



2SK3018KWJ

N-Channel Enhancement Mode Field Effect Transistor

Product Summary

V_{DS}	30 V
I_D	200mA
$R_{DS(ON)}$ (at $V_{GS}=10V$)	2.5
$R_{DS(ON)}$ (at $V_{GS}=4.5V$)	3
Gate-Source ESD Rating Up to 2KV (HBM)	

General Description

Trench Power LV MOSFET technology
Moisture Sensitivity Level 1
Epoxy Meets UL 94 V-0 Flammability Rating
Halogen Free

Applications

Power management
Portable equipment

Absolute Maximum Ratings ($T_A=25$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-source Voltage	V_{DS}	30	V
Gate-source Voltage	V_{GS}	± 20	V
Drain Current	I_D	200	mA



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Electrical Characteristics ($T_J=25$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	30	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V, V_{GS}=0V$	-	-	1	μA
		$V_{DS}=30V, V_{GS}=0V, T_J=150$	-	-	100	
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 10	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.6	1.0	1.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=200mA$	-	1.7	2.5	
		$V_{GS}=4.5V, I_D=100mA$	-	2	3	
Diode Forward Voltage	V_{SD}	$I_S=200mA, V_{GS}=0V$	-	0.9	1.2	V
Gate resistance	R_G	$f=1MHz, \text{Open drain}$	-	150	-	
Maximum Body-Diode Continuous Current	I_S		-	-	200	mA

Dynamic Parameters



Typical Electrical and Thermal Characteristics Diagrams

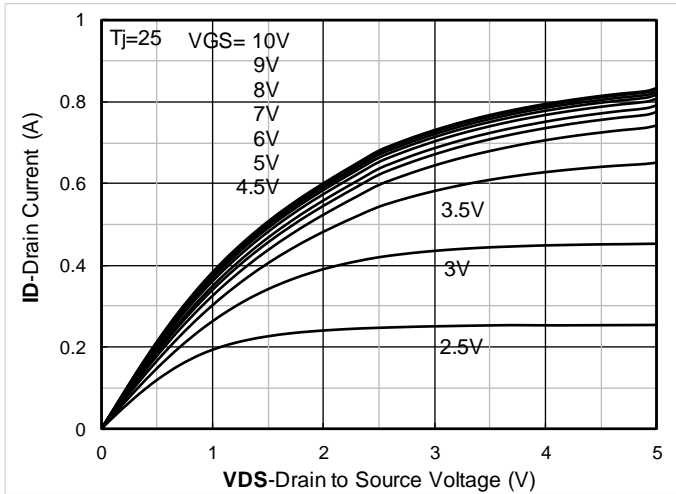


Figure 1. Output Characteristics

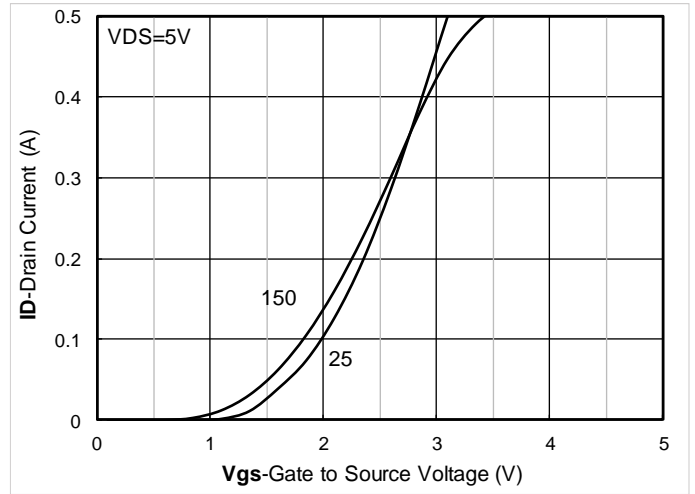


Figure 2. Transfer Characteristics

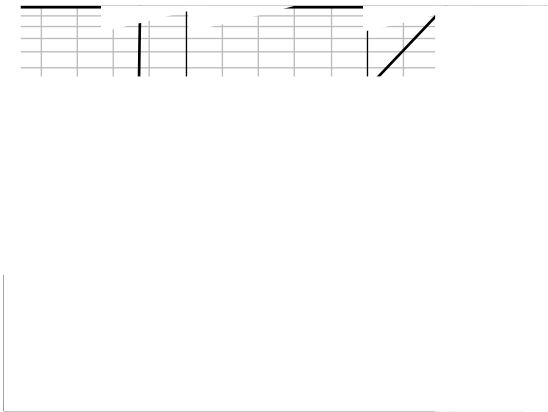


Figure 3. Capacitance Characteristics

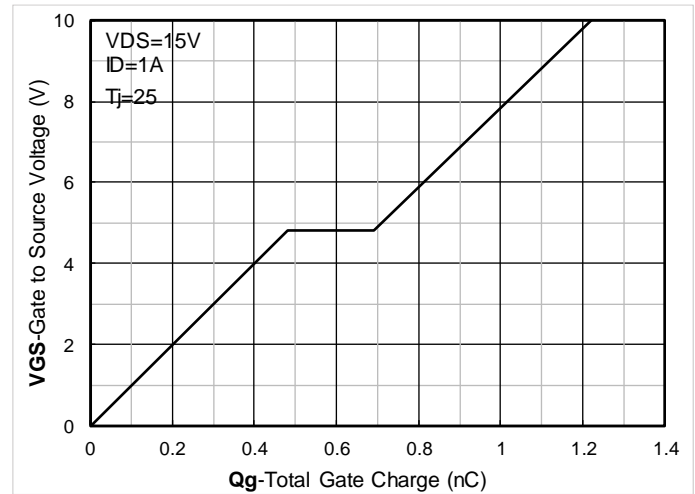


Figure 4. Gate Charge

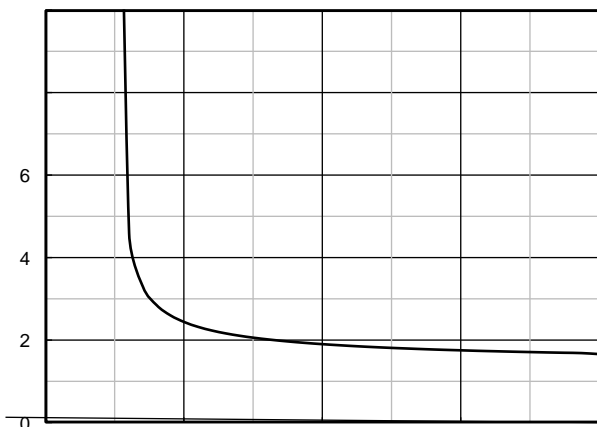


Figure 5. On-Resistance vs Gate to Source Voltage

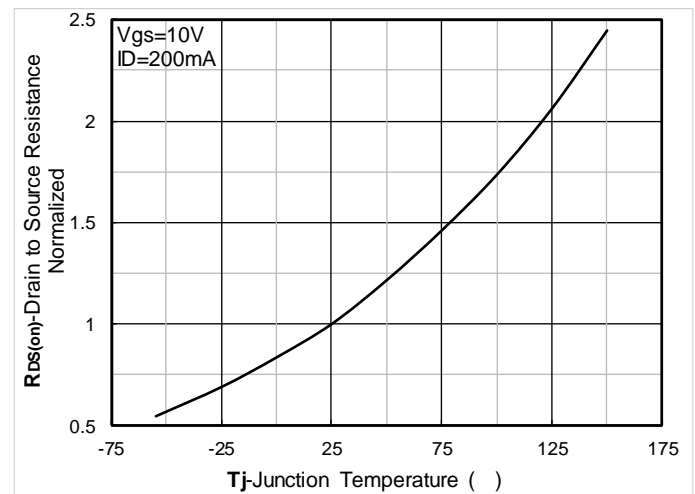


Figure 6. Normalized On-Resistance



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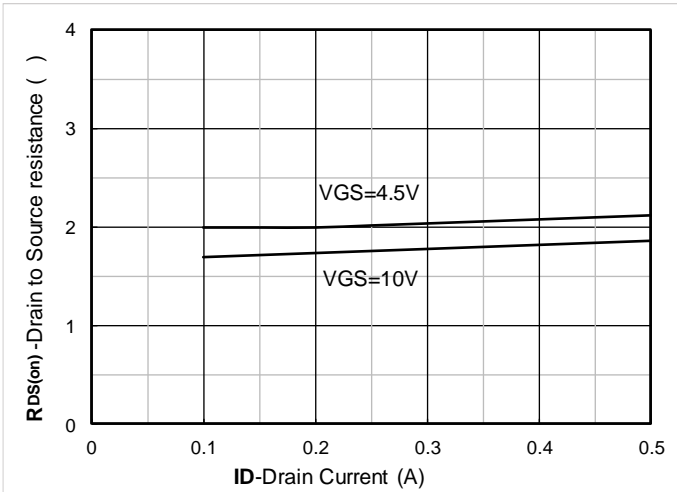


Figure 7. $R_{DS(on)}$ VS Drain Current

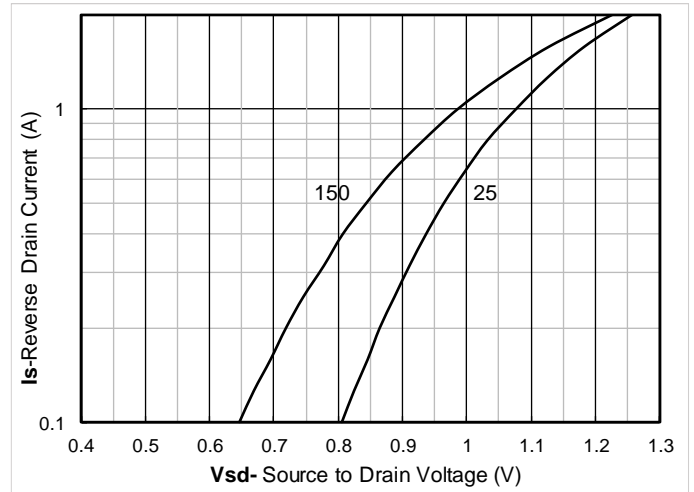


Figure 8. Forward characteristics of reverse diode

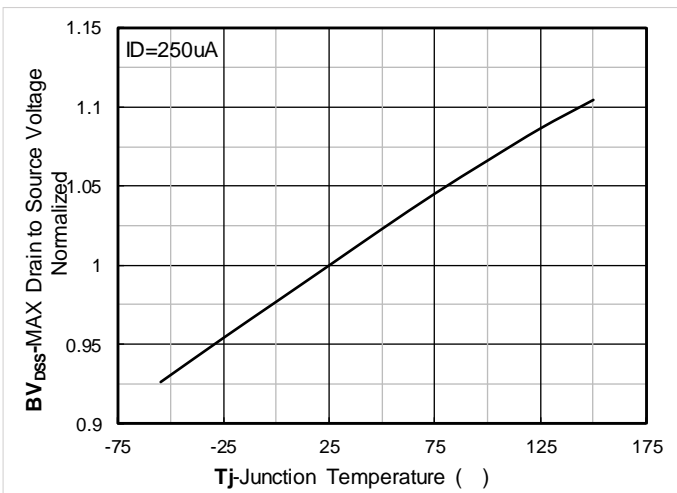


Figure 9. Normalized breakdown voltage

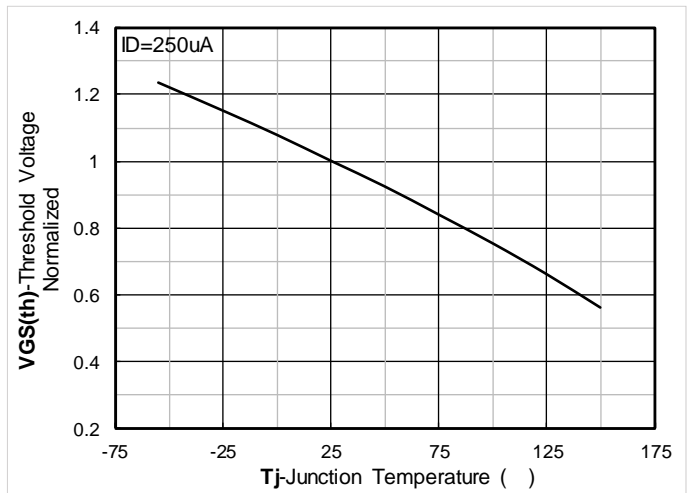


Figure 10. Normalized Threshold voltage

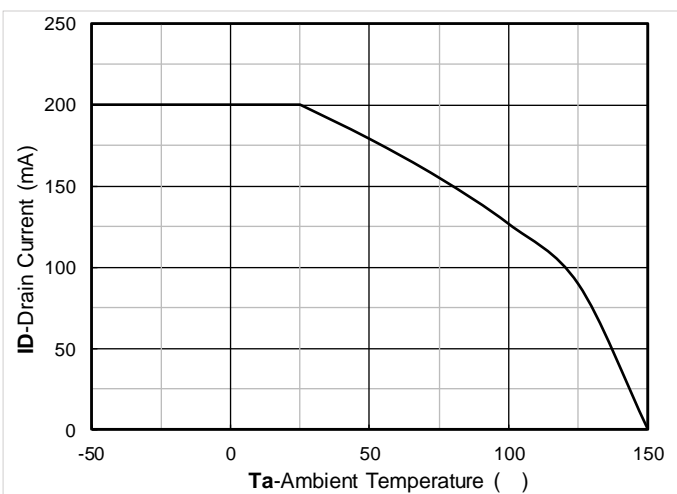


Figure 11. Current dissipation

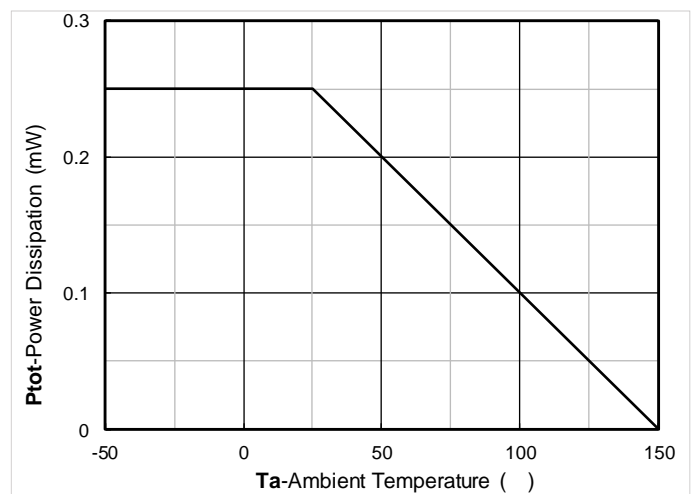


Figure 12. Power dissipation

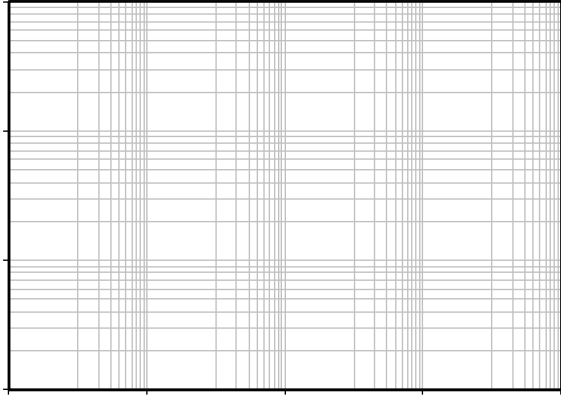


Figure 13. Maximum Transient Thermal Impedance

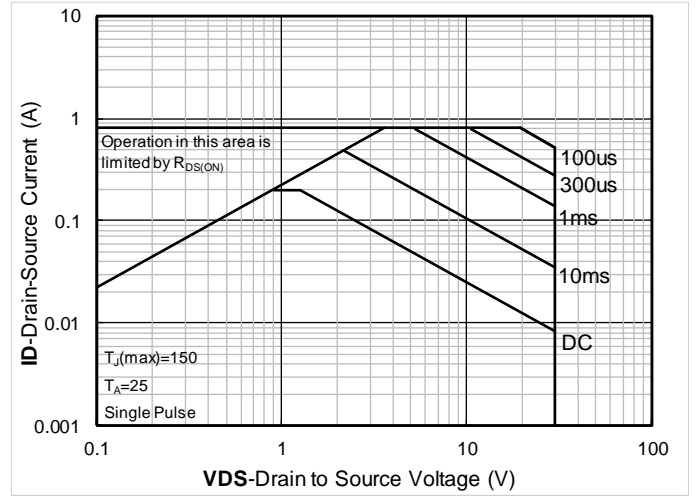


Figure 14. Safe Operation Area

Test Circuits & Waveforms

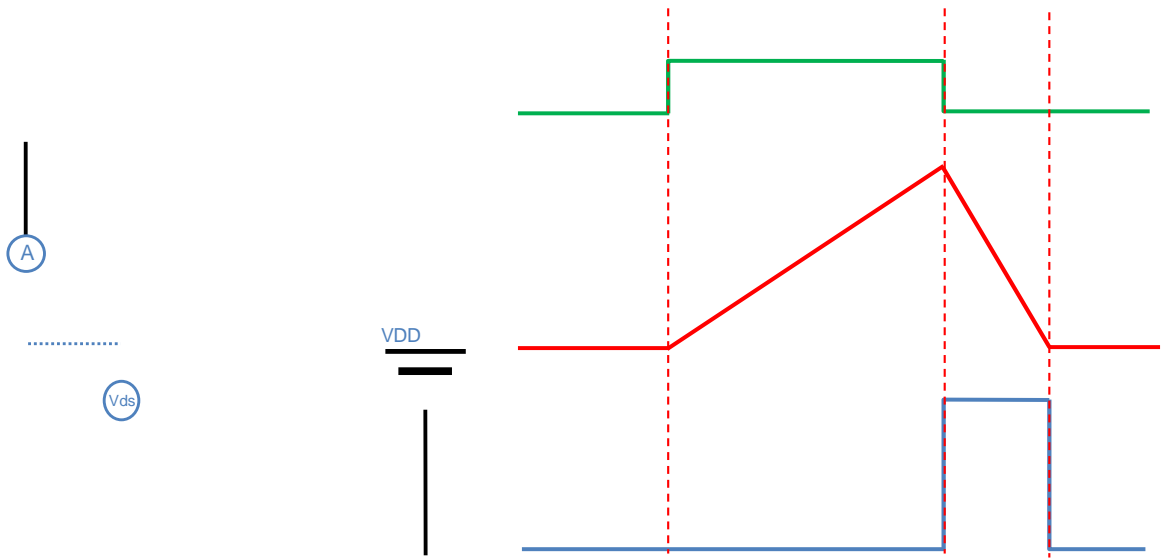


Figure A. Unclamped Inductive Switching (UIS) Test Circuit & Waveform

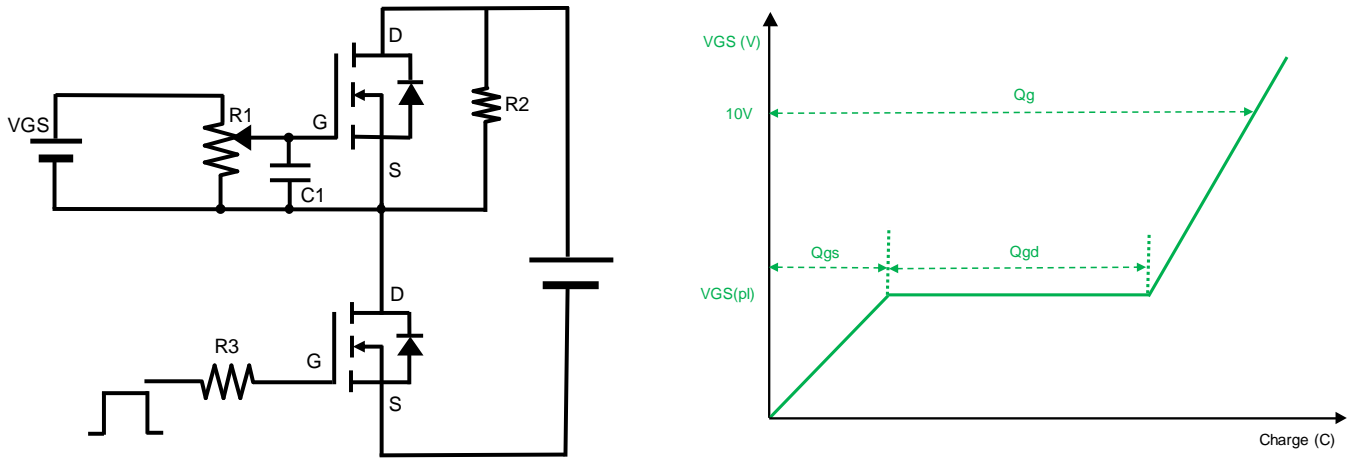


Figure B. Gate Charge Test Circuit & Waveform

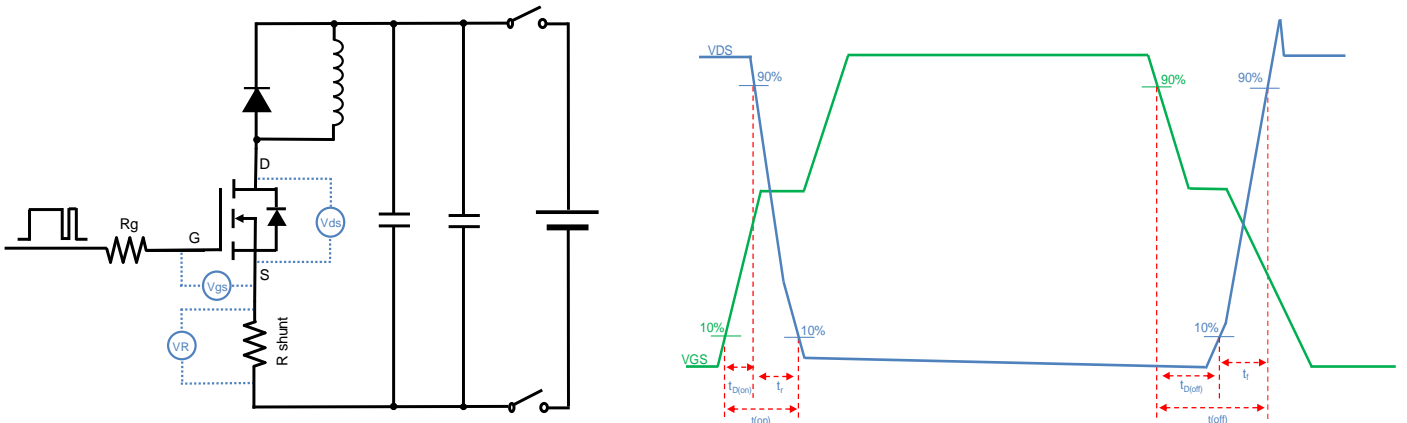


Figure C.



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SOT-323 Package information

SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.043	0.900	1.100
A1	0.000	0.004	0.000	0.100
A2	0.035	0.039	0.900	1.000
b	0.006	0.016	0.150	0.400
c	0.004	0.010	0.100	0.250
D	0.071	0.087	1.800	2.200
E	0.045	0.053	1.150	1.350
E1	0.085	0.096	2.150	2.450
e	0.026T		0.650TYP	
e1				
L			0.525REF	
L1			0.260	0.450
	0°	8°	0°	8°

NOTE:

1. PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.

2. TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.

3. THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.

UNIT mm

