Elektronische Bauelemente

SMG2315-C

-1.5A, -100V, $R_{DS(ON)}$ 240mΩ
P-Channel Enhancement Mode Power MOSFET

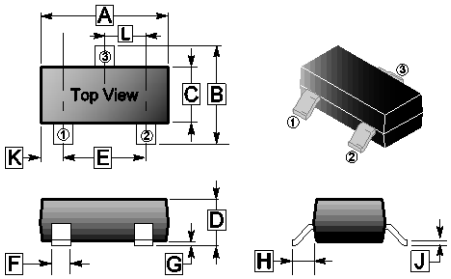
RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

The SMG2315-C is the highest performance trench P-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 SMG2315-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	0.50 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

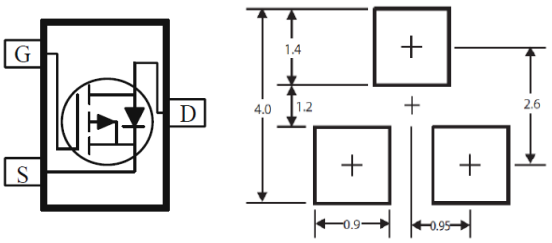
MARKING

2315

PACKAGE INFORMATION

Package	MPQ	Leader Size
SC-59	3K	7 inch

Mounting Pad Layout



*Dimensions in millimeters

ORDER INFORMATION

Part Number	Type
SMG2315-C	Lead (Pb)-free and Halogen-free

ABSOLUTE MAXIMUM RATINGS

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°C	I_D	-1.5	A
	T_A=70°C		-1.2	
Pulsed Drain Current [3]		I_{DM}	-10	A
Power Dissipation	T_A=25°C	P_D	1	W
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55~150	°C
Thermal Resistance Data				
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	

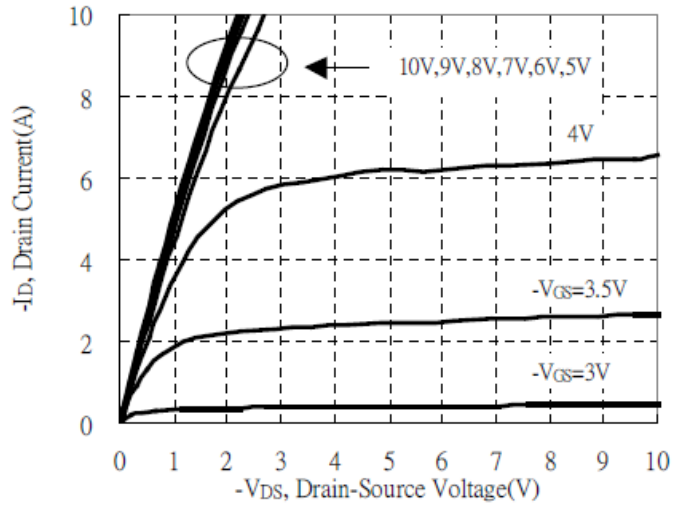
ELECTRICAL CHARACTERISTICS (T_J=25°C unless otherwise specified)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage		BV_{DSS}	-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}	-	5	-	S	V_{DS}= -5V,,I_D= -1.5A
Gate-Source Leakage Current		I_{GSS}	-	-	±100	nA	V_{GS}= ±20V
Drain-Source Leakage Current	T_J=25°C	I_{DSS}	-	-	-1	μA	V_{DS}= -80V, V_{GS}=0
	T_J=55°C		-	-	-25		V_{DS}= -80V, V_{GS}=0
Static Drain-Source On-Resistance [4]		$R_{DS(ON)}$	-	-	240	mΩ	V_{GS}= -10V, I_D= -1A
			-	-	280		V_{GS}= -4.5V, I_D= -0.5A
Total Gate Charge		Q_g	-	21.9	-	nC	I_D= -1.5A V_{DS}= -80V V_{GS}= -10V
Gate-Source Charge		Q_{gs}	-	4.3	-		
Gate-Drain Charge		Q_{gd}	-	3.8	-		
Turn-on Delay Time		$T_{d(on)}$	-	6.6	-	nS	V_{DD}= -50V I_D= -1A V_{GS}= -10V R_G=6Ω
Rise Time		T_r	-	4.4	-		
Turn-off Delay Time		$T_{d(off)}$	-	68.4	-		
Fall Time		T_f	-	32.4	-		
Input Capacitance		C_{iss}	-	1294	-	pF	V_{GS}=0 V_{DS}= -25V f=1MHz
Output Capacitance		C_{oss}	-	53	-		
Reverse Transfer Capacitance		C_{rss}	-	7	-		
Source-Drain Diode							
Continuous Source Current [1]		I_S	-	-	-1.5	A	
Pulsed Source Current [3]		I_{SM}	-	-	-10		
Forward on Voltage [4]		V_{SD}	-	-	-1.2	V	I_S= -1A, V_{GS}=0
Reverse Recovery Time		t_{rr}	-	21	-	nS	I_F= -1.5A, dI/dt=100A/μs T_J=25°C
Reverse Recovery Charge		Q_{rr}	-	20	-	nC	

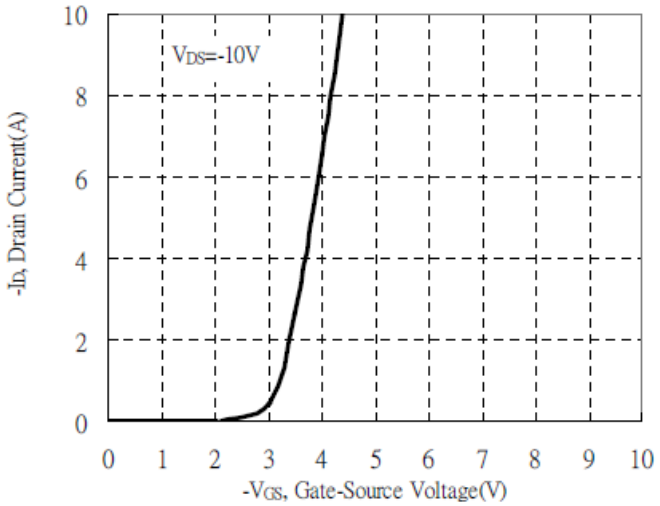
Notes:
1. Surface Mounted on 1”x1” FR-4 Board with 2oz copper.
2. When mounted on Min. copper pad.
3. Pulse width limited by maximum junction temperature, Pulse Width≦300μs, Duty Cycle≦2%.
4. Pulse Test: Pulse Width≦300μs, Duty Cycle≦2%.

CHARACTERISTIC CURVE 0

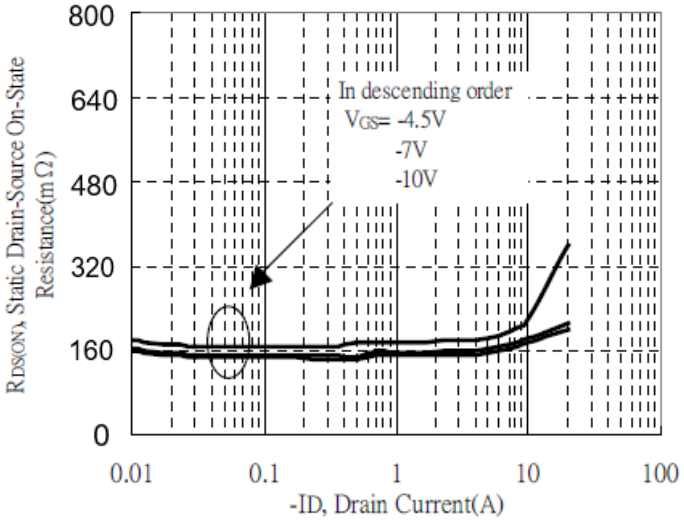
Typical Output Characteristics



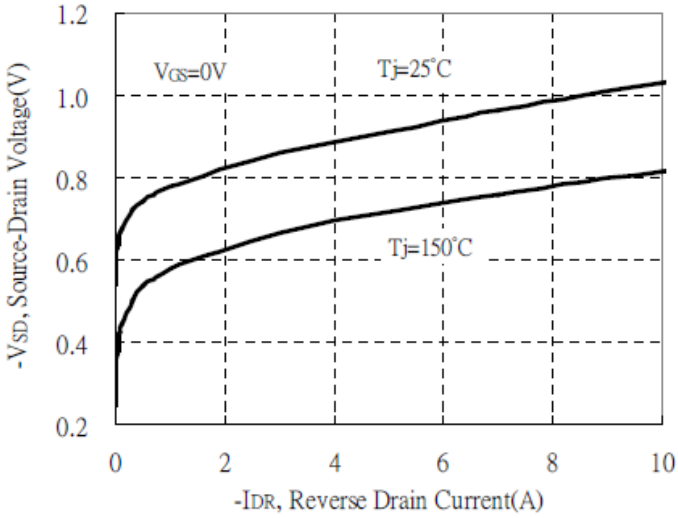
Typical Transfer Characteristics



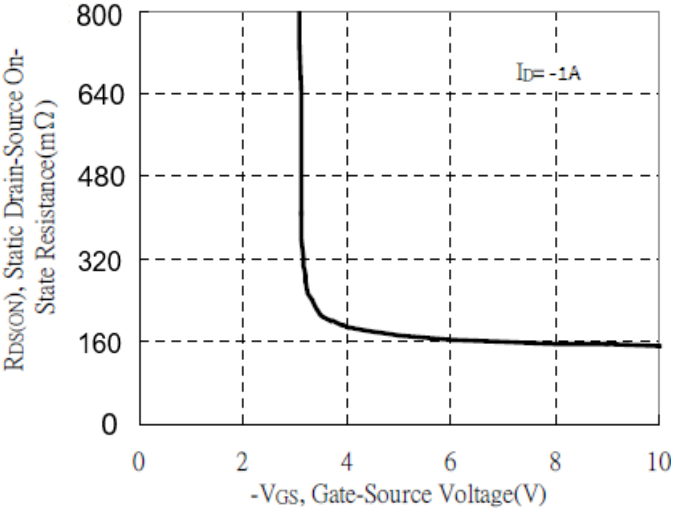
Static Drain-Source On-State resistance vs Drain Current



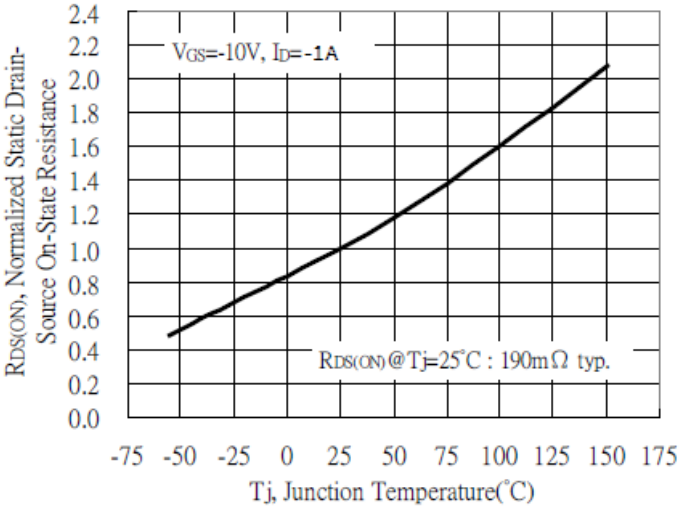
Reverse Drain Current vs Source-Drain Voltage



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



Drain-Source On-State Resistance vs Junction Tempearture



CHARACTERISTIC CURVE