SZCJ

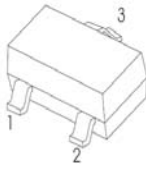
Shenzhen Changji Semiconductor Co., LTD.

SOT-23 Plastic-Encapsulate MOSFETS

2SK3018S N-channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$TYP	I_D
30 V	0.19Ω@4V	500mA
	0.72Ω@2.5V	

SOT-23



1. GATE
2. SOURCE
3. DRAIN

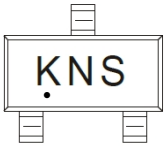
FEATURE

- Low on-resistance
- Fast switching speed
- Low voltage drive makes this device ideal for Portable equipment
- Easily designed drive circuits
- Easy to parallel

APPLICATION

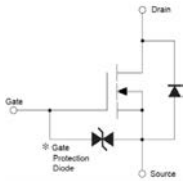
- Interfacing , Switching

MARKING



KNS=Device code
Solid dot = Green molding compound device.

Equivalent Circuit



MOSFET MAXIMUM RATINGS (T_a = 25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source voltage	30	V
V_{GS}	Gate-Source Voltage	±20	V
I_D①	Continuous Drain Current	0.5	A
I_{DM}①②	Pulsed Drain Current (tp=10us)	2	A
$R_{\theta JA}$⑤	Thermal Resistance, Junction-to-Ambient	500	℃/W
P_D⑤	Power Dissipation	0.25	W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	℃

MOSFET ELECTRICAL CHARACTERISTICS

T_J=25℃ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =10μA	30	-	-	V
Zero gate voltage drain current	I_{DSS}	V_{DS}=20V,V_{GS}=0V	-	-	1.0	μA
Gate-body leakage current	I_{GSS}	V_{DS} =0V, V_{GS} =±20V	-	-	±2	μA
On characteristics ③						
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =3V, I_D =250μA	0.8	1.1	1.5	V
Static drain-source on-resistance	$R_{DS(on)}$	V_{GS} =4V, I_D =10mA	-	0.19	0.4	Ω
		V_{GS} =2.5V, I_D =1mA	-	0.72	2.0	
Forward Transconductance	g_{FS}	V_{DS} =3V, I_D = 10mA	-	49	-	mS
Dynamic characteristics ④						
Input capacitance	C_{iss}	V_{DS} =5V,V_{GS} =0V,f =1MHz	-	57	-	pF
Output capacitance	C_{oss}		-	20	-	
Reverse transfer capacitance	C_{rss}		-	11	-	
Gate resistance	R_g	f =1MHz	-	1020	-	Ω
Switching characteristics ④						
Total gate charge	Q_g	V_{DS} =5V,V_{GS} =5V,I_D =0.5A	-	1.5	-	nC
Gate-source charge	Q_{gs}		-	0.28	-	
Gate-drain charge	Q_{gd}		-	0.59	-	
Turn-on delay time	$t_{d(on)}$	V_{DD}=5V,V_{GS}=5V, R_G=10Ω, R_L=500Ω	-	24	-	ns
Turn-on rise time	t_r		-	28	-	
Turn-off delay time	$t_{d(off)}$		-	154	-	
Turn-off fall time	t_f		-	96	-	
Drain-Source Diode Characteristics						
Drain-source diode forward voltage	V_{SD} ③	V_{GS} =0V,I_S =10mA	-	-	1	V
Maximum continuous drain-source diode forward current	I_S ①		-	-	0.5	A
Maximum pulsed drain-source diode forward current	I_{SM} ①②		-	-	2	A

Notes :

1.T_A=25℃.

2.P_W≤10μs, Duty cycle≤1%.

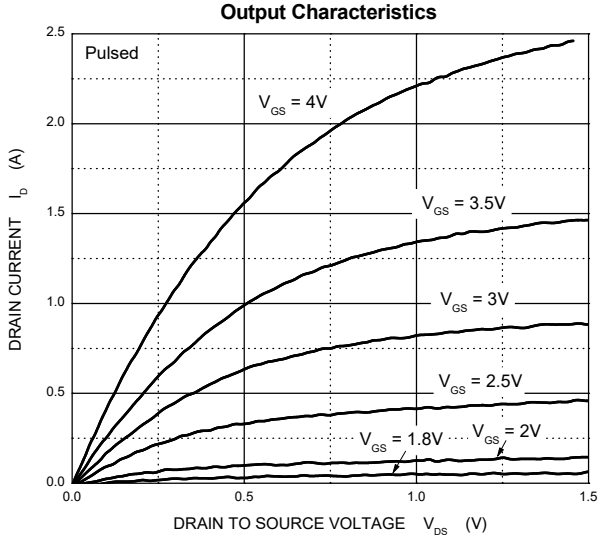
3.Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.

4.Guaranteed by design, not subject to production.

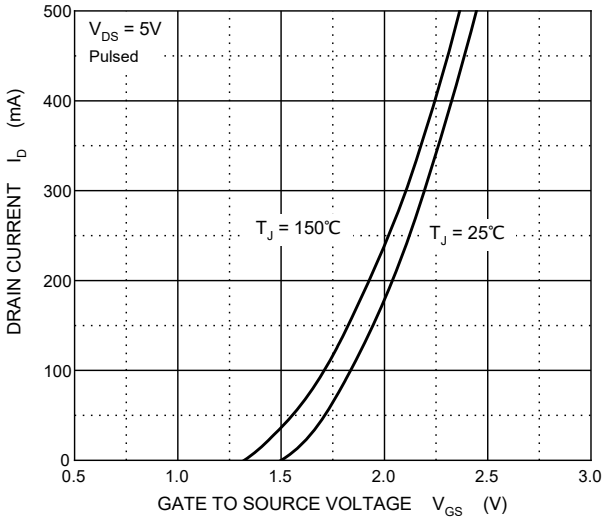
5.The value of $R_{\theta JA}$ is measured with the device mounted on 1 in^2 FR-4 board in a still air environment with T_a=25℃.

Typical Characteristics (T_J = 25℃, unless otherwise specified)

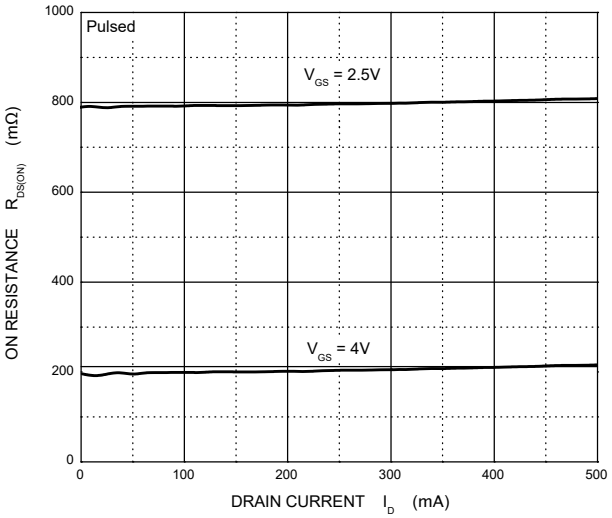
Output Characteristics



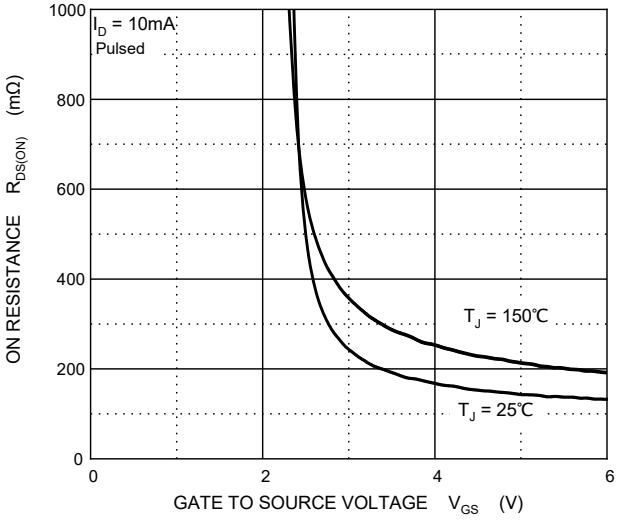
Transfer Characteristics



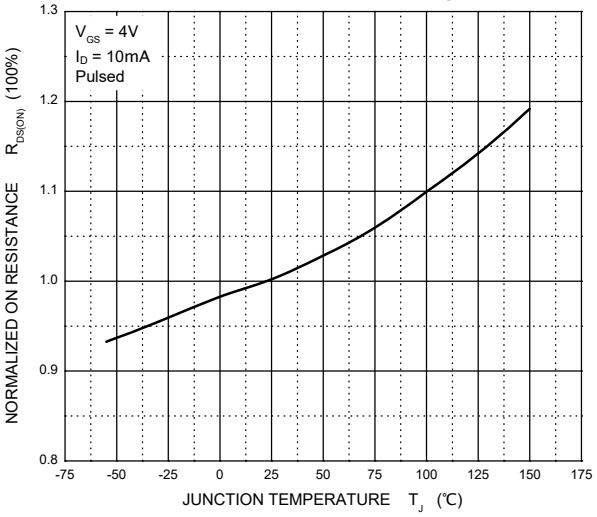
On Resistance vs. Drain Current



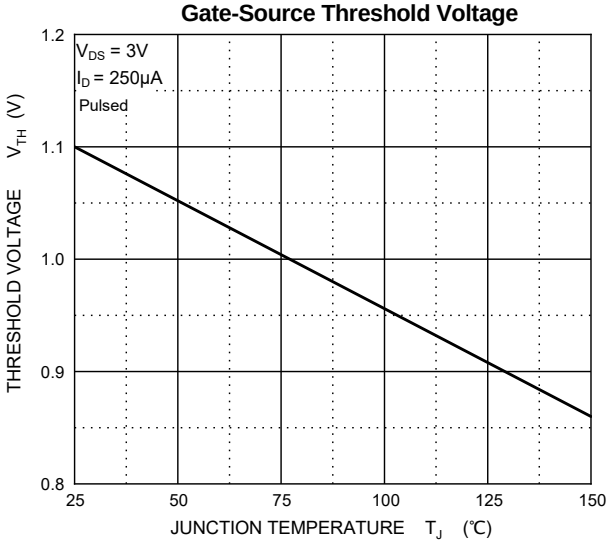
On Resistance vs. Gate-Source Bias



On Resistance vs. Junction Temperature

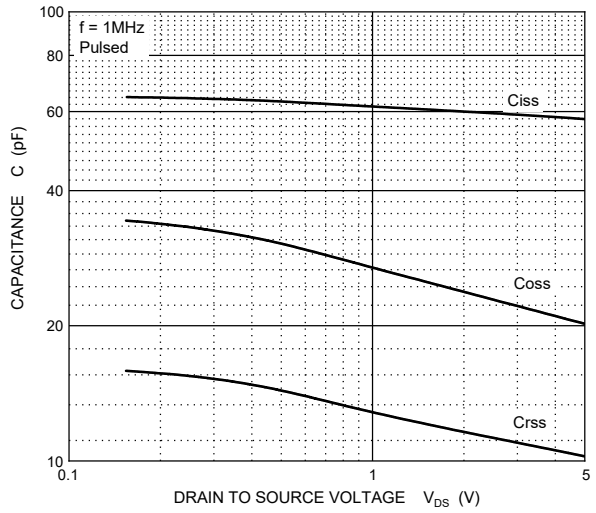


Gate-Source Threshold Voltage

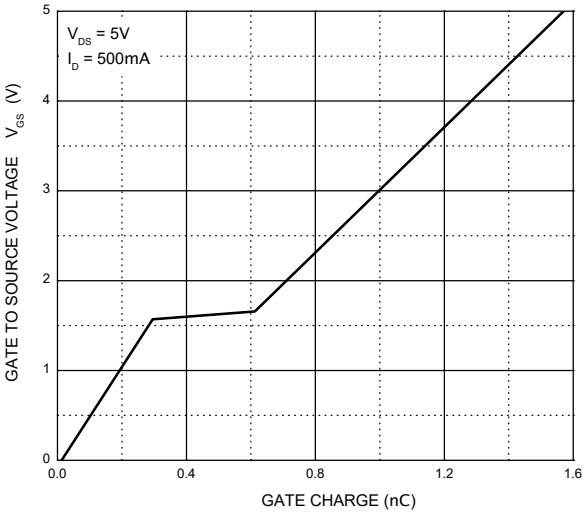


Typical Characteristics (T_J = 25℃, unless otherwise specified)

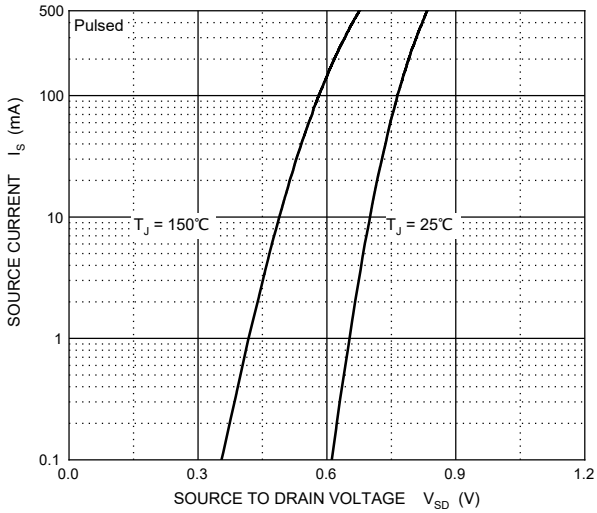
Typical Capacitances



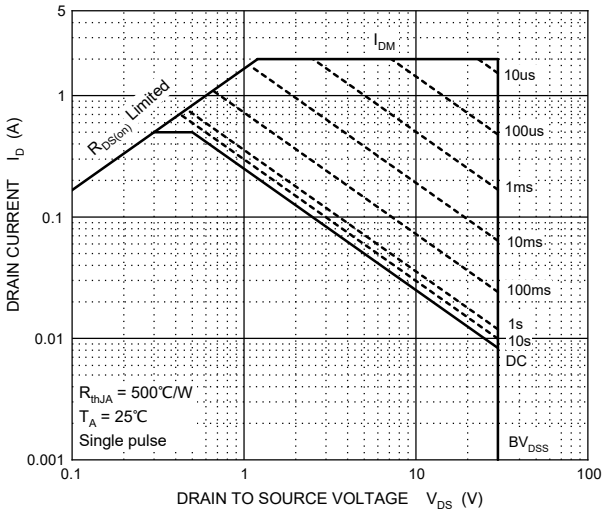
Gate Charge



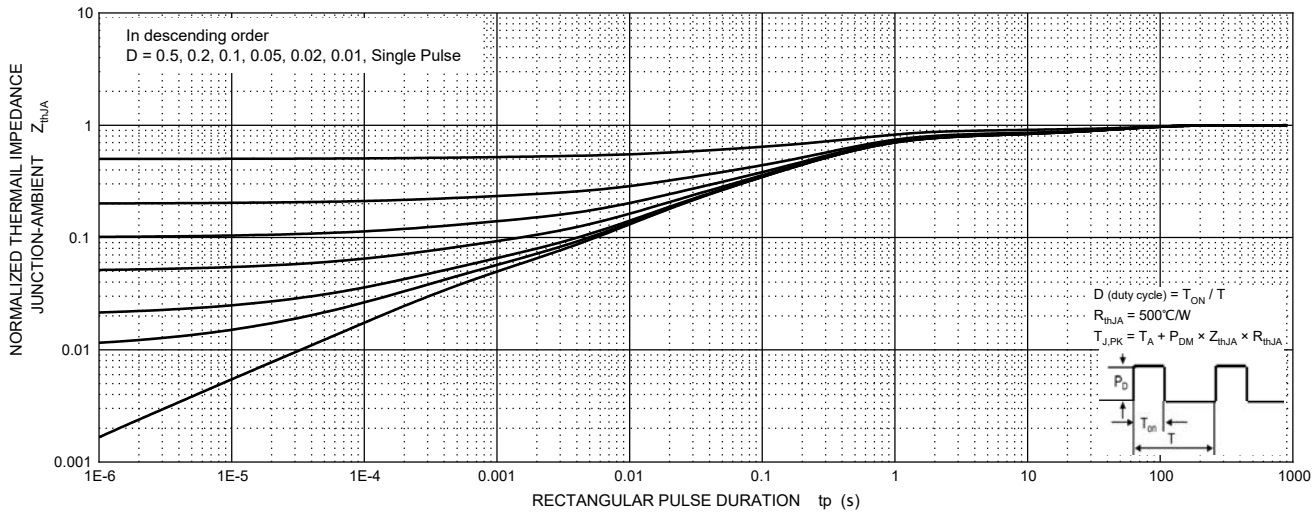
Source-Drain Diode Forward Characteristics



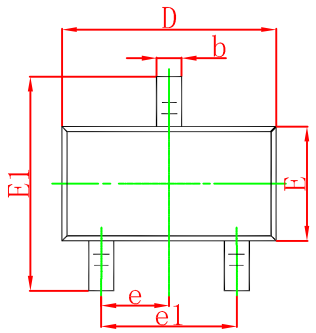
Maximum Safe Operating Area

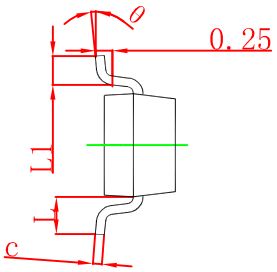


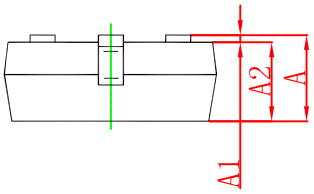
Transient Thermal Impedance, Junction-Ambient



SOT-23 Package Outline Dimensions

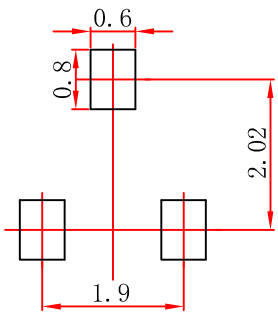






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



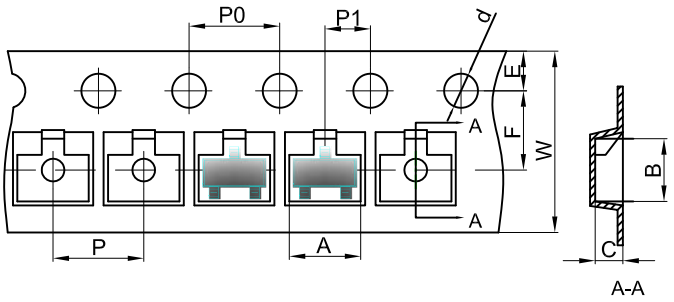
Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

NOTICE

SZCJ reserves the right to make modifications,enhan nts,improvements,corrections or other es without further notice to any product herein. SZCJ does not assume any liability arising out of the application or use of any product described h

SOT-23 Tape and Reel

SOT-23 Embossed Carrier Tape

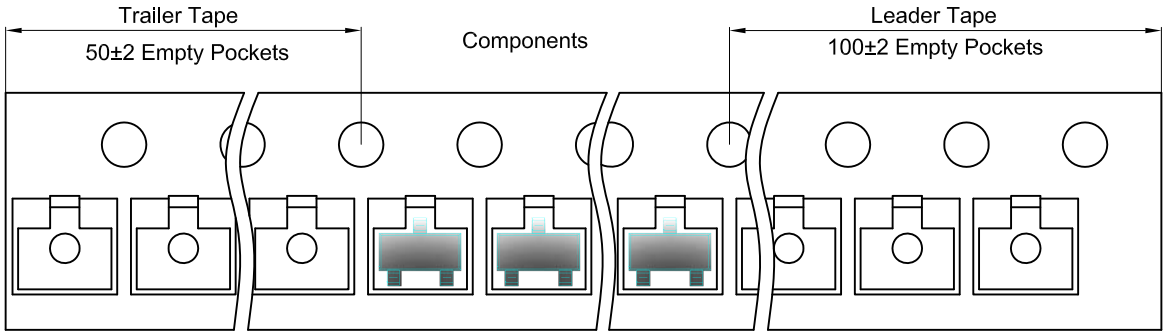


Packaging Description:

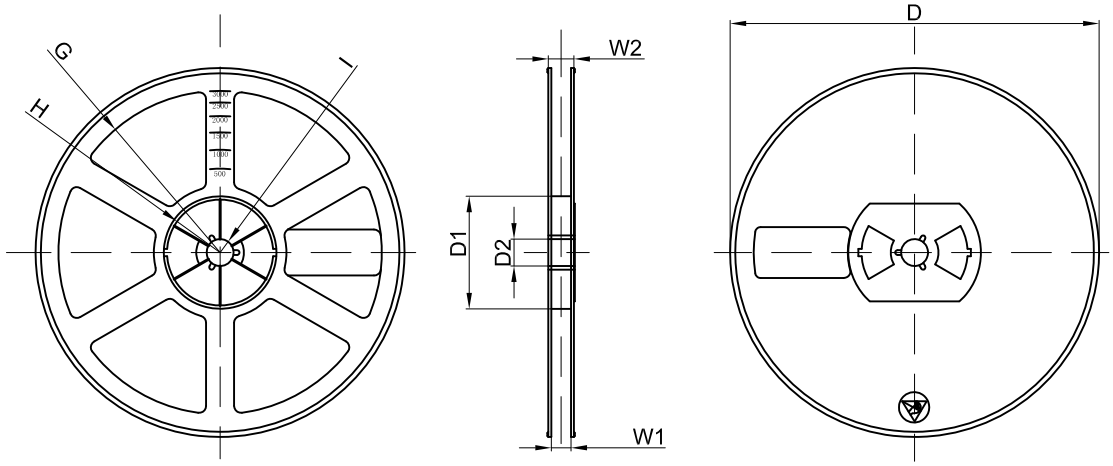
SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23 Tape Leader and Trailer



SOT-23 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	