Elektronische Bauelemente

SMG2329S

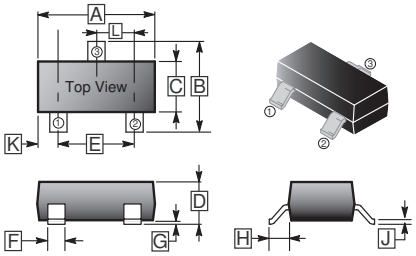
-1.2A , -100V , $R_{DS(ON)}$ 650 mΩ
P-Channel Enhancement Mode MOSFET

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

DESCRIPTION

The SMG2329S provide the designer with best combination of fast switching, low on-resistance and cost-effectiveness.
The SMG5409 is universally preferred for all commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

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			

FEATURES

- Simple Drive Requirement
- Small Package Outline

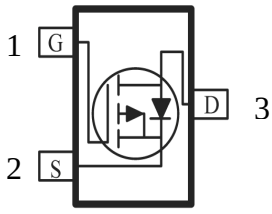
MARKING

2329S

PACKAGE INFORMATION

Package	MPQ	Leader Size
SC-59	3K	7 inch

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, V_{GS}=10V [1]	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 [3]		$R_{\theta JA}$	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= -250uA
Gate-Threshold Voltage	$V_{GS(th)}$	-1	-	-2.5	V	V_{DS}=V_{GS}, I_D= -250uA
Gate-Body Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}=±20V
Drain-Source Leakage Current	I_{DSS}	-	-	-10	μA	V_{DS}= -80V, V_{GS}=0, T_J=25℃
		-	-	-100		V_{DS}= -80V, V_{GS}=0, T_J=55℃
Drain-Source On-Resistance [2]	$R_{DS(ON)}$	-	-	650	mΩ	V_{GS}= -10V, I_D= -1A
		-	-	700		V_{GS}= -4.5V, I_D= -0.5A
Forward Transconductance	g_{fs}	-	3	-	S	V_{DS}= -5V, I_D= -1A
Dynamic						
Total Gate Charge	Q_g	-	9.3	-	nC	V_{DS}= -50V, V_{GS}= -10V, I_D= -1A
Gate-Source Charge	Q_{gs}	-	1.75	-		
Gate-Drain (“Miller”) Change	Q_{gd}	-	1.25	-		
Turn-on Delay Time	$T_{d(on)}$	-	2	-	nS	V_{DS}= -50V, V_{GS}= -10V, R_G=3.3Ω, I_D= -0.5A
Rise Time	T_r	-	18.4	-		
Turn-off Delay Time	$T_{d(off)}$	-	19.6	-		
Fall Time	T_f	-	19.6	-		
Input Capacitance	C_{iss}	-	513	-	pF	V_{GS}=0, V_{DS}= -15V, f=1.0MHz
Output Capacitance	C_{oss}	-	29	-		
Reverse Transfer Capacitance	C_{rss}	-	17	-		
Source-Drain Diode						
Diode Forward Voltage [2]	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=0V , Force Current
Pulsed Source Current [2,4]	I_{SM}	-	-	-5	A	
Reverse Recovery Time	T_{RR}	-	27	-	ns	I_S= -1A, dI/dt=100A/μs, T_J=25℃
Reverse Recovery Charge	Q_{RR}	-	36	-	nC	

Notes:
1. surface mounted on a 1 inch2 FR-4 board with 2OZ copper. , 270℃/W when mounted on Min. copper pad.
2. The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%
3. The power dissipation is limited by 150℃ junction temperature
4. The data is theoretically the same as ID and IDM , in real applications , should be limited by total power dissipation.

CHARACTERISTIC CURVES

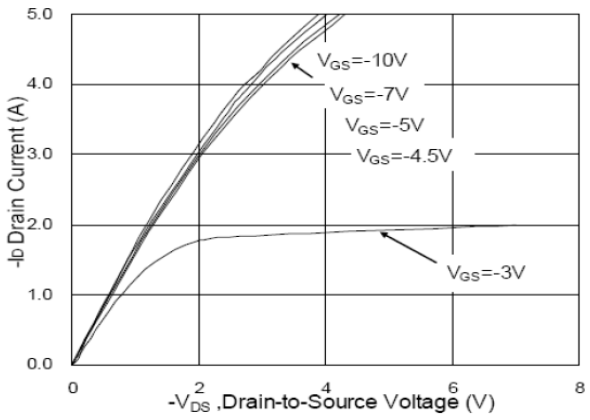


Fig 1. Typical Output Characteristics

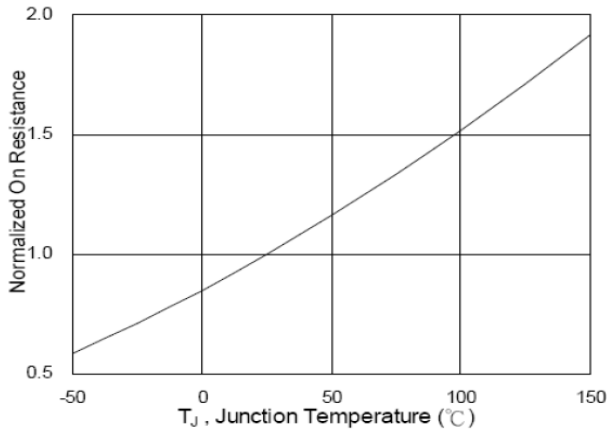


Fig 2. On-Resistance vs. Junction Temperature

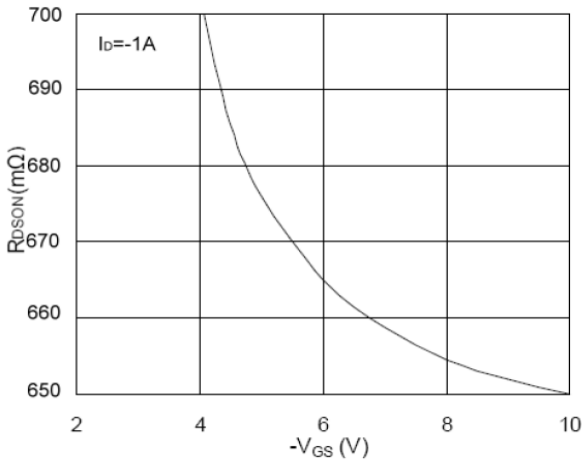


Fig 3. On-Resistance vs. Gate-Source Voltage

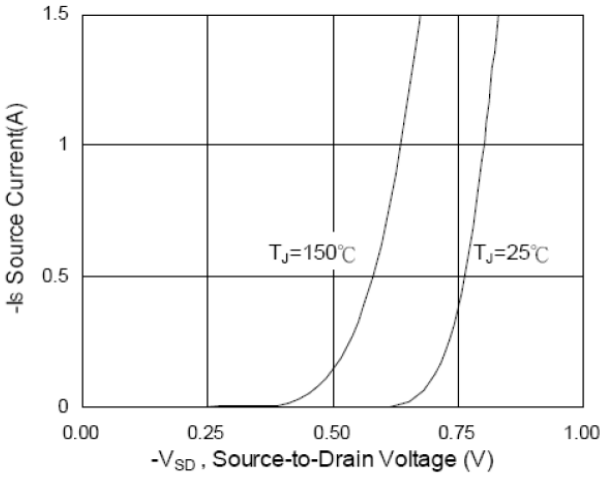


Fig 4. Body Diode Characteristics

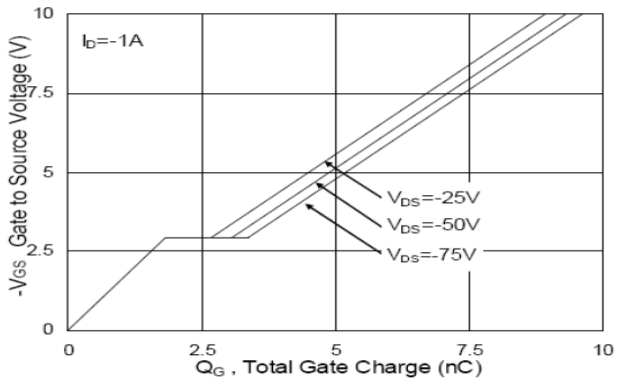


Fig 5. Gate Charge Characteristics

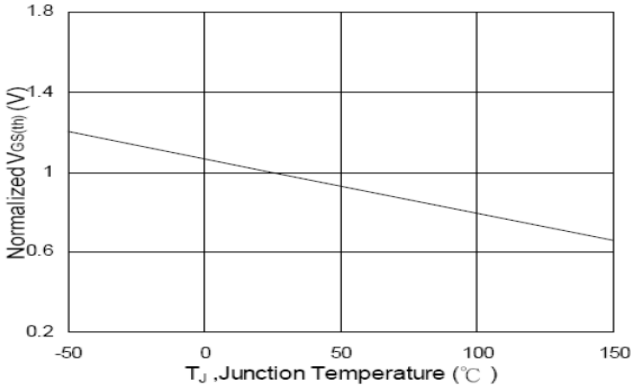


Fig 6. Threshold Voltage vs. Junction Temperature

CHARACTERISTIC CURVES

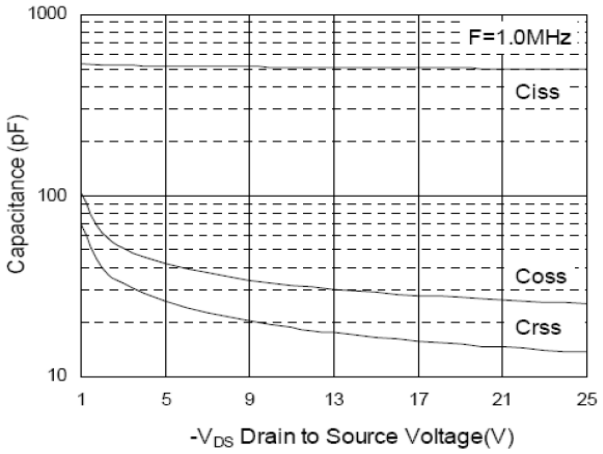


Fig 7. Typical Capacitance Characteristics

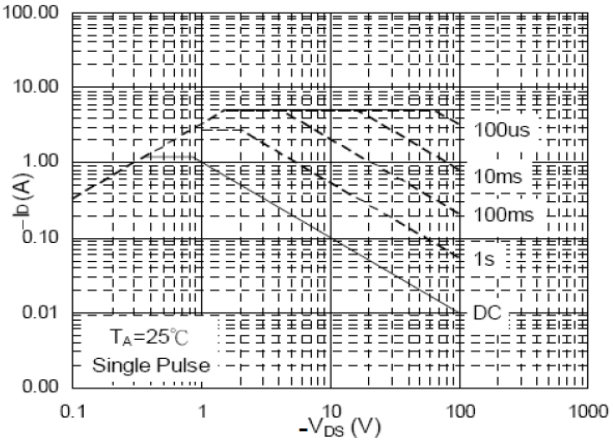


Fig 8. Safe Operating Area

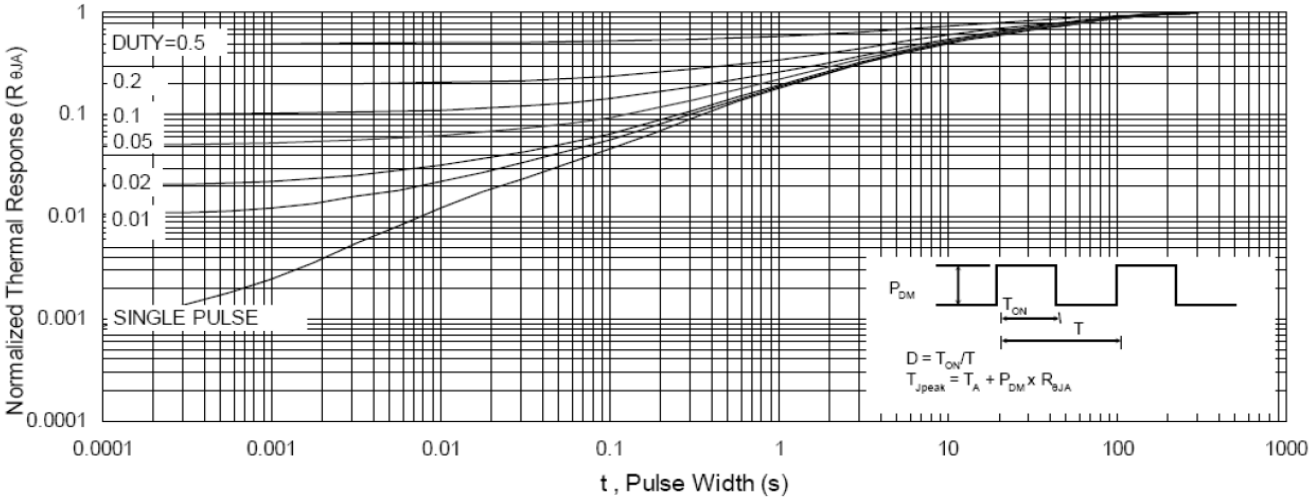


Fig 9. Normalized Maximum Transient Thermal Impedance

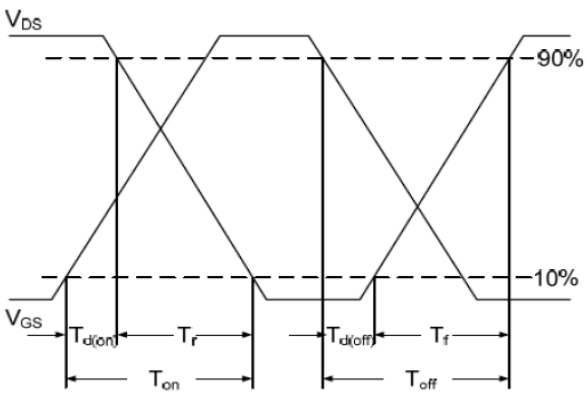


Fig 10. Switching Time Waveform

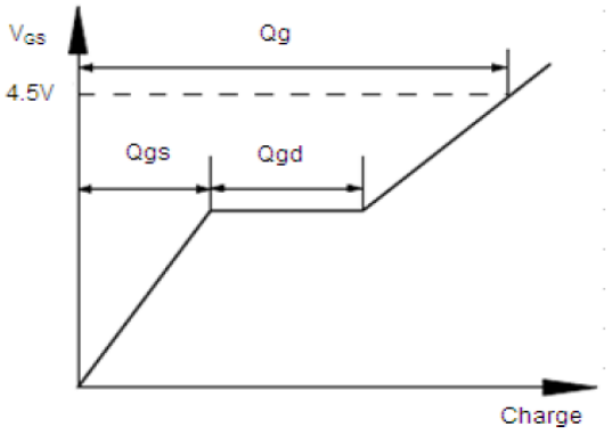


Fig 11. Gate Charge Waveform