Elektronische Bauelemente

SMS2321

-2.9A, -20V, $R_{DS(ON)}$ 57 mΩ
P-Channel Enhancement MOSFET

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

FEATURES

- TrenchFET power MOSFET

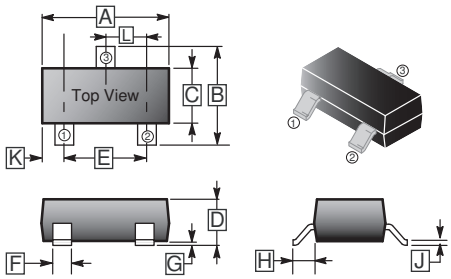
APPLICATIONS

- PA switch
- Load switch

MARKING

S21

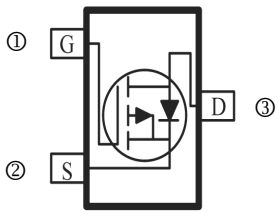
SOT-23



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.10	G	0.09	0.18
B	2.10	2.65	H	0.35	0.65
C	1.20	1.40	J	0.08	0.20
D	0.89	1.17	K	0.6 REF.	
E	1.78	2.04	L	0.95 BSC.	
F	0.30	0.50			

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7 inch



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-20	V
Continuous Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	-2.9	A
Pulsed Drain Current	I_{DM}	-12	A
Continuous Source-Drain Diode Current	I_S	-0.59	A
Maximum Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	℃/W
Junction and Storage Temperature Range	T_J, T_{STG}	150, -50~150	℃

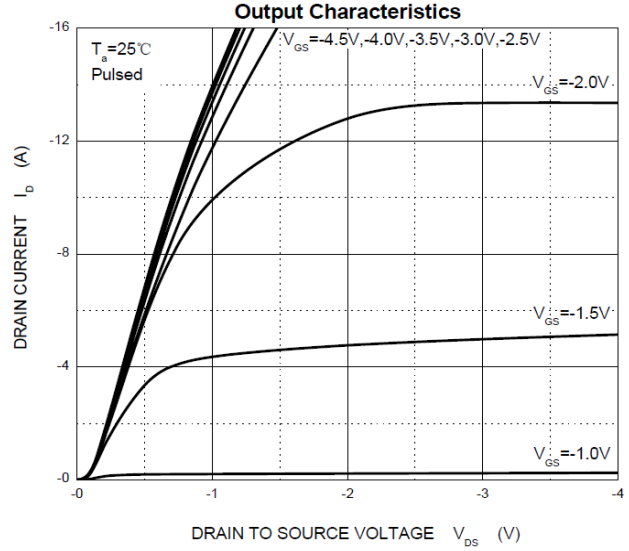
ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	-20	-	-	V	V_{GS}=0, I_D= -10μA
Zero Gate Voltage Drain Current	I_{DSS}	-	-	-1	μA	V_{DS}= -16V, V_{GS}=0
Gate-Source Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}=±12V, V_{DS}=0
Gate-Source Threshold Voltage	$V_{GS(th)}$	-0.4	-	-0.9	V	V_{DS}=V_{GS}, I_D= -250μA
Static Drain-Source On Resistance	$R_{DS(ON)}$	-	-	57	mΩ	V_{GS}= -4.5V, I_D= -3.3A
		-	-	76		V_{GS}= -2.5V, I_D= -2.8A
		-	-	110		V_{GS}= -1.8V, I_D= -2.3A
Forward Transconductance	g_{FS}	-	3	-	S	V_{DS}= -5V, I_D= -3.3A
Forward Voltage	V_{SD}	-	-	-1.2	V	I_S= -1.6A, V_{GS}=0
Dynamic Characteristics [1]						
Input Capacitance	C_{iss}	-	715	-	pF	V_{DS}= -6V V_{GS}=0 f=1MHz
Output Capacitance	C_{oss}	-	170	-		
Reverse Transfer Capacitance	C_{rss}	-	120	-		
Total Gate Charge	Q_g	-	13	-	nC	V_{DS}= -6V V_{GS}= -4.5V I_D= -3.3A
Gate-Source Charge	Q_{gs}	-	1.2	-		
Gate-Drain (“Miller”) Charge	Q_{gd}	-	2.2	-		
Switching Characteristics [1]						
Turn-On Delay Time	$T_{d(on)}$	-	25	-	nS	V_{GEN}= -4.5V V_{DD}= -6V R_G=6Ω R_L=6Ω I_D= -1A
Rise Time	T_r	-	55	-		
Turn-Off Delay Time	$T_{d(off)}$	-	90	-		
Fall Time	T_f	-	60	-		

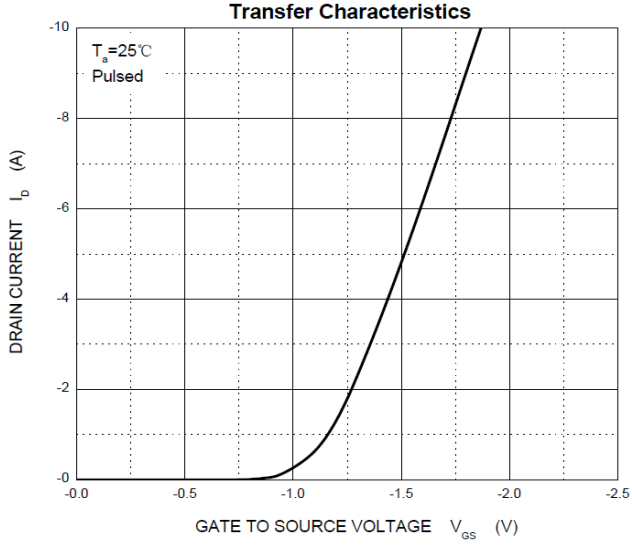
Notes:
1. Pulse Test: Pulse width≦300μs, duty cycle≦2%.

CHARACTERISTIC CURVE

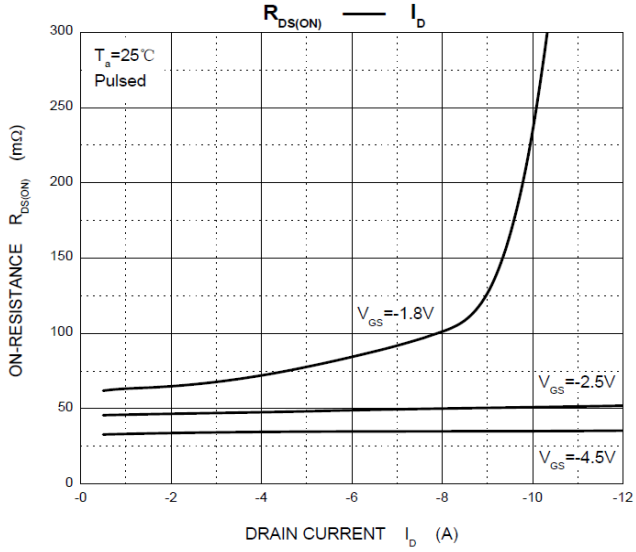
Output Characteristics



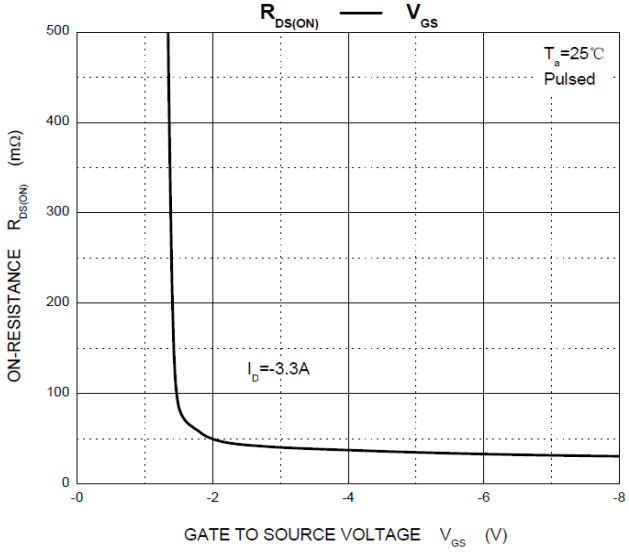
Transfer Characteristics



$R_{DS(ON)}$ — I_D



$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}