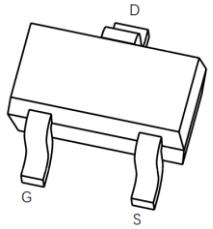
2SK3019

50V N-Channel MOSFET

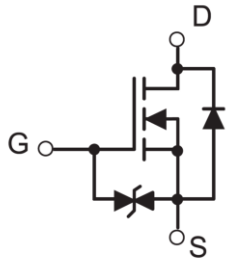
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
50V	0.92Ω@10V	0.3A
	0.98Ω@4.5V	
	1.2Ω@2.5V	

SOT-523



Schematic diagram



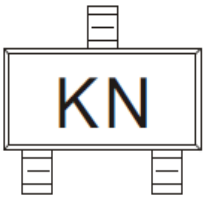
Feature

- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- ESD Protected

Application

- Load Switch
- DC/DC Converter

MARKING



ABSOLUTE MAXIMUM RATINGS (T_A = 25℃ unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain - Source Voltage		V_{DS}	50	V
Gate - Source Voltage		V_{GS}	±20	V
Continuous Drain Current[1,4]	T_A = 25℃	I_D	0.3	A
	T_A = 85℃	I_D	0.2	
Pulsed Drain Current[2]		I_{DM}	1.2	
Power Dissipation[4,5]	T_A = 25℃	P_D	0.25	W
Thermal Resistance from Junction to Ambient[5]		$R_{\theta JA}$	500	℃/W
Junction Temperature		T_J	150	℃
Storage Temperature		T_{STG}	-55~ +150	℃

MOSFET ELECTRICAL CHARACTERISTICS (T_A = 25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	50			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 50V, V_{GS} = 0V			1	μA
Gate - Body Leakage Current	I_{GSS}	V_{GS} = ±20V, V_{DS} = 0V			±2	μA
On Characteristics[3]						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	0.6	0.9	1.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 0.3A		0.92	2.5	Ω
		V_{GS} = 4.5V, I_D = 0.2A		0.98	3	
		V_{GS} = 2.5V, I_D = 0.01A		1.2	4.5	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS} = 15V, V_{GS} = 0V, f = 1MHz		30		pF
Output Capacitance	C_{oss}			5.2		
Reverse Transfer Capacitance	C_{rss}			3.3		
Gate Resistance	R_g	V_{DS} = 0V, V_{GS} = 0V, f = 1MHz		157		
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = 5V, V_{GS} = 5V, I_D = 10mA, R_G = 10Ω, R_L = 500Ω		15		ns
Turn-On Rise Time	t_r			35		
Turn-Off Delay Time	$t_{d(off)}$			80		
Turn-Off Fall Time	t_f			80		
Source - Drain Diode Characteristics						
Diode Forward Voltage[3]	V_{SD}	V_{GS} = 0V, I_S = 0.3A			1.2	V

Notes :

1.The maximum current rating is limited by package.

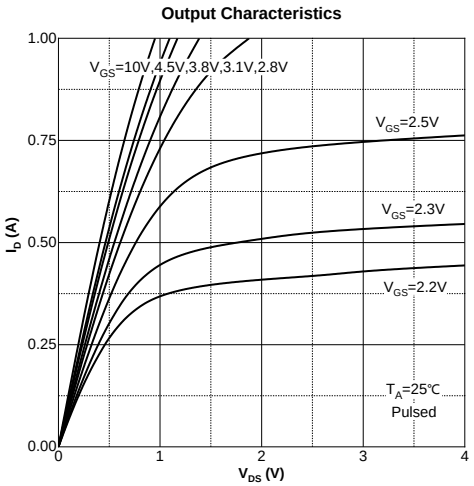
2.Pulse Test : Pulse Width ≤ 10μs, duty cycle ≤ 1%.

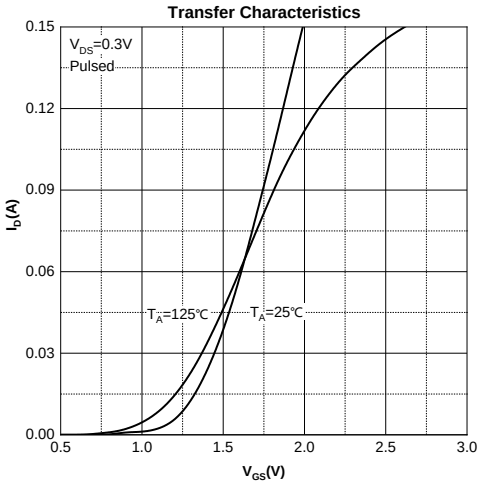
3.Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.

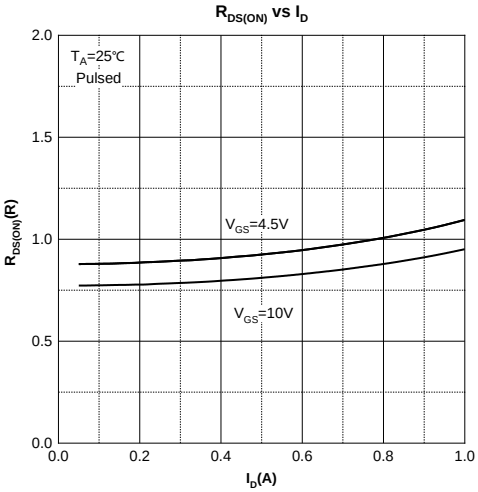
4.The power dissipation P_D is limited by $T_{J(MAX)}$ = 150°C.

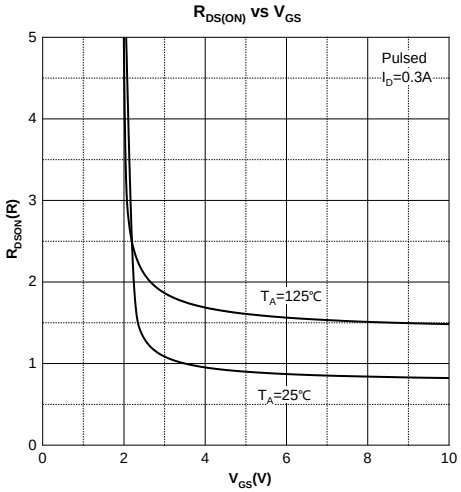
5.Device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C.

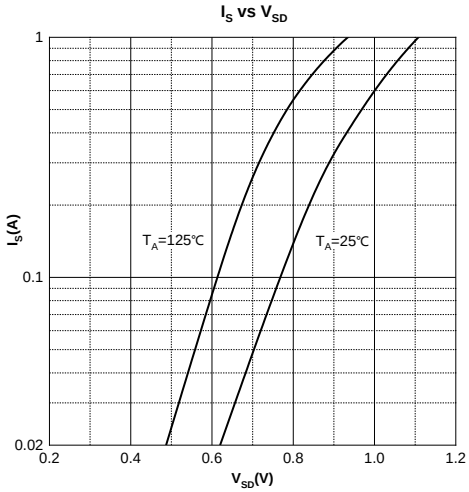
Typical Characteristics

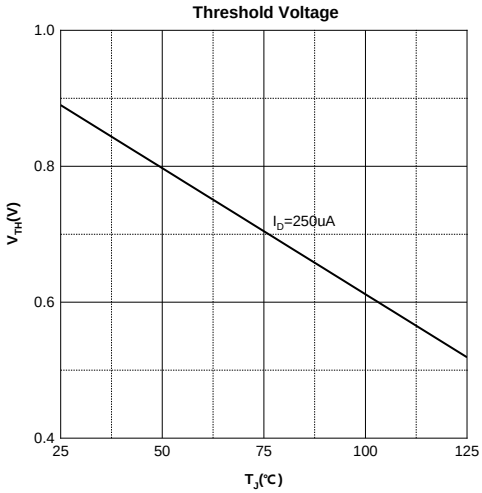




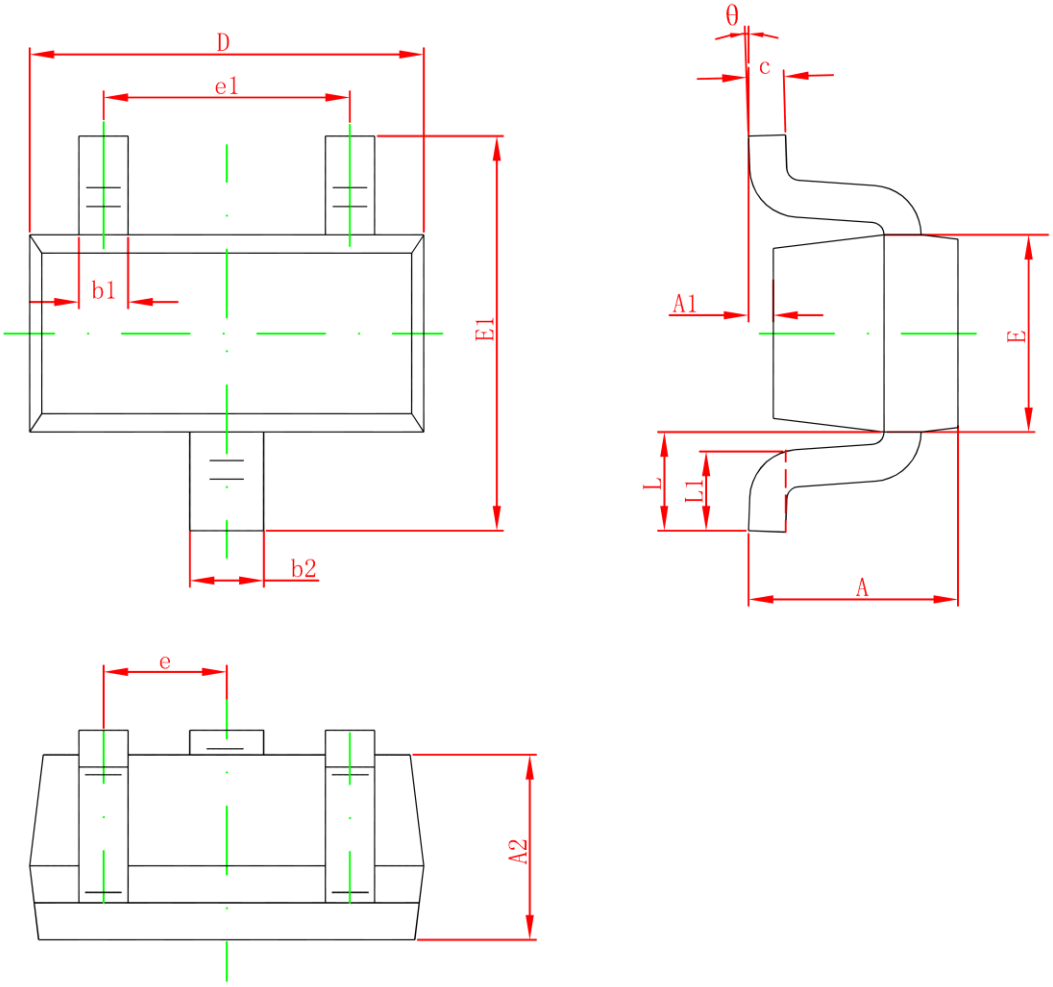








SOT-523 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e1	0.900	1.100	0.035	0.043
e	0.500TYP		0.020TYP	
L	0.400REF		0.016REF	
L1	0.100	0.460	0.004	0.018
θ	0°	8°	0°	8°

Attention：

- GreenPower Electronics reserves the right to improve product design function and reliability without notice.
- Any and all semiconductor products have certain probability to fail or malfunction, which may result in personal injury, death or property damage. Customer are solely responsible for providing adequate safe measures when design their systems.
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