{GT}	Gate trigger current	$V_D = 12 V$; $R_L = 33\Omega$	-	50	100	μA
I_L	Latching current	$I_G = 1.2 I_{GT}$	-	-	5	mA
I_H	Holding current	$I_T = 0.05mA$	-	-	3	mA
V_{TM}	On-state voltage	$I_{TM} = 1.1A$ $t_p = 380\mu s$	-	-	1.50	V
V_{GT}	Gate trigger voltage	$V_D = 12 V$; $R_L = 33\Omega$	-	-	0.8	V
V_{GD}	Gate Non-Trigger Voltage	$V_D = V_{DRM}$; $T_J = 110^{\circ}C$	0.2	-	-	V
I_{DRM} I_{RRM}	$V_D = V_{DRM}$ $V_R = V_{RRM}$	$T_J = 25^{\circ}C$	-	-	5	μA
		$T_J = 110^{\circ}C$	-	-	500	μA
Dynamic Characteristics						
dV/dt	Critical rate of rise of off-state voltage	$V_D = 2/3 V_{DRM}$ Gate Open $T_J = 110^{\circ}C$	20	35	-	$V/\mu s$

8. Electrical Characteristics Curve

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

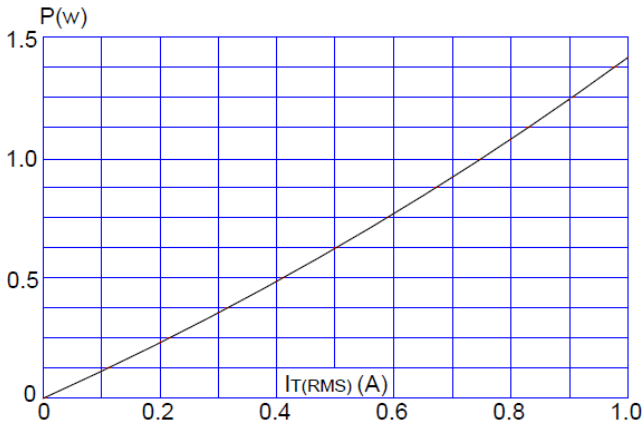


FIG.2: RMS on-state current versus case temperature

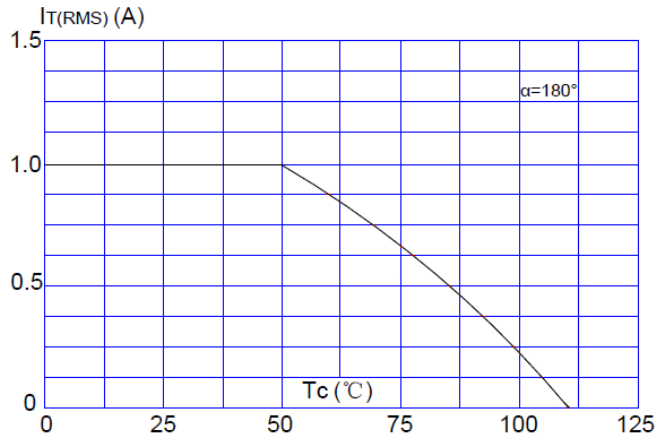


FIG.3: Surge peak on-state current versus number of cycles

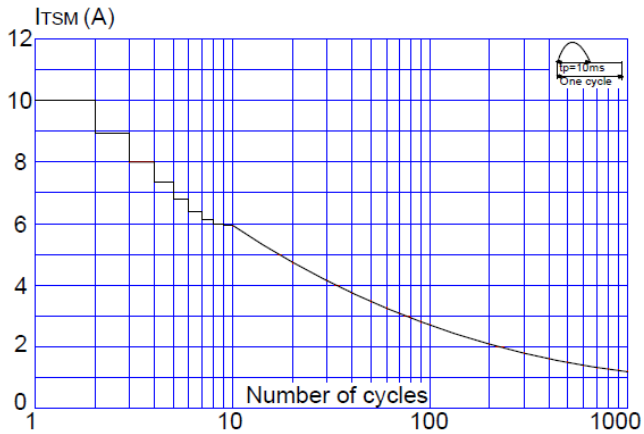


FIG.4: On-state characteristics (maximum values)

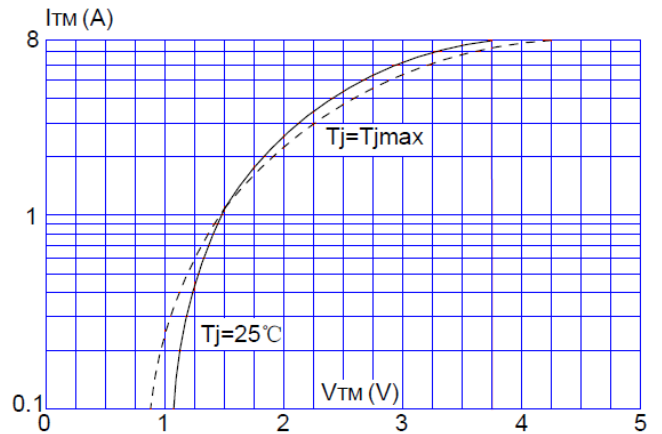


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t

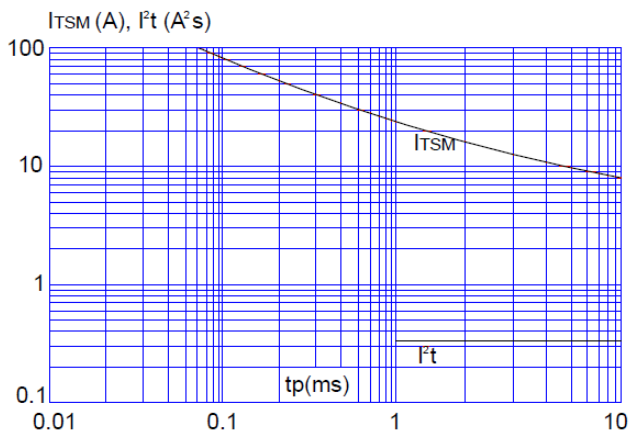
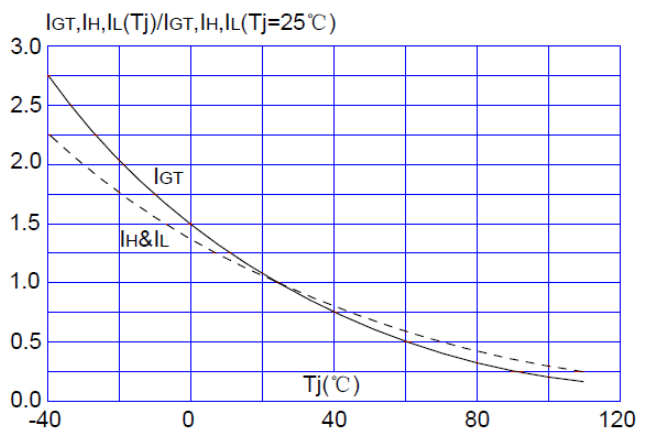
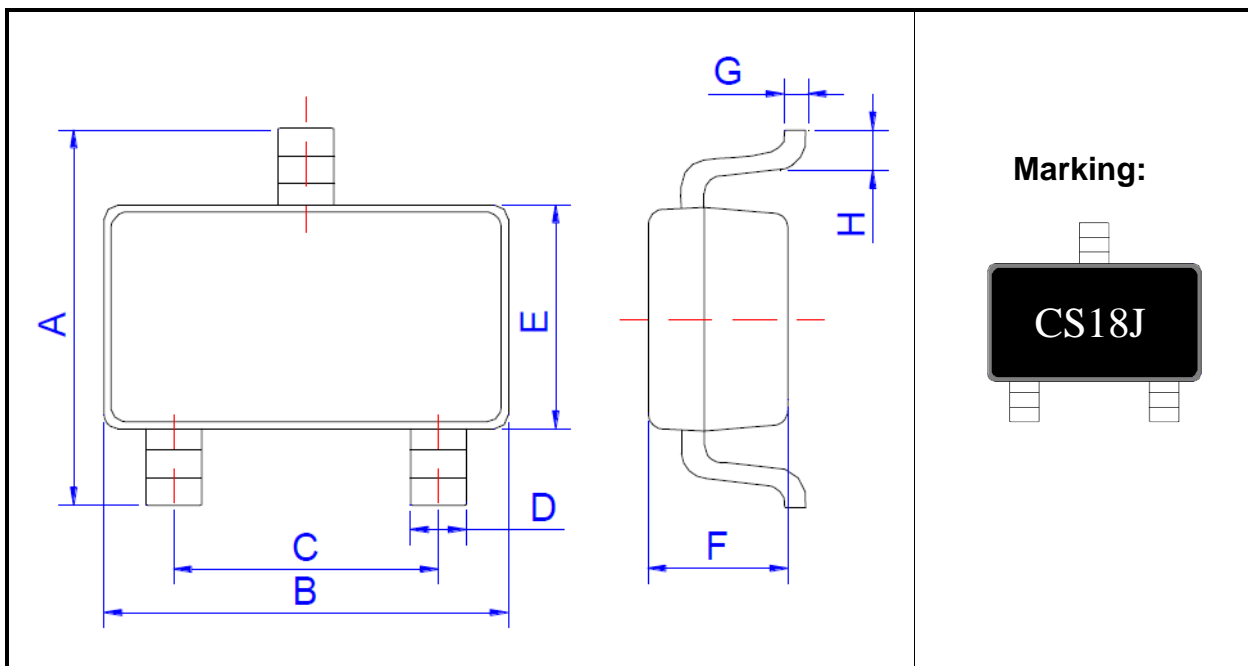


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



9、Package outline(SOT-23-3L)



DIM	Inches			Milimeters		
	Min	Type	Max	Min	Type	Max
A	0.104		0.116	2.65		2.95
B		0.115			2.92	
C		0.075			1.90	
D	0.014		0.018	0.35		0.45
E		0.064			1.62	
F		0.043			1.10	
G		0.006			0.16	
H	0.010		0.022	0.25		0.55