Elektronische Bauelemente

SMS3K5N05-C

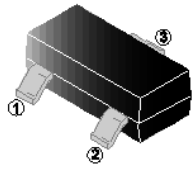
0.22A, 50V, $R_{DS(ON)}$ 3.5Ω
N-Ch Enhancement Mode Power MOSFET

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

FEATURES

- High Density Cell Design for Extremely Low $R_{DS(ON)}$
- Rugged and Reliable

SOT-23



APPLICATION

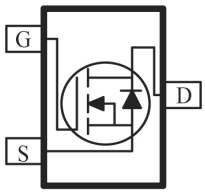
- Direct Logic-Level Interface: TTL/CMOS
- Drivers: Relays, Solenoids, Lamps, Hammers, Display, Memories, Transistors, etc.
- Battery Operated Systems
- Solid-State Relays

MARKING

SS

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7 inch



ORDER INFORMATION

Part Number	Type
SMS3K5N05-C	Lead (Pb)-free and Halogen-free

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	50	V
Continuous Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	0.22	A
Pulsed Drain Current @tp=10μs	I_{DM}	0.88	A
Power Dissipation	P_D	0.35	W
Thermal Resistance, Junction-Ambient	$R_{\theta JA}$	357	℃/W
Junction & Storage Temperature Range	T_J, T_{STG}	150, -55~150	℃

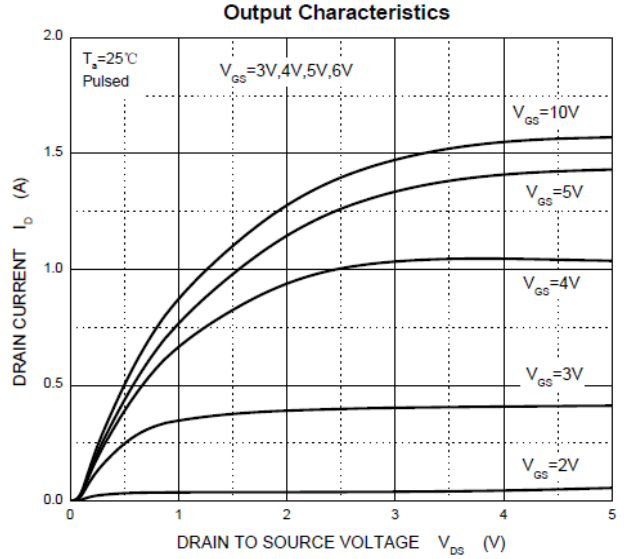
ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	50	-	-	V	V_{GS}=0, I_D=250μA
Gate Threshold Voltage	$V_{GS(th)}$	0.8	-	1.5	V	V_{DS}=V_{GS}, I_D=1mA
Forward Transconductance	g_{fs}	0.12	-	-	S	V_{DS}=10V, I_D=0.22A
Gate-Body Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}= ±20V, V_{DS}=0
Zero Gate Voltage Drain Current	I_{DSS}	-	-	0.5	μA	V_{GS}=0, V_{DS}=50V
		-	-	100	nA	V_{GS}=0, V_{DS}=30V
Static Drain-Source On Resistance [1]	$R_{DS(ON)}$	-	0.88	3.5	Ω	V_{GS}=10V, I_D=0.22A
		-	1.50	6		V_{GS}=4.5V, I_D=0.22A
Turn-On Delay Time	$T_{d(on)}$	-	5	-	nS	V_{DD}=30V V_{GS}=10V I_D=0.29A R_{GEN}=6Ω
Rise Time	T_r	-	18	-		
Turn-Off Delay Time	$T_{d(off)}$	-	36	-		
Fall Time	T_f	-	14	-		
Input Capacitance	C_{iss}	-	27	-	pF	V_{DS}=25V V_{GS}=0 f=1MHz
Output Capacitance	C_{oss}	-	13	-		
Reverse Transfer Capacitance	C_{rss}	-	6	-		
Drain-source body diode characteristics						
Body Diode Forward Voltage [1]	V_{SD}	-	-	1.4	V	V_{GS}=0, I_S=0.44A

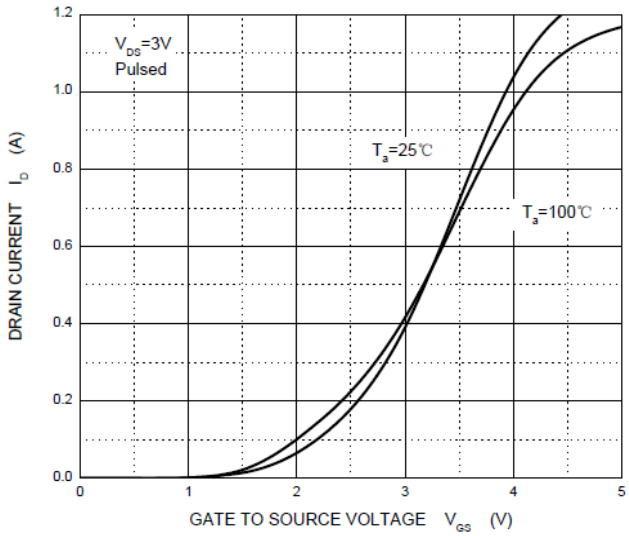
Note:
1. Pulse Test; Pulse Width≤300μs, Duty Cycle≤2%.

CHARACTERISTIC CURVES

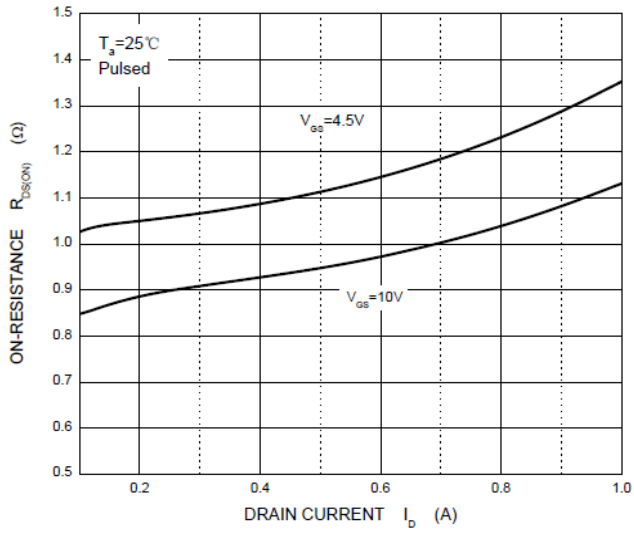
Output Characteristics



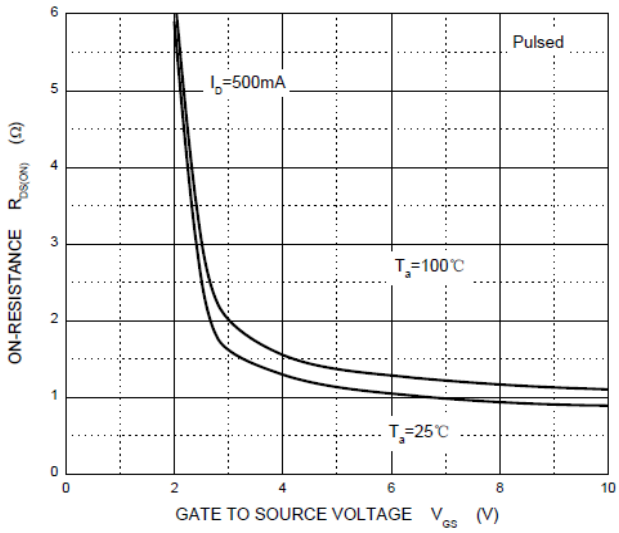
Transfer Characteristics



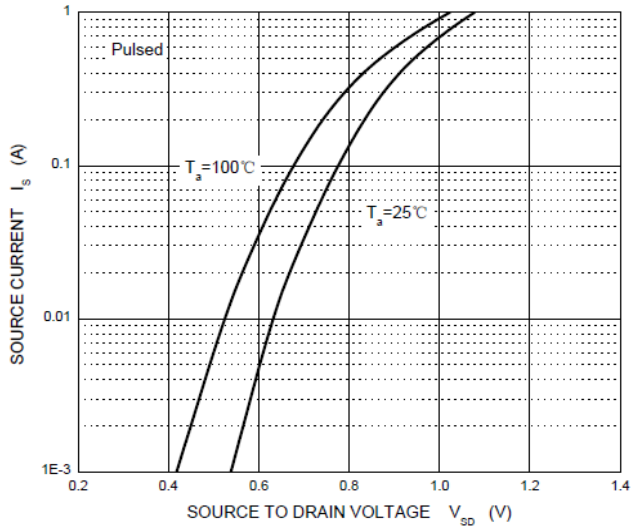
$R_{DS(ON)}$ — I_D



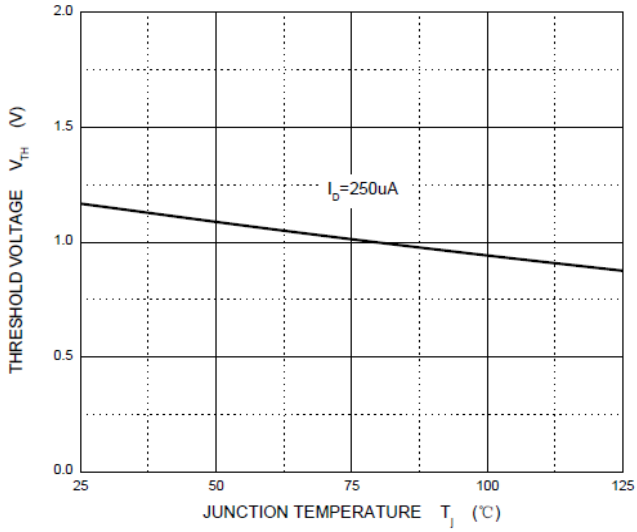
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}

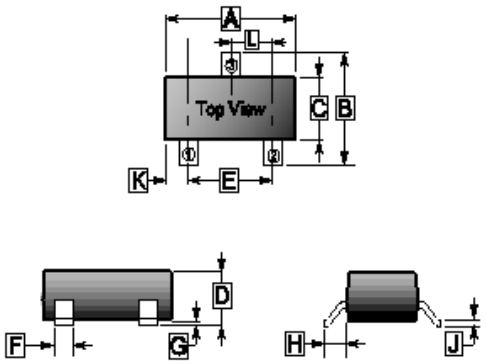


Threshold Voltage



PACKAGE OUTLINE DIMENSIONS

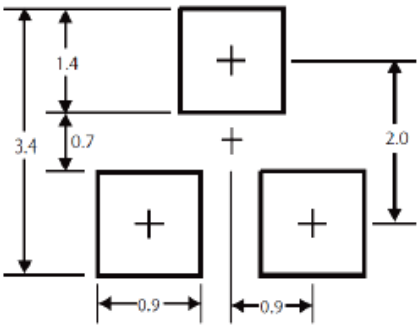
SOT-23



REF.	Millimeter	
	Min.	Max.
A	2.65	3.10
B	2.10	3.00
C	1.10	1.80
D	0.89	1.40
E	1.70	2.30
F	0.28	0.55
G	0	0.18
H	0.55 REF.	
J	0.05	0.26
K	0.60 REF.	
L	0.95 TYP.	

MOUNTING PAD LAYOUT

SOT-23



*Dimensions in millimeters