Elektronische Bauelemente

SMG2322-C

0.6A, 200V, $R_{DS(ON)}$ 1.35Ω
N-Channel Enhancement Mode MOSFET

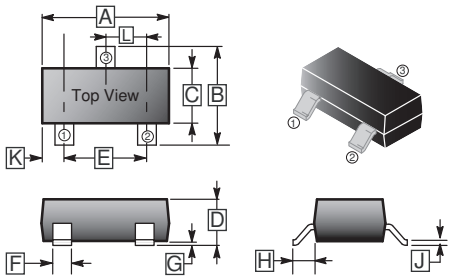
RoHS Compliant Product
A suffix of "-C" specifies halogen and lead-free

DESCRIPTION

The SMG2322-C is the highest performance trench N-Ch MOSFETs with extreme high cell density, which provide excellent $R_{DS(ON)}$ and gate charge for most of the synchronous buck converter applications.

The SMG2322-C meet the RoHS and Green Product requirement with full function reliability approved.

SC-59



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.10	G	0.10 REF.	
B	2.10	3.00	H	0.40 REF.	
C	1.20	1.70	J	0.047	0.207
D	0.89	1.40	K	0.5 REF.	
E	2.00 Typ.		L	0.95 REF.	
F	0.30	0.50			

FEATURES

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

MARKING

2322

TOP VIEW

PACKAGE INFORMATION

Package	MPQ	Leader Size
SC-59	3K	7 inch

ORDER INFORMATION

Part Number	Type
SMG2322-C	Lead (Pb)-free and Halogen-free

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	200	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1] @V_{GS}=10V	T_A=25°C	I_D	0.6	A
	T_A=70°C		0.48	
Pulsed Drain Current [3]		I_{DM}	1.8	A
Total Power Dissipation	T_A=25°C	P_D	1	W
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55~150	°C
Thermal Resistance Ratings				
Thermal Resistance Junction-ambient [1]		$R_{\theta JA}$	125	°C/W
Thermal Resistance Junction-ambient [2]			270	
Thermal Resistance Junction-case [1]		$R_{\theta JC}$	80	

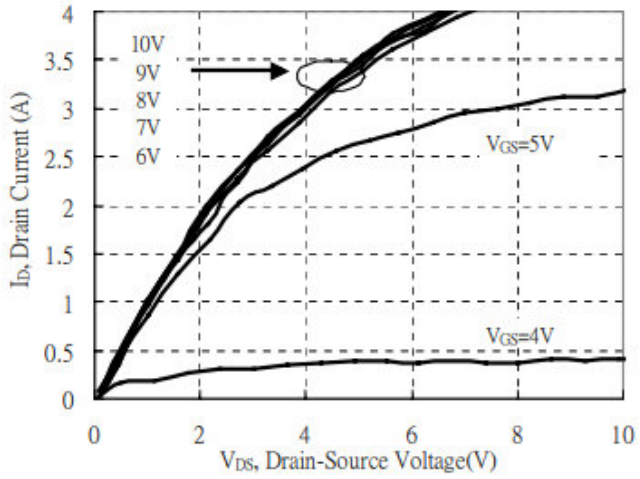
ELECTRICAL CHARACTERISTICS (T_J=25°C unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	200	-	-	V	V_{GS}=0, I_D=250μA
Gate Threshold Voltage	$V_{GS(th)}$	2	-	4	V	V_{DS}=V_{GS}, I_D=250μA
Forward Transconductance	g_{fs}	-	1.9	-	S	V_{DS}=5V, I_D=0.5A
Gate-Source Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}= ±20V
Drain-Source Leakage Current	I_{DSS}	-	-	1	μA	V_{DS}=160V, V_{GS}=0
Static Drain-Source On-Resistance [4]	$R_{DS(ON)}$	-	-	1.35	Ω	V_{GS}=10V, I_D=0.5A
		-	-	1.7		V_{GS}=6V, I_D=0.1A
Total Gate Charge	Q_g	-	5.8	-	nC	I_D=0.5A V_{DS}=160V V_{GS}=10V
Gate-Source Charge	Q_{gs}	-	0.7	-		
Gate-Drain Charge	Q_{gd}	-	2.5	-		
Turn-on Delay Time	$T_{d(on)}$	-	33	-	nS	V_{DD}=100V I_D=0.5A V_{GS}=10V R_G=25Ω
Rise Time	T_r	-	50	-		
Turn-off Delay Time	$T_{d(off)}$	-	150	-		
Fall Time	T_f	-	75	-		
Input Capacitance	C_{iss}	-	137	-	pF	V_{GS}=0 V_{DS}=25V f=1MHz
Output Capacitance	C_{oss}	-	15	-		
Reverse Transfer Capacitance	C_{rss}	-	6	-		
Source-Drain Diode						
Continuous Source Current [1]	I_S	-	-	0.5	A	
Pulsed Source Current [3]	I_{SM}	-	-	1.5		
Forward on Voltage [4]	V_{SD}	-	-	1.2	V	I_S=0.5A, V_{GS}=0
Reverse Recovery Time	t_{rr}	-	90	-	nS	I_F=0.5A, dI/dt=100A/μs T_J=25°C
Reverse Recovery Charge	Q_{rr}	-	280	-	nC	

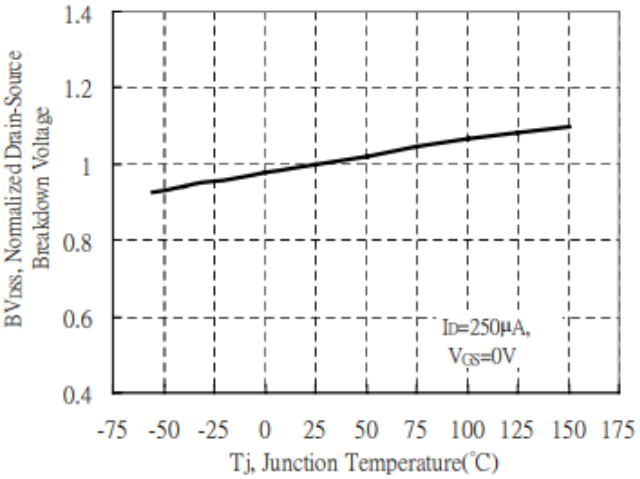
Notes:
1. Surface mounted on 1”x1” FR4 board with 2OZ copper.
2. When mounted on Min. copper pad.
3. Pulse width limited by maximum junction temperature, Pulse Width≦100μs, Duty Cycle≦1%.
4. Pulse Test: Pulse Width≦300μs, Duty Cycle≦2%.

CHARACTERISTIC CURVES

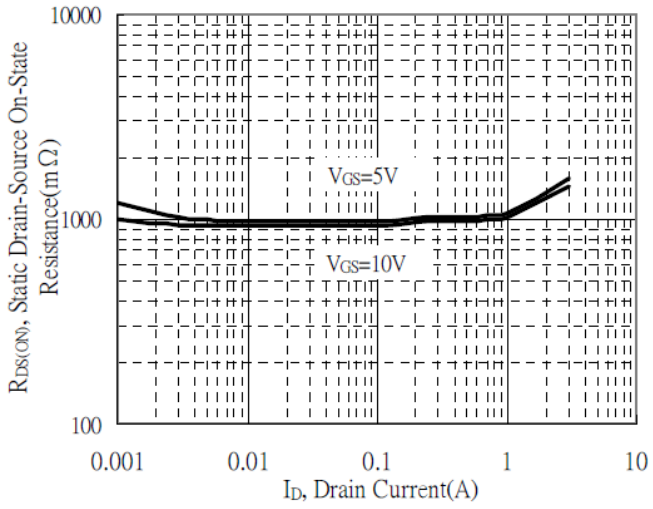
Typical Output Characteristics



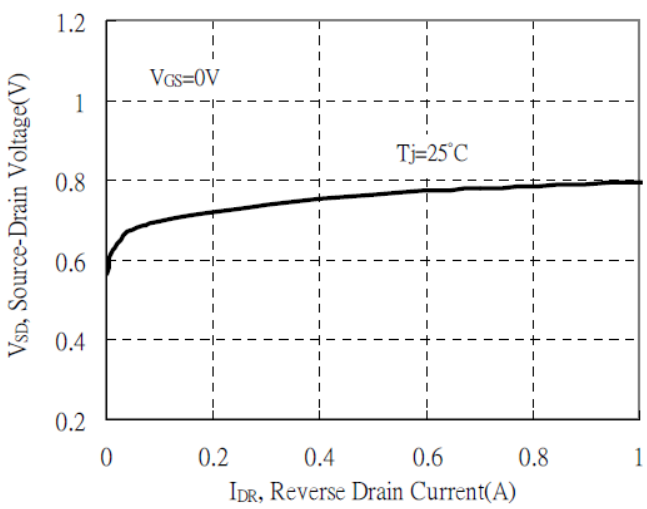
Brekdown Voltage vs Ambient Temperature



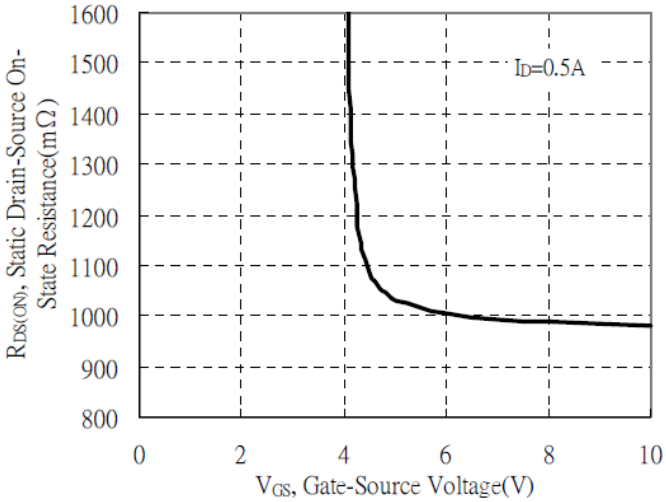
Static Drain-Source On-State resistance vs Drain Current



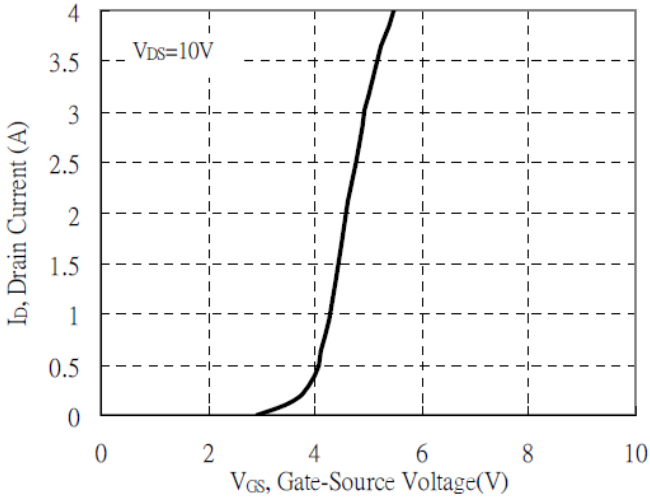
Reverse Drain Current vs Source-Drain Voltage



Static Drain-Source On-State Resistance vs Gate-Source Voltage

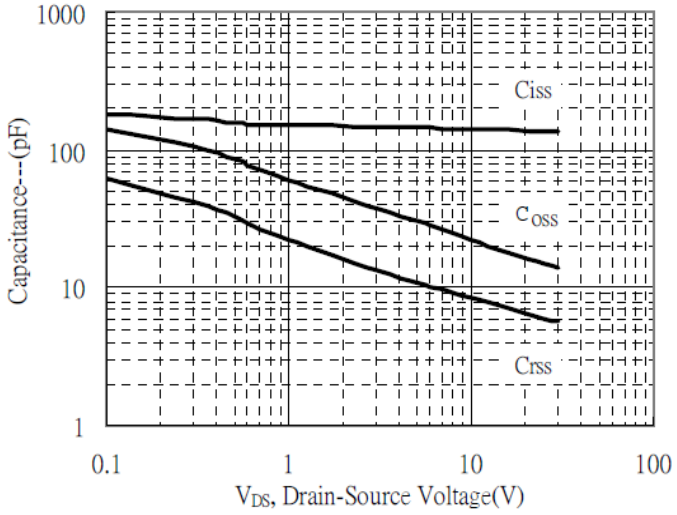


Typical Transfer Characteristics

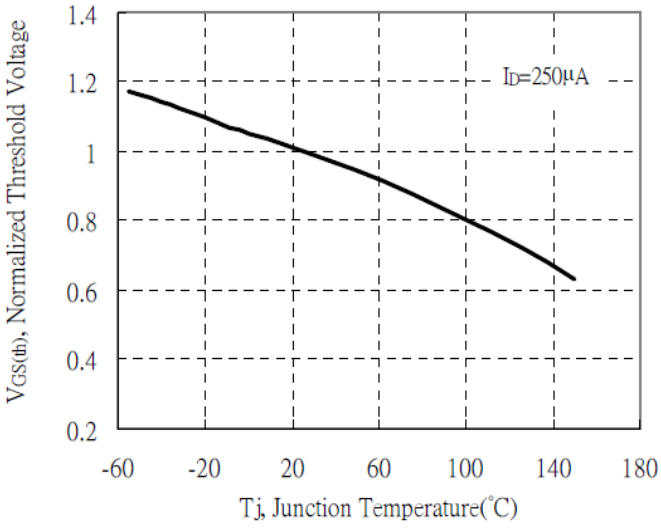


CHARACTERISTIC CURVES

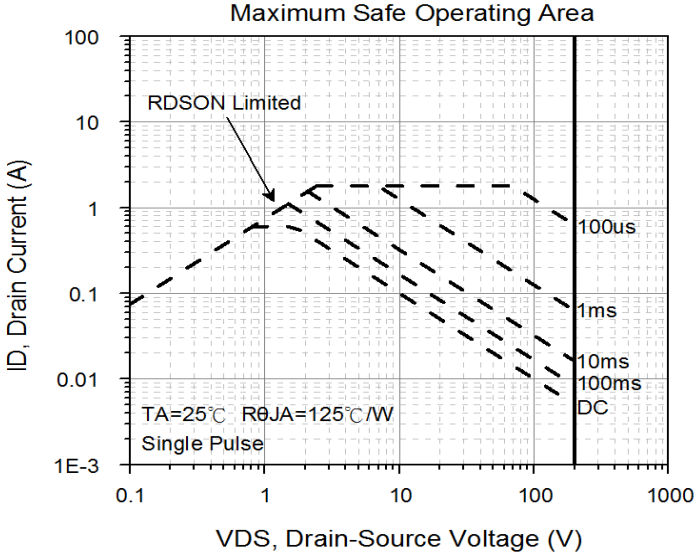
Capacitance vs Drain-to-Source Voltage



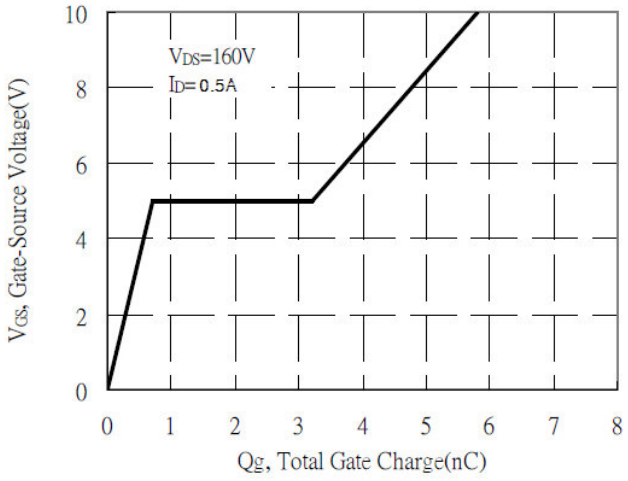
Threshold Voltage vs Junction Tempearture



Maximum Safe Operating Area



Gate Charge Characteristics



Transient Thermal Response Curves