Elektronische Bauelemente

SMS4P03-C

-4.2A, -30V, $R_{DS(ON)}$ 70mΩ

P-Channel Enhancement Mode Power MOSFET

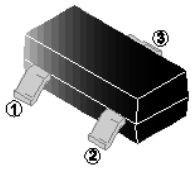
RoHS Compliant Product

A suffix of "-C" specifies halogen & lead-free

FEATURES

- High Power and Current Handing Capability
- Surface Mount Package

SOT-23

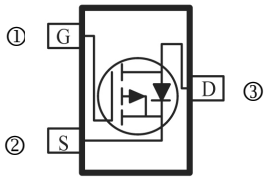


MARKING

R1

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7 inch



ORDER INFORMATION

Part Number	Type
SMS4P03-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}	-30	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	-4.2	A
Pulsed Drain Current [1]	I_{DM}	-16.8	A
Power Dissipation	P_D	350	mW
Thermal Resistance from Junction-Ambient	$R_{\theta JA}$	357	℃/W
Operating Junction & Storage Temperature Range	T_J, T_{STG}	-55~150	℃

ELECTRICAL CHARACTERISTICS (T_J=25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	-30	-	-	V	V_{GS}=0V, I_D= -250μA
Gate Threshold Voltage	$V_{GS(th)}$	-0.7	-1	-1.3	V	V_{DS}=V_{GS}, I_D= -250μA
Zero Gate Voltage Drain Current	I_{DSS}	-	-	-1	μA	V_{GS}=0V, V_{DS}= -24V
Gate-Body Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}= ±10V, V_{DS}=0V
Drain-Source On Resistance	$R_{DS(ON)}$	-	48	70	mΩ	V_{GS}= -10V, I_D= -4.2A
		-	56	80		V_{GS}= -4.5V, I_D= -4A
		-	72	120		V_{GS}= -2.5V, I_D= -1A
Forward Transconductance	g_{fs}	-	10	-	S	V_{DS}= -5V, I_D= -4.2A
Total Gate Charge	Q_g	-	8.5	-	nC	V_{DS}= -15V V_{GS}= -4.5V I_D= -4.2A
Gate-Source Charge	Q_{gs}	-	1.8	-		
Gate-Drain Charge	Q_{gd}	-	2.7	-		
Turn-On Delay Time	$T_{d(on)}$	-	7	-	nS	V_{DD}= -15V V_{GS}= -10V I_D= -4.2A R_G=6Ω
Rise Time	T_r	-	3	-		
Turn-Off Delay Time	$T_{d(off)}$	-	30	-		
Fall Time	T_f	-	12	-		
Input Capacitance	C_{iss}	-	880	-	pF	V_{DS}= -15V V_{GS}=0V f=1MHz
Output Capacitance	C_{oss}	-	105	-		
Reverse Transfer Capacitance	C_{rss}	-	65	-		
Source Drain Diode						
Continuous Source Current	I_S	-	-	-4.2	A	
Pulsed Source Current	I_{SM}	-	-	-16.8		
Diode Forward Voltage	V_{SD}	-	-	-1.2	V	I_S= -4.2A, V_{GS}=0
Reverse Recovery Time	t_{rr}	-	11	-	nS	V_{GS}=0V, I_S= -4.2A di/dt=100A/μs
Reverse Recovery Charge	Q_{rr}	-	3.5	-	nC	

Notes:
1. Repetitive rating: pulse width limited by max. junction temperature
2. Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%.

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TYPICAL CHARACTERISTIC CURVE

Figure1. Output Characteristics

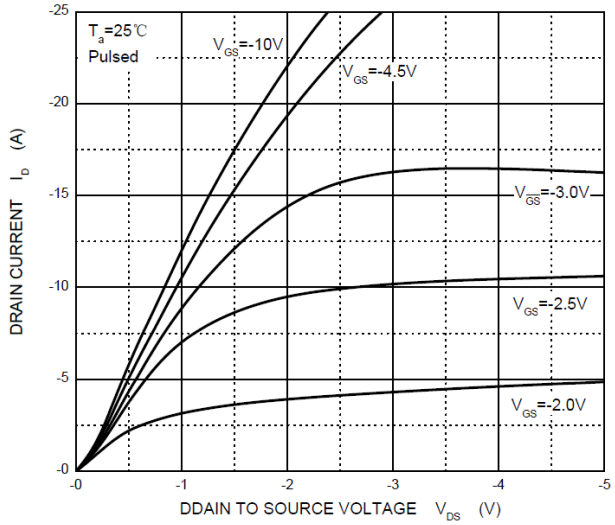


Figure2. Transfer Characteristics

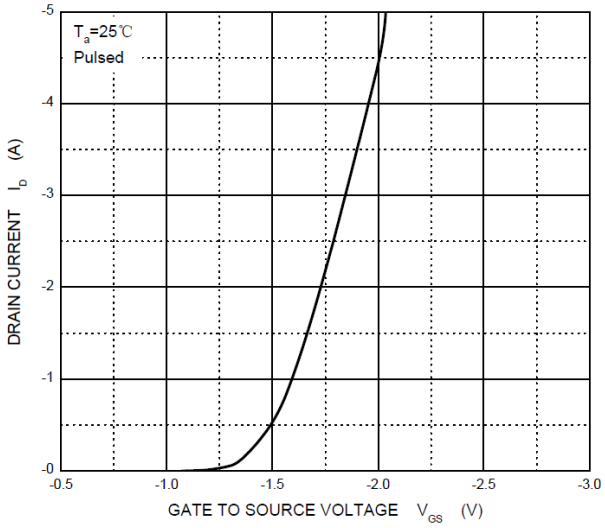


Figure3. $R_{DS(ON)}$—I_D

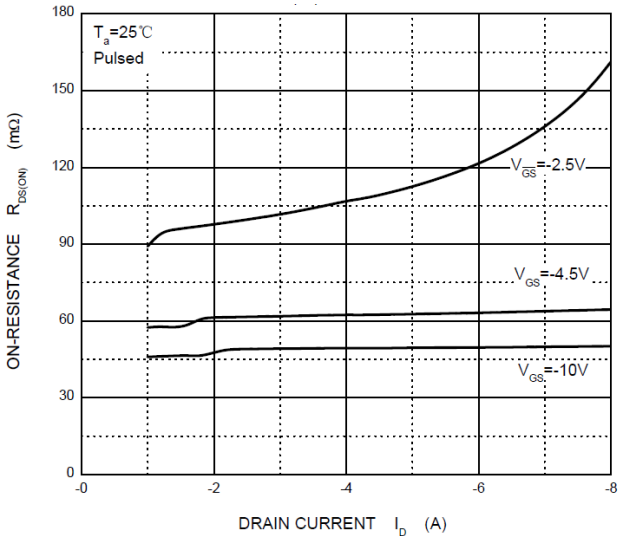


Figure4. $R_{DS(ON)}$—V_{GS}

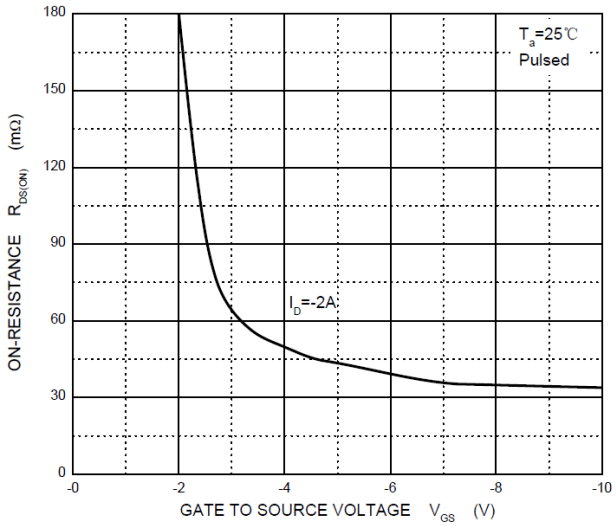


Figure5. I_S—V_{SD}

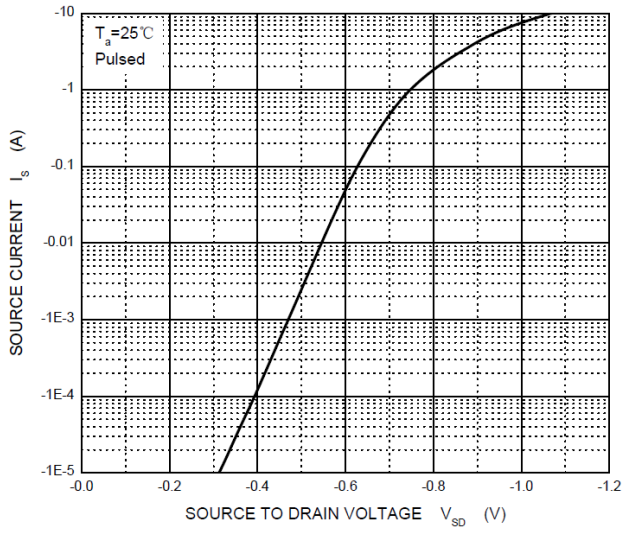
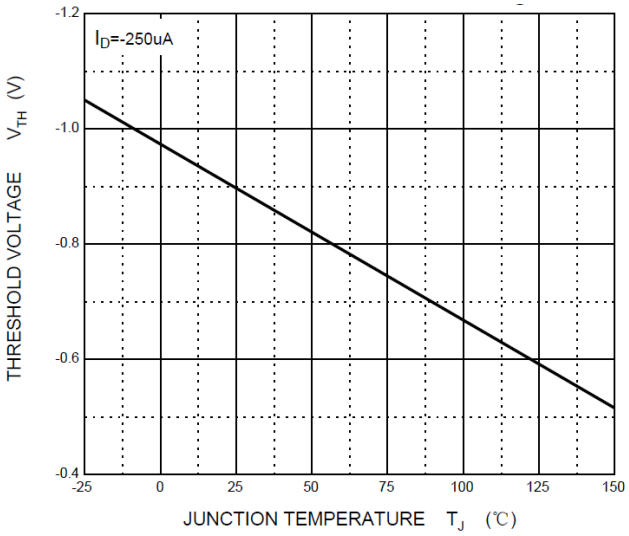
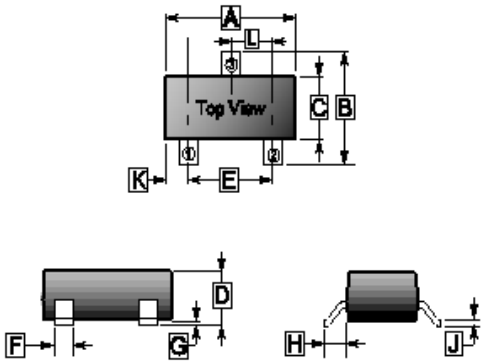


Figure6. Gate-Source Threshold Voltage



PACKAGE OUTLINE DIMENSIONS

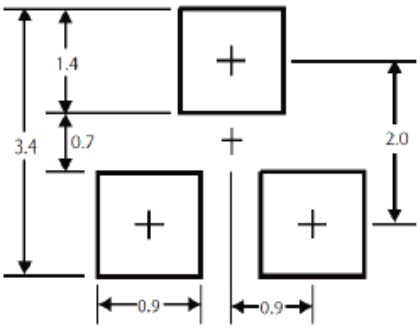
SOT-23



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	-	0.18
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