Elektronische Bauelemente

SMG2328S

1.2A , 100V , $R_{DS(ON)}$ 310 mΩ
N-Channel Enhancement Mode MOSFET

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

DESCRIPTION

The SMG2328S utilized advanced processing techniques to achieve the lowest possible on-resistance, extremely efficient and cost-effectiveness device. The SMG5406 is universally used for all commercial-industrial applications.

FEATURES

- Simple Drive Requirement
- Small Package Outline

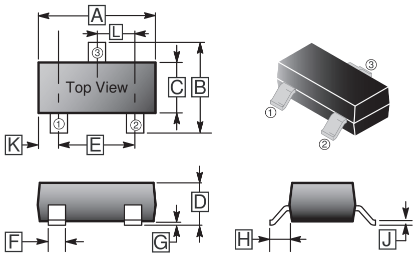
MARKING

2328S

PACKAGE INFORMATION

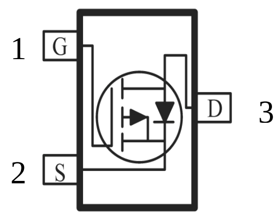
Package	MPQ	Leader Size
SC-59	3K	7 inch

SC-59



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.10	G	0.10 REF.	
B	2.25	3.00	H	0.40 REF.	
C	1.30	1.70	J	0.10	0.20
D	1.00	1.40	K	0.45	0.55
E	1.70	2.30	L	0.85	1.15
F	0.35	0.50			

TOP VIEW



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

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1], V_{GS}@10V	T_A=25℃	I_D	1.2	A
	T_A=70℃		1	
Pulsed Drain Current [2]		I_{DM}	5	A
Power Dissipation [3]	T_A=25℃	P_D	1	W
Operating Junction and Storage Temperature Range		T_j, T_{stg}	-55~150	℃
Thermal Resistance Rating				
Maximum Junction to Ambient [1]		$R_{\theta JA}$	125	℃ / W
Maximum Junction to Case [1]		$R_{\theta JC}$	80	℃ / W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Teat Conditions
Static							
Drain-Source Breakdown Voltage		BV_{DSS}	100	-	-	V	V_{GS}=0, I_D=250μA
Gate-Threshold Voltage		$V_{GS(th)}$	1	-	2.5	V	V_{DS}=V_{GS}, I_D=250μA
Forward Transconductance		g_{fs}	-	2.4	-	S	V_{DS} =5V, I_D =1A
Gate-Body Leakage Current		I_{GSS}	-	-	±100	nA	V_{GS}=±20V
Drain-Source Leakage Current	T_J=25℃	I_{DSS}	-	-	1	μA	V_{DS}=80V, V_{GS}=0
	T_J=55℃		-	-	5		V_{DS}=80V, V_{GS}=0
Drain-Source On-Resistance [1]		$R_{DS(ON)}$	-	-	310	mΩ	V_{GS}=10V, I_D=1A
			-	-	320		V_{GS}=4.5V, I_D=0.5A
Total Gate Charge		Q_g	-	9.7	-	nC	V_{DS}=80V, V_{GS}=10V, I_D=1A
Gate-Source Charge		Q_{gs}	-	1.6	-		
Gate-Drain (''Miller'')Charge		Q_{gd}	-	1.7	-		
Turn-on Delay Time[2]		$T_{d(on)}$	-	1.6	-	nS	V_{DD}=50V, V_{GS}=10V, R_G=3.3Ω, R_L=30Ω, I_D=1A
Rise Time		T_r	-	19	-		
Turn-off Delay Time		$T_{d(off)}$	-	13.6	-		
Fall Time		T_f	-	19	-		
Input Capacitance		Ciss	-	508	-	pF	V_{GS}=0, V_{DS}=15V, f=1.0MHz
Output Capacitance		Coss	-	29	-		
Reverse Transfer Capacitance		Crss	-	16.4	-		
Source-Drain Diode							
Diode Forward Voltage[1]		V_{SD}	-	-	1.2	V	I_S=1A, V_{GS}=0
Continuous Source Current[1,4]		I_S	-	-	1.2	A	V_G=V_D=0, Force Current
Pulsed Source Current[2,4]		I_{SM}	-	-	5		
Reverse Recovery Time		T_{RR}	-	14	-	nS	I_F=1A, dI/dt=100A/μs T_J=25℃
Reverse Recovery Charge		Q_{RR}	-	9.3	-	nC	

Notes:
1. Surface mounted on a 1 inch2 FR-4 board with 2OZ copper. ;270℃ / W when mounted on min. copper pa d.
2. The data tested by pulsed , pulse width≦300μs, duty cycle≦2%
3. The power dissipation is limited by 150 ℃ junc tion temperature
4. The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation

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CHARACTERISTIC CURVES

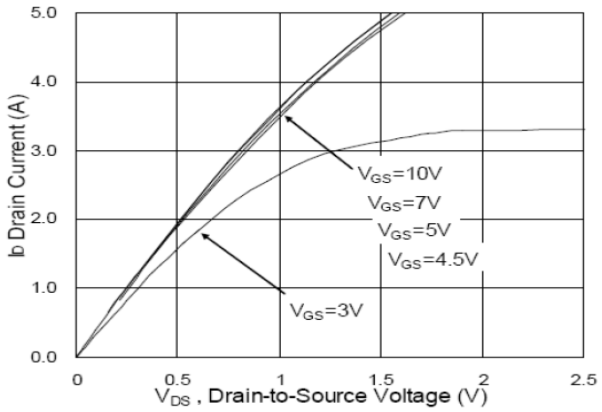

Fig.1 Typical Output Characteristics

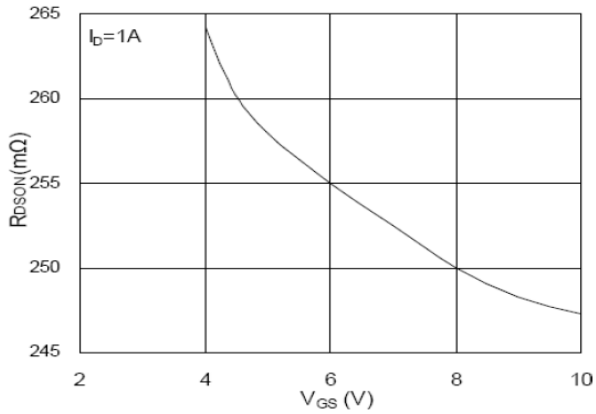

Fig.2 On-Resistance vs. Gate-Source

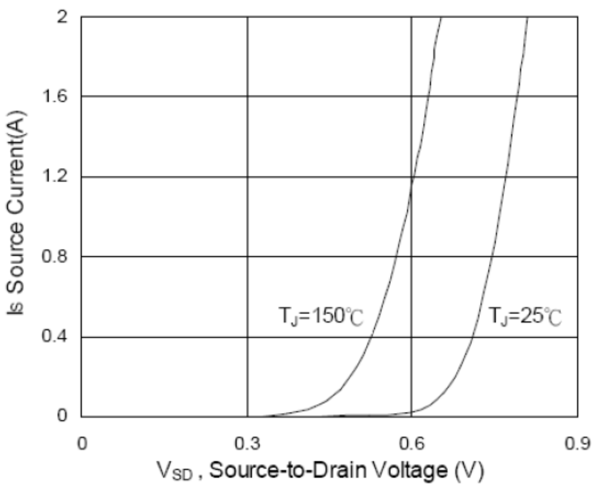

Fig.3 Forward Characteristics of Reverse

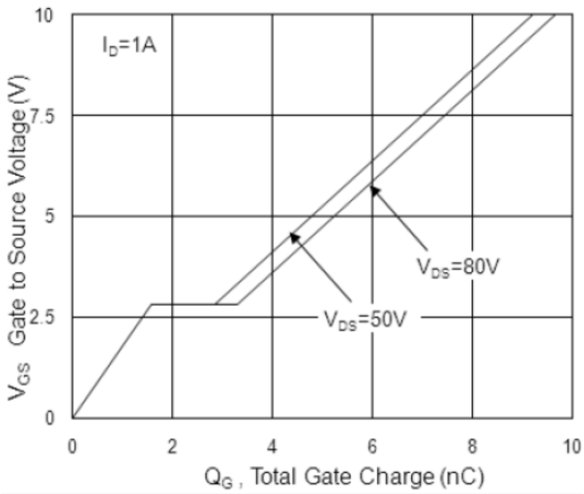

Fig.4 Gate-Charge Characteristics

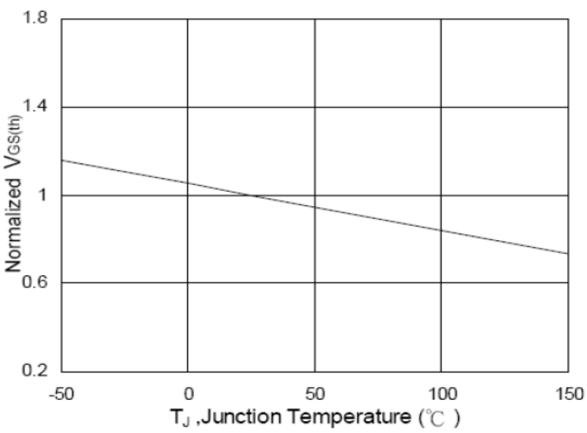

Fig.5 Normalized $V_{GS(th)}$ vs. T_J

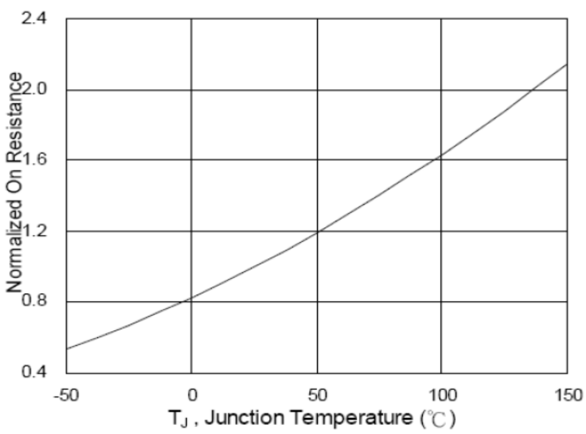

Fig.6 Normalized R_{DSON} vs. T_J

CHARACTERISTIC CURVES

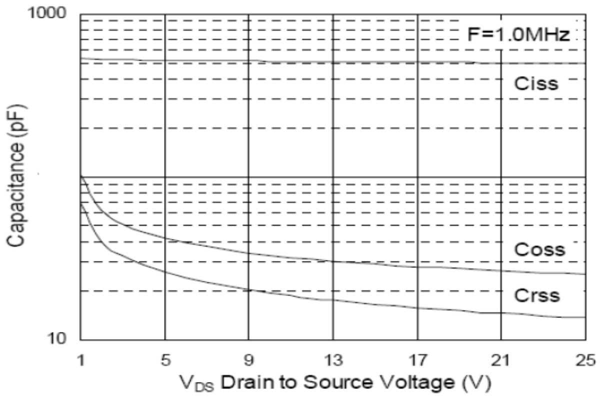

Fig.7 Capacitance

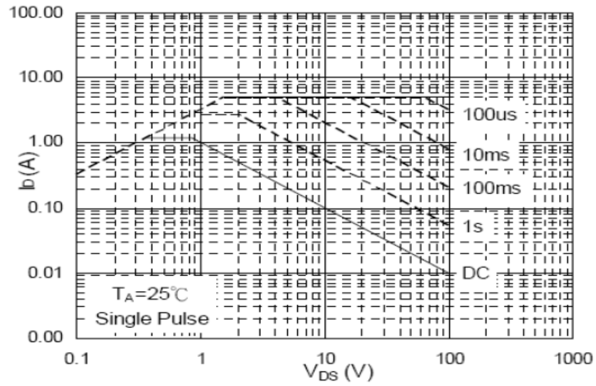

Fig.8 Safe Operating Area

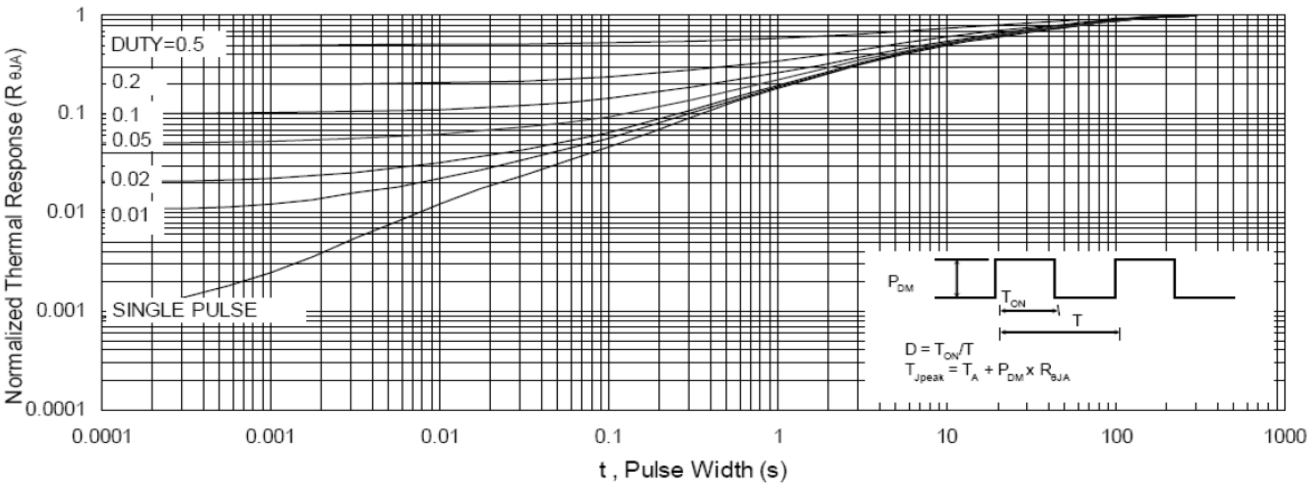

Fig.9 Normalized Maximum Transient Thermal Impedance

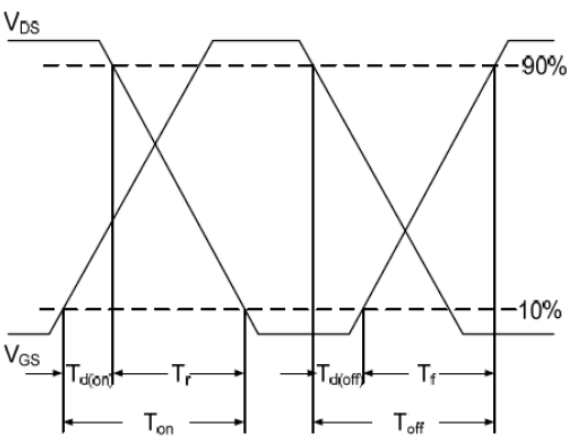

Fig.10 Switching Time Waveform

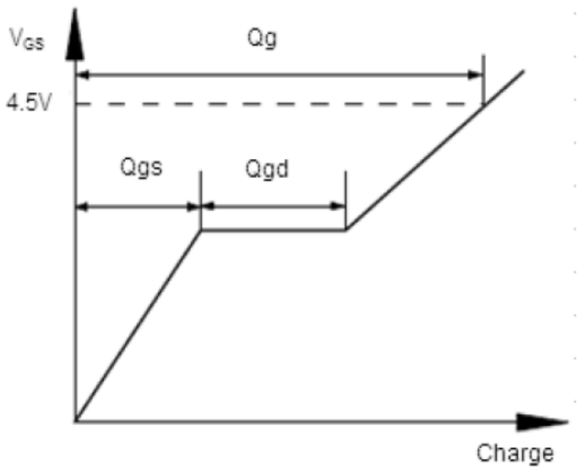

Fig.11 Gate Charge Waveform