Elektronische Bauelemente

SMG3407

-4.5A , -30V , $R_{DS(ON)}$ 50 mΩ
P-Channel Enhancement Mode MOSFET

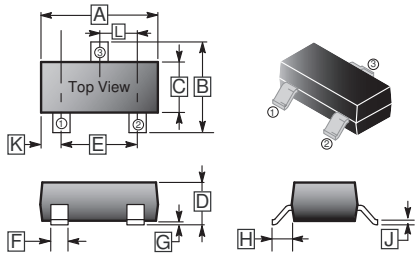
RoHS Compliant Product
A suffix of "-C" specifies halogen and lead-free

DESCRIPTION

The SMG3407 provide the designer with best combination of fast switching, low on-resistance and cost-effectiveness.

The SMG3407 is universally preferred for all commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

SC-59



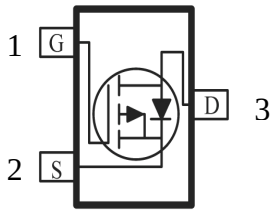
REF.	Millimeter Min.	Millimeter Max.	REF.	Millimeter Min.	Millimeter Max.
A	2.70	3.10	G	0.10 REF.	
B	2.10	3.00	H	0.40 REF.	
C	1.20	1.70	J	0.047	0.207
D	0.89	1.40	K	0.5 REF.	
E	2.00 Typ.		L	0.95 REF.	
F	0.30	0.50			

FEATURES

- Simple Drive Requirement
- Small Package Outline
- Surface Mount Device

MARKING

3407



PACKAGE INFORMATION

Package	MPQ	Leader Size
SC-59	3K	7 inch

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1] @V_{GS}=10V	T_A=25℃	I_D	-4.5	A
	T_A=70℃		-3.5	
Pulsed Drain Current [3]		I_{DM}	-20	A
Power Dissipation	T_A=25℃	P_D	1.38	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	℃
Thermal Resistance Rating				
Maximum Junction to Ambient [1]		$R_{\theta JA}$	90	℃ / W
Maximum Junction to Ambient [2]		$R_{\theta JA}$	270	

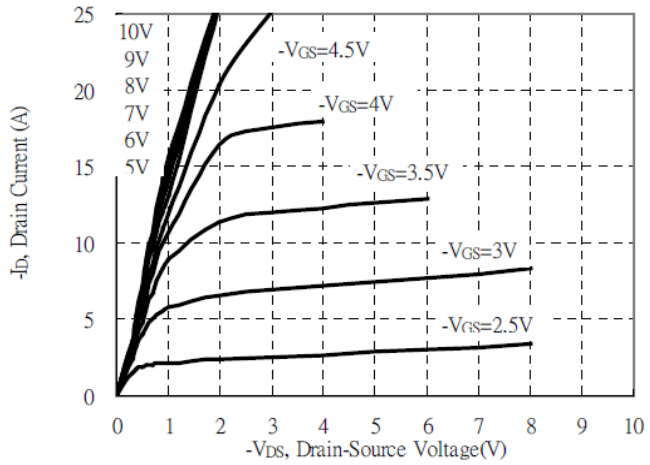
ELECTRICAL CHARACTERISTICS (T_J=25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Teat Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	-30	-	-	V	V_{GS}=0, I_D= -250uA
Gate-Threshold Voltage	$V_{GS(th)}$	-1	-	-2.5	V	V_{DS}=V_{GS}, I_D= -250uA
Forward Transfer conductance	g_{fs}	-	4.3	-	S	V_{DS}= -10V, I_D= -4.5A
Gate-Body Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}=±20V
Drain-Source Leakage Current	I_{DSS}	-	-	-1	μA	V_{DS}= -24V, V_{GS}=0, T_J=25℃
		-	-	-10		V_{DS}= -24V, V_{GS}=0, T_J=125℃
Drain-Source On-Resistance [4]	$R_{DS(ON)}$	-	41	50	mΩ	V_{GS}= -10V, I_D= -4.5A
		-	57	70		V_{GS}= -4.5V, I_D= -3.5A
Total Gate Charge	Q_g	-	15	-	nC	V_{DS}= -15V, V_{GS}= -10V, I_D= -4.5A
Gate-Source Charge	Q_{gs}	-	3	-		
Gate-Drain Charge	Q_{gd}	-	7	-		
Turn-on Delay Time	$T_{d(on)}$	-	8	-	nS	V_{DS}= -15V, V_{GS}= -10V, I_D= -1A, R_G=6Ω, R_L=15Ω
Rise Time	T_r	-	12	-		
Turn-off Delay Time	$T_{d(off)}$	-	30	-		
Fall Time	T_f	-	23	-		
Input Capacitance	C_{iss}	-	885	-	pF	V_{GS}=0,V_{DS}= -10V,f=1.0MHz
Output Capacitance	C_{oss}	-	86	-		
Reverse Transfer Capacitance	C_{rss}	-	81	-		
Source-Drain Diode						
Diode Forward Voltage [4]	V_{SD}	-	-	-1.2	V	I_S= -1A, V_{GS}=0
Reverse Recovery Time	T_{rr}	-	32	-	ns	I_S= -4.5A, V_{GS}=0 dI/dt=100A/μs
Reverse Recovery Charge	Q_{rr}	-	13.5	-	nC	

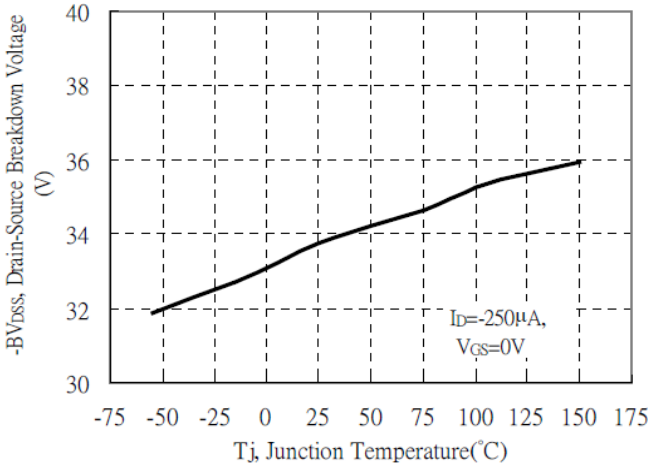
Notes:
1. Surface mounted on a 1 inch^2 FR-4 board with 2OZ copper.
2. When mounted on Min. copper pad
3. Pluse width limited by maximum junction temperature , pulse width ≦ 300us , duty cycle ≦ 2%
4. The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%

CHARACTERISTIC CURVES

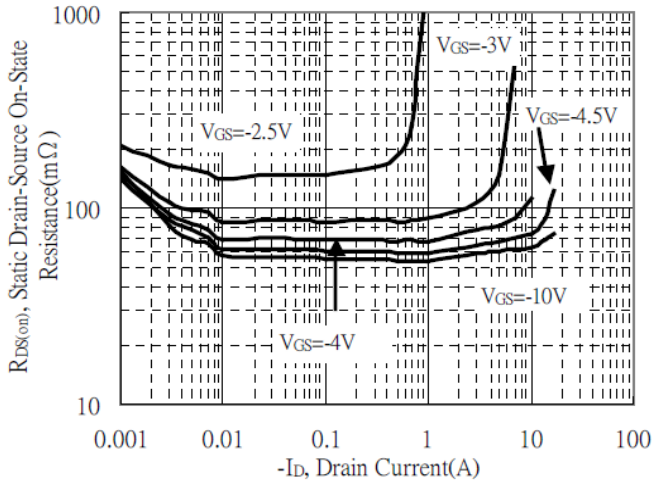
Typical Output Characteristics



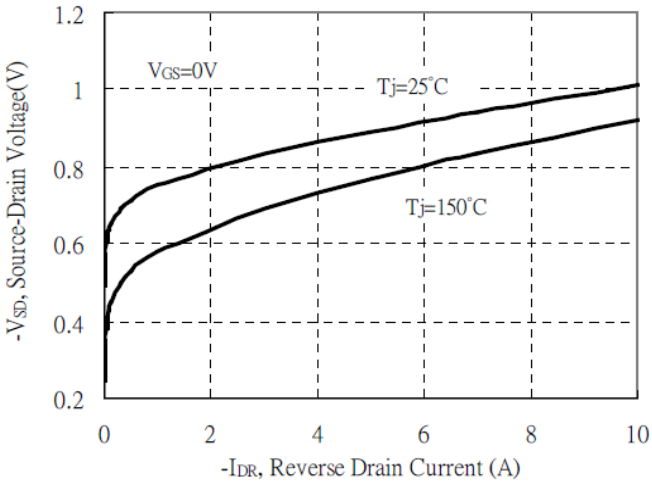
Brekdown Voltage vs Ambient Temperature



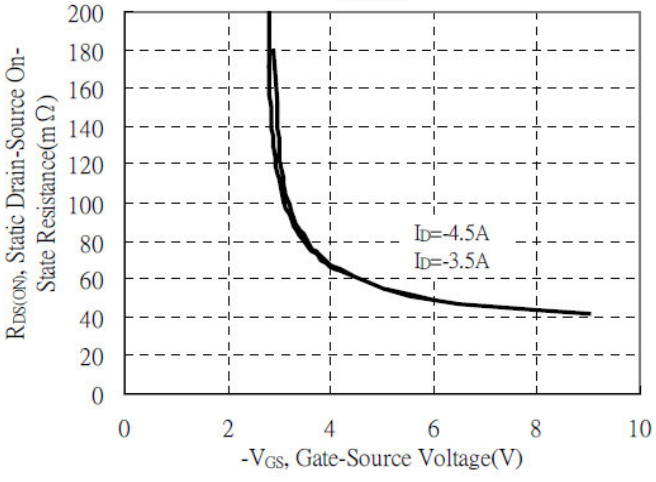
Static Drain-Source On-State resistance vs Drain Current



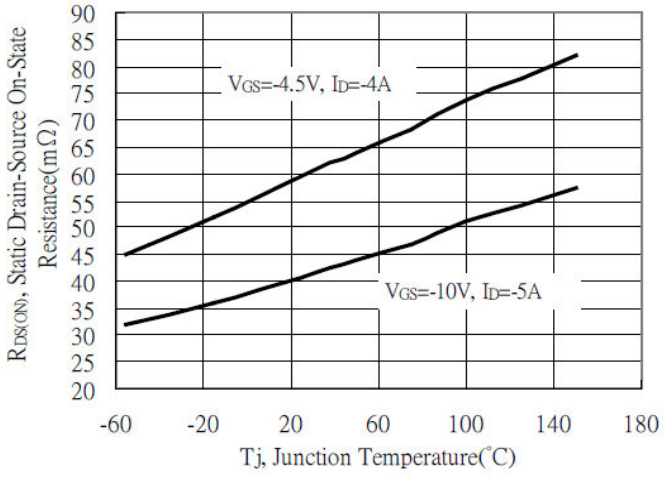
Reverse Drain Current vs Source-Drain Voltage



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

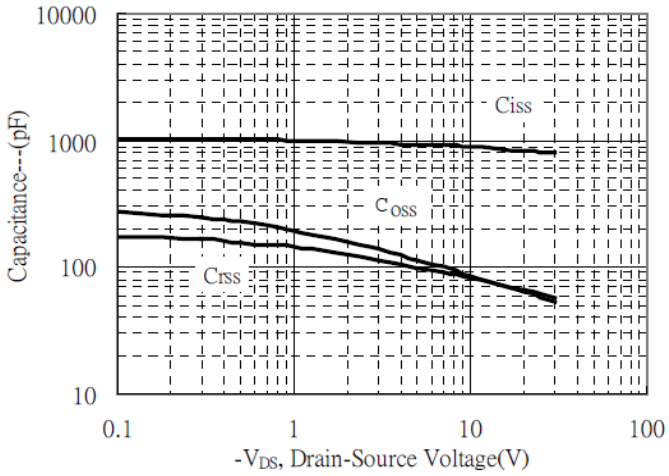


Drain-Source On-State Resistance vs Junction Tempearture

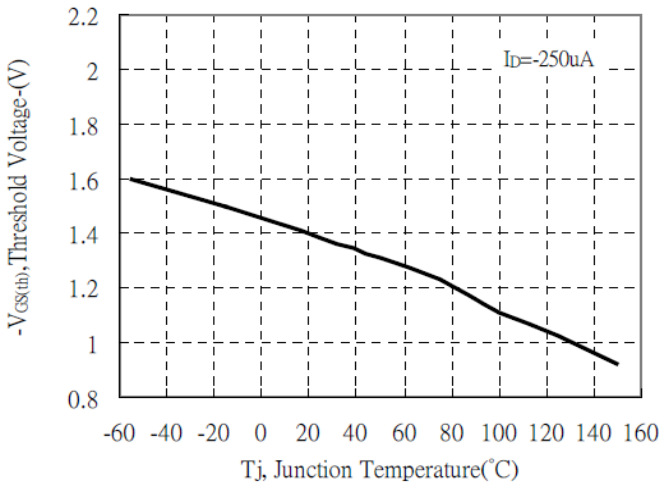


CHARACTERISTIC CURVES

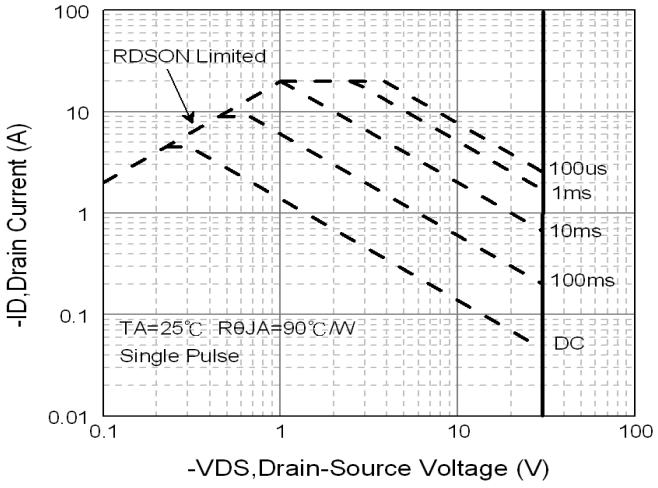
Capacitance vs Drain-to-Source Voltage



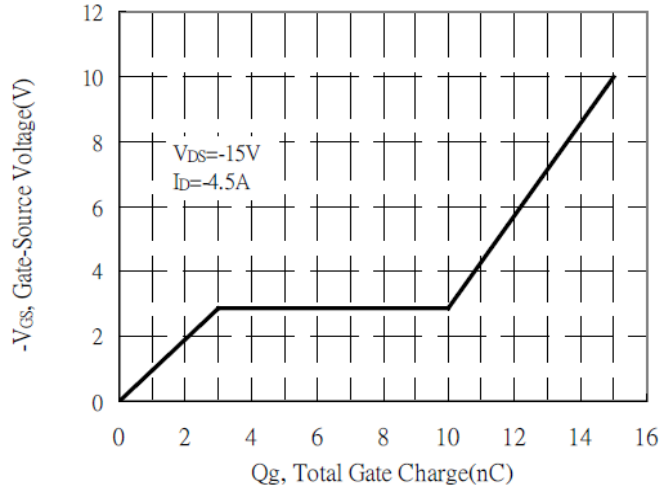
Threshold Voltage vs Junction Tempearture



Safe Operating Area



Gate Charge Characteristics



Transient Thermal Response Curves