Elektronische Bauelemente

SMS05N10-C

5A, 100V, $R_{DS(ON)}$ 125mΩ

N-Channel Enhancement Mode Power MOSFET

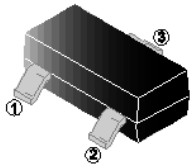
RoHS Compliant Product

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

FEATURES

- Improved dv/dt Capability
- Fast Switching
- Green Device Available

SOT-23



APPLICATION

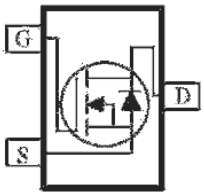
- Uninterruptible Power Supply
- Load Switch
- Battery Protection

MARKING

1005

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7 inch



ORDER INFORMATION

Part Number	Type
SMS05N10-C	Lead (Pb)-free and Halogen-free

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

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_A=25℃	I_D	5	A
Pulsed Drain Current [1]		I_{DM}	20	A
Power Dissipation	T_A=25℃	P_D	1.47	W
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55~150	℃
Thermal Resistance Ratings				
Thermal Resistance Junction-Ambient		$R_{\theta JA}$	85	℃/W

ELECTRICAL CHARACTERISTICS (T_J=25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	100	-	-	V	V_{GS}=0V, I_D=250μA
Gate-Threshold Voltage [2]	$V_{GS(th)}$	1.0	-	2.5	V	V_{DS}=V_{GS}, I_D=250μA
Gate-Source Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}=±20V, V_{DS}=0V
Drain-Source Leakage Current	I_{DSS}	-	-	1	μA	V_{DS}=100V, V_{GS}=0V
Static Drain-Source On-Resistance [2]	$R_{DS(ON)}$	-	-	125	mΩ	V_{GS}=10V, I_D=5A
		-	-	135		V_{GS}=4.5V, I_D=3A
Total Gate Charge	Q_g	-	12	-	nC	V_{DS}=30V V_{GS}=10V I_D=5A
Gate-Source Charge	Q_{gs}	-	2.2	-		
Gate-Drain Charge	Q_{gd}	-	2.5	-		
Turn-on Delay Time	$T_{d(on)}$	-	7	-	nS	V_{DS}=30V V_{GS}=10V I_D=5A R_G=1.8Ω
Rise Time	T_r	-	5	-		
Turn-off Delay Time	$T_{d(off)}$	-	16	-		
Fall Time	T_f	-	6	-		
Input Capacitance	C_{iss}	-	610	-	pF	V_{DS}=25V V_{GS}=0V f=1MHz
Output Capacitance	C_{oss}	-	40	-		
Reverse Transfer Capacitance	C_{rss}	-	25	-		
Source-Drain Diode						
Continuous Source Current	I_S	-	-	5	A	V_G=V_D=0V, Force Current
Diode Forward Voltage	V_{SD}	-	-	1.2	V	I_S=5A, V_{GS}=0V

Notes:
1. Repetitive Rating：Pulsed width limited by maximum junction temperature.
2. The data tested by pulsed , pulse width≦300μs, duty cycle≦2%.
3. Essentially independent of operating temperature.

CHARACTERISTIC CURVES

FIG. 1-I_S vs V_{SD}

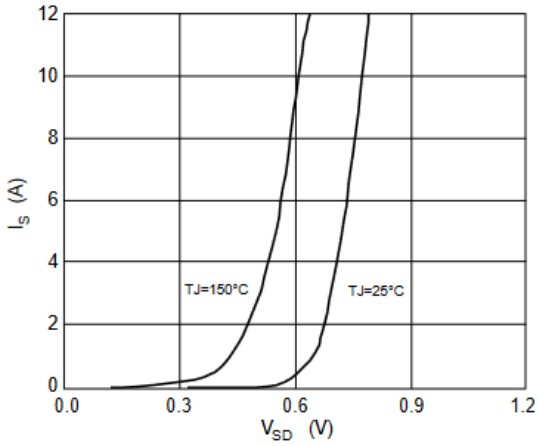


FIG. 2-Normalized $R_{DS(ON)}$ vs T_J

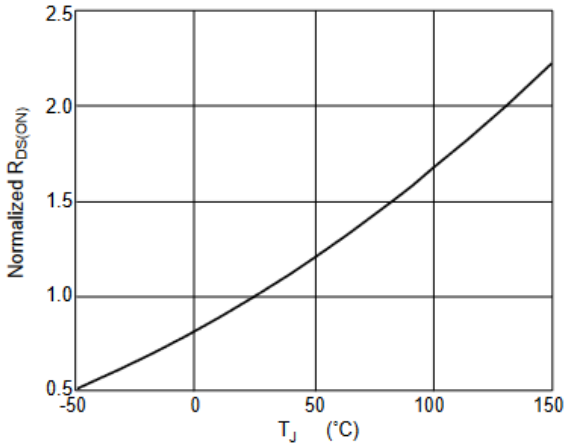


FIG. 3-Normalized V_{th} vs T_J

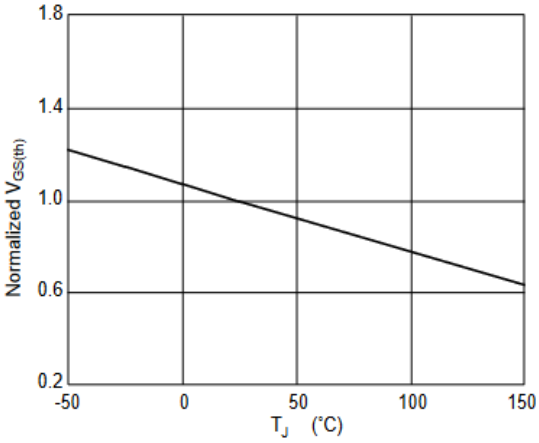


FIG. 4-$R_{DS(ON)}$ vs V_{GS}

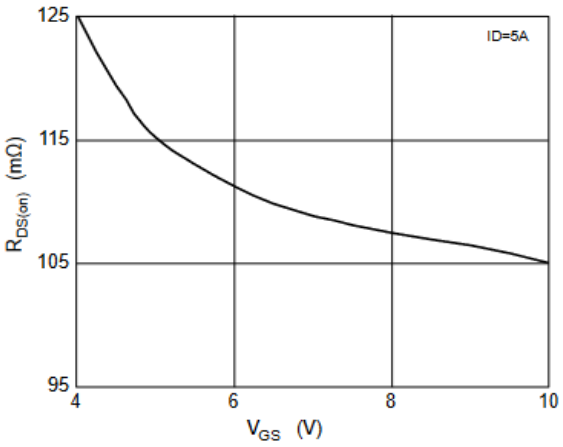


FIG. 5-Switching Time Waveform

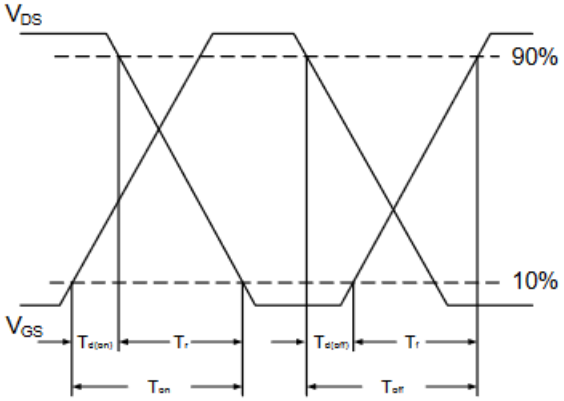
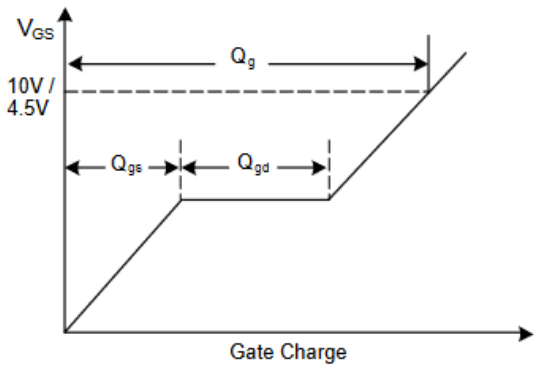
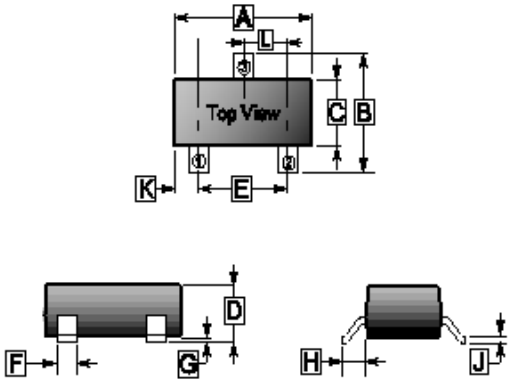


FIG. 6-Gate Charge Waveform



PACKAGE OUTLINE DIMENSIONS

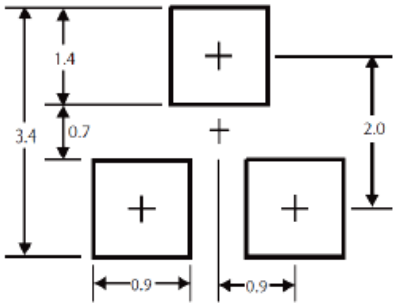
SOT-23



REF.	Millimeter	
	Min.	Max.
A	2.65	3.10
B	2.10	3.00
C	1.10	1.80
D	0.89	1.45
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