Elektronische Bauelemente

SMS2P02J-C

-2.3A, -20V, $R_{DS(ON)}$ 112mΩ

P-Channel Enhancement Mode Power MOSFET

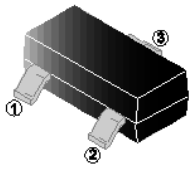
RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

The SMS2P02J-C is the highest performance trench P-ch MOSFETs with extreme high cell density, which provide Excellent $R_{DS(ON)}$ and gate charge for most of the small power switching and load switch applications.

The SMS2P02J-C meet the RoHS and Green Product requirement with full function reliability approved.

SOT-23



FEATURES

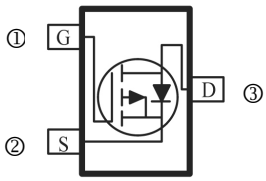
- Advanced High Cell Density Trench Technology
- Super low Gate Charge
- Green Device Available

MARKING

S1

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7 inch



ORDER INFORMATION

Part Number	Type
SMS2P02J-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}	-20	V
Continuous Gate-Source Voltage		V_{GS}	±8	V
Continuous Drain Current		I_D	-2.3	A
Pulsed Drain Current		I_{DM}	-10	A
Continuous Source-Drain Diode Current		I_S	-2.3	A
Total Power Dissipation		P_D	0.4	W
Operating Junction & Storage Temperature Range		T_J, T_{STG}	150, -55~150	℃
Thermal Resistance Rating				
Thermal Resistance from Junction-Ambient	t≦5sec	$R_{\theta JA}$	312.5	℃/W

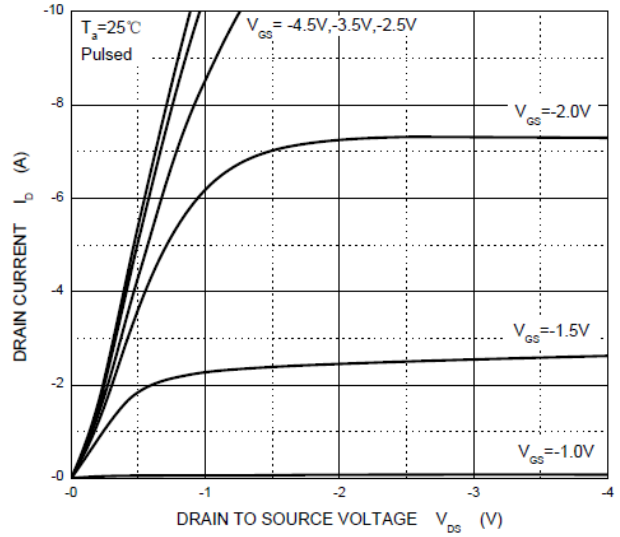
ELECTRICAL CHARACTERISTICS (T_J=25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	-20	-	-	V	V_{GS}=0V, I_D= -250μA
Gate-Source Threshold Voltage [1]	$V_{GS(th)}$	-0.4	-	-1	V	V_{DS}=V_{GS}, I_D= -250μA
Forward Transfer Conductance	g_{fs}	-	6.5	-	S	V_{DS}= -5V, I_D= -2.8A
Drain-Source Leakage Current	I_{DSS}	-	-	-1	μA	V_{GS}=0V, V_{DS}= -20V
Gate-Source Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}= ±8V, V_{DS}=0V
Static Drain-Source On Resistance [1]	$R_{DS(ON)}$	-	90	112	mΩ	V_{GS}= -4.5V, I_D= -2.8A
		-	110	142		V_{GS}= -2.5V, I_D= -2A
Gate Resistance	R_g	-	6	-	Ω	f=1MHz
Total Gate Charge (-4.5V)	Q_g	-	5.5	-	nC	V_{DS}= -10V V_{GS}= -2.5V I_D= -3A
Total Gate Charge		-	3.3	-		
Gate-Source Charge	Q_{gs}	-	0.7	-		
Gate-Drain (“Miller”) Charge	Q_{gd}	-	1.3	-		
Turn-On Delay Time	$T_{d(on)}$	-	11	-	nS	I_D= -1A V_{DD}= -10V V_{GS}= -4.5V R_G=1Ω R_L=10Ω
Rise Time	T_r	-	35	-		
Turn-Off Delay Time	$T_{d(off)}$	-	30	-		
Fall Time	T_f	-	10	-		
Input Capacitance	C_{iss}	-	405	-	pF	V_{DS}= -10V V_{GS}=0V f=1MHz
Output Capacitance	C_{oss}	-	75	-		
Reverse Transfer Capacitance	C_{rss}	-	55	-		
Source Drain Diode						
Forward On Voltage	V_{SD}	-	-0.8	-1.2	V	I_S= -0.7A
Continuous Source Current	I_S	-	-	-1.3	A	T_C=25℃
Pulsed Source Current [1]	I_{SM}	-	-	-10		

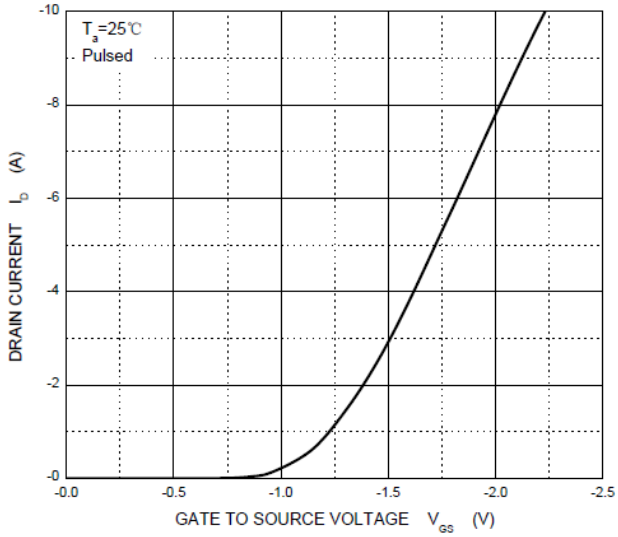
Note:
1. The data tested by pulsed, pulse width≦300μs, duty cycle≦2%.

TYPICAL CHARACTERISTIC CURVE

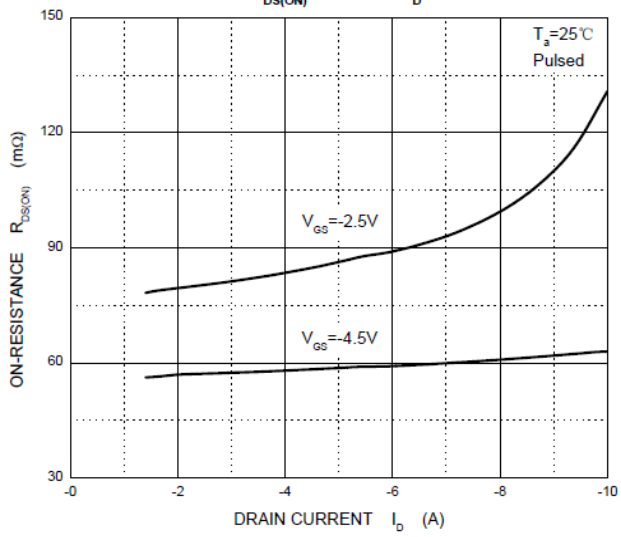
Output Characteristics



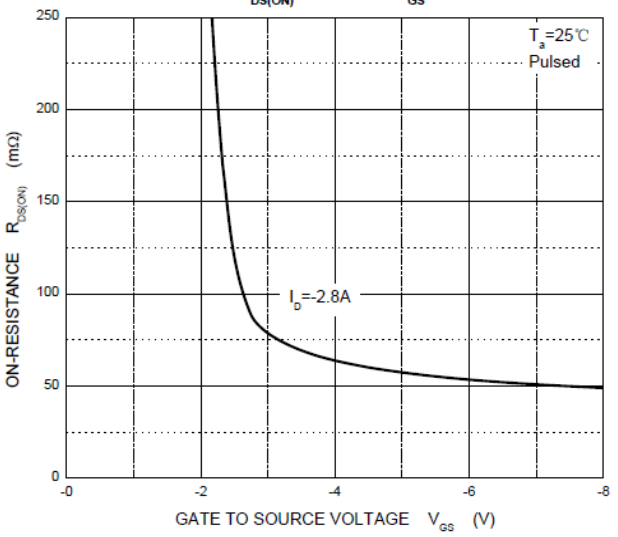
Transfer Characteristics



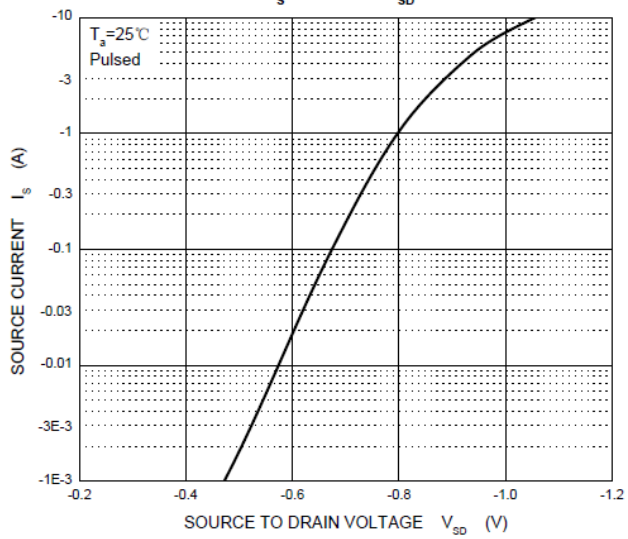
$R_{DS(ON)}$ — I_D



$R_{DS(ON)}$ — V_{GS}

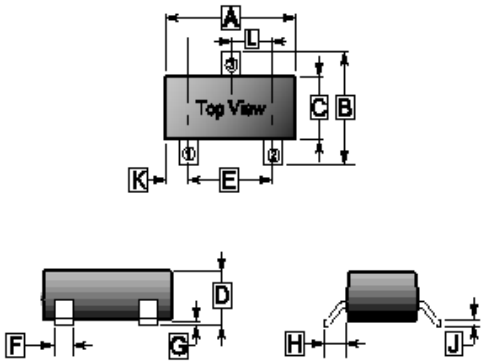


I_S — V_{SD}



PACKAGE OUTLINE DIMENSIONS

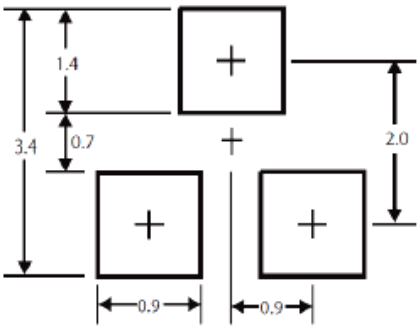
SOT-23



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	-	0.18
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