Elektronische Bauelemente

SMG2359P

-1.7A , -60V , $R_{DS(ON)}$ 381 mΩ
P-Channel Enhancement MOSFET

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

DESCRIPTION

The miniature surface mount MOSFETs utilize high cell density process. Low $R_{DS(on)}$ assures minimal power loss and conserves energy, making this device ideal for use in power management circuitry.

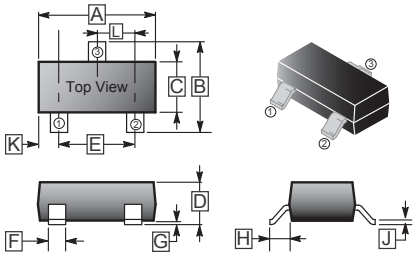
FEATURES

- Low $R_{DS(on)}$ provides higher efficiency and extends battery life.
- Fast Switch.
- Low Gate Charge.
- Miniature SC-59 Surface Mount Package Saves Board Space.

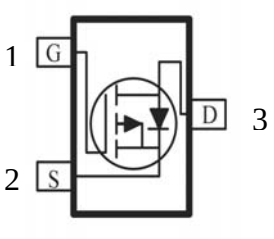
APPLICATION

Voltage control small signal switch, power management in portable and battery-powered products such as computer portable electronics and other battery power application.

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			



PACKAGE INFORMATION

Package	MPQ	Leader Size
SC-59	3K	7' inch

MAXIMUM RATINGS (T_A = 25°C unless otherwise specified)

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	-60	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1]	T_A=25°C	I_D	-1.7	A
	T_A=70°C		-1.4	
Pulsed Drain Current [2]		I_{DM}	±15	A
Continuous Source Current (Diode Conduction) [1]		I_S	-1.7	A
Power Dissipation [1]	T_A=25°C	P_D	1.3	W
	T_A=70°C		0.8	
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 ~ 150	°C
Thermal Resistance Data				
Maximum Junction to Ambient [1]	t≦5 sec	$R_{\theta JA}$	100	°C/W
	Steady-State		166	

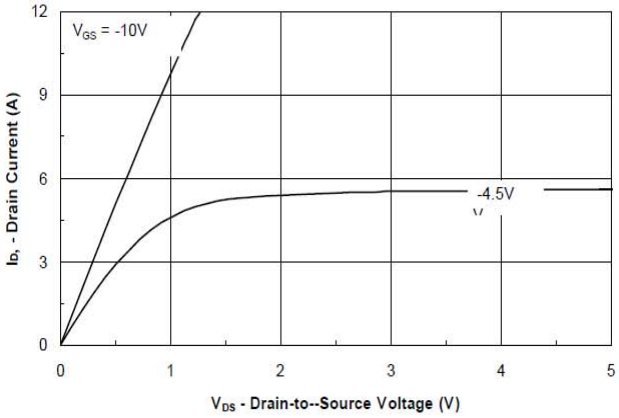
Notes:
1. Surface Mounted on 1" x 1" FR4 Board.
2. Pulse width limited by maximum junction temperature.

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

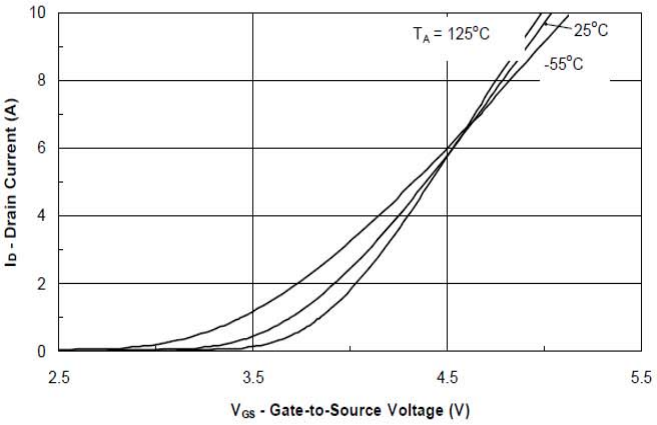
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static						
Zero Gate Voltage Drain Current	I_{DSS}	-	-	-1	μA	V_{DS} = -48V, V_{GS}=0
		-	-	-10		V_{DS} = -48V, V_{GS}=0, T_J=55°C
Gate-Body Leakage	I_{GSS}	-	-	±100	nA	V_{DS} =0, V_{GS}= ±20V
Gate-Threshold Voltage	$V_{GS(th)}$	-1	-2.1	-3.5	V	V_{DS} =V_{GS}, I_D = -250μA
On-State Drain Current [1]	$I_{D(ON)}$	-8	-	-	A	V_{DS} = -5V, V_{GS}= -10V
Drain-Source On-Resistance [1]	$R_{DS(ON)}$	-	300	381	mΩ	V_{GS}= -10V, I_D = -1.6A
		-	450	561		V_{GS}= -4.5V, I_D = -1.3A
Forward Transconductance [1]	g_{FS}	-	8	-	S	V_{DS}= -15V,,I_D = -1.6A
Diode Forward Voltage	V_{SD}	-	-	-1.2	V	I_S= -2.5A, V_{GS}=0
Dynamic [2]						
Total Gate Charge	Q_g	-	18	-	nC	I_D= -1.6A V_{DS}= -30V V_{GS}= -4.5V
Gate-Source Charge	Q_{gs}	-	5	-		
Gate-Drain Charge	Q_{gd}	-	2	-		
Turn-On Delay Time	$Td_{(ON)}$	-	8	-	nS	V_{DD}= -30V V_{GEN}= -10V R_G=6Ω I_D= -1A R_L=30Ω
Rise Time	T_r	-	10	-		
Turn-Off Delay Time	$Td_{(OFF)}$	-	35	-		
Fall Time	T_f	-	12	-		

Notes:
1. Pulse test : PW ≦ 300 us duty cycle ≦ 2%.
2. Guaranteed by design, not subject to production testing.

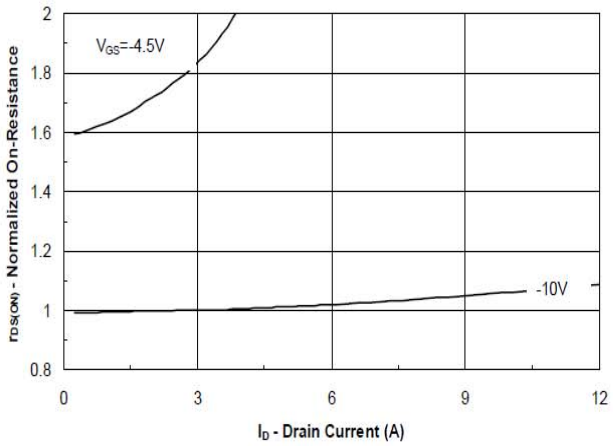
CHARACTERISTIC CURVE



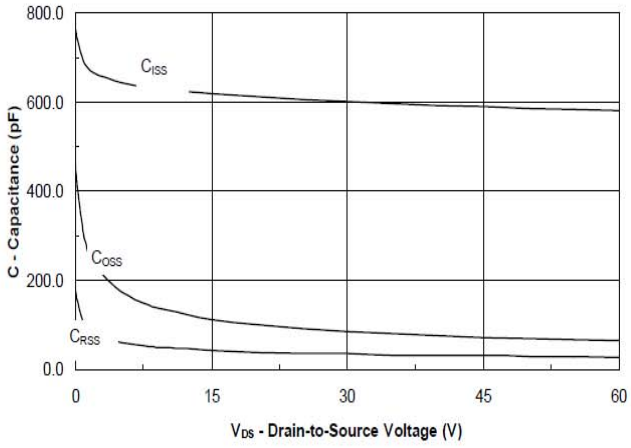
Output Characteristics



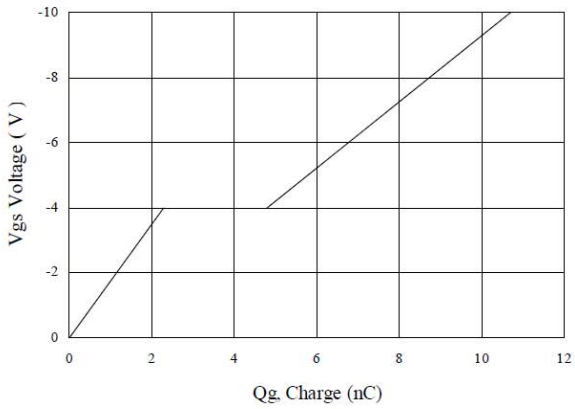
Transfer Characteristics



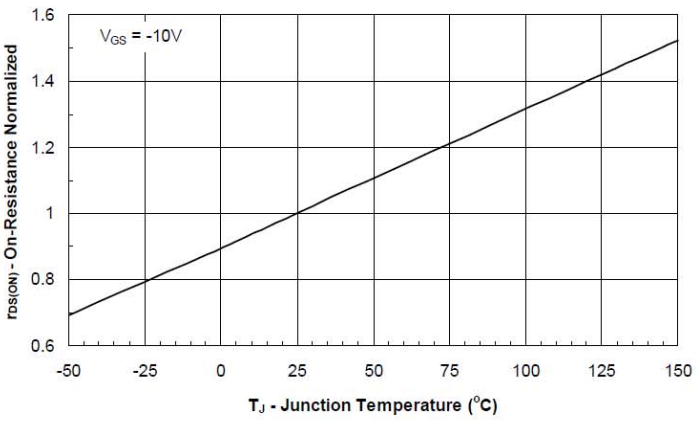
On-Resistance vs. Drain Current



Capacitance

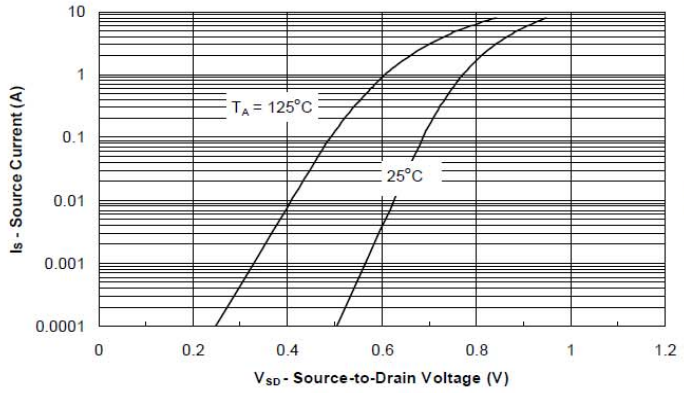


Gate Charge

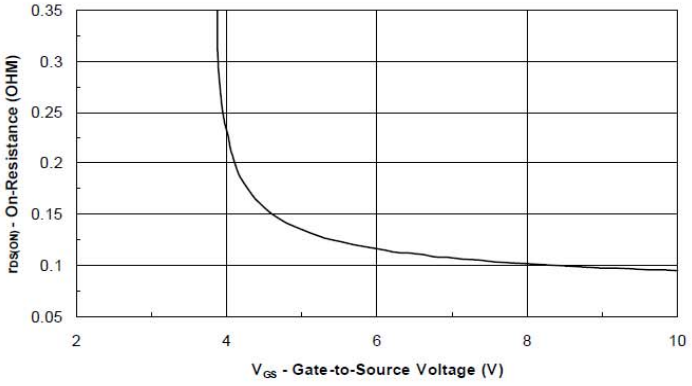


On-Resistance vs. Junction Temperature

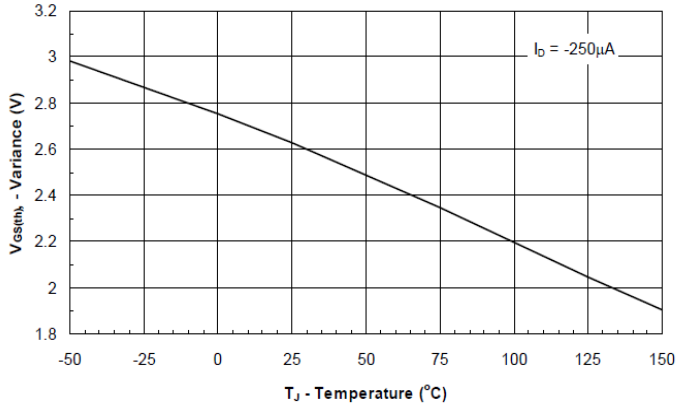
CHARACTERISTIC CURVE



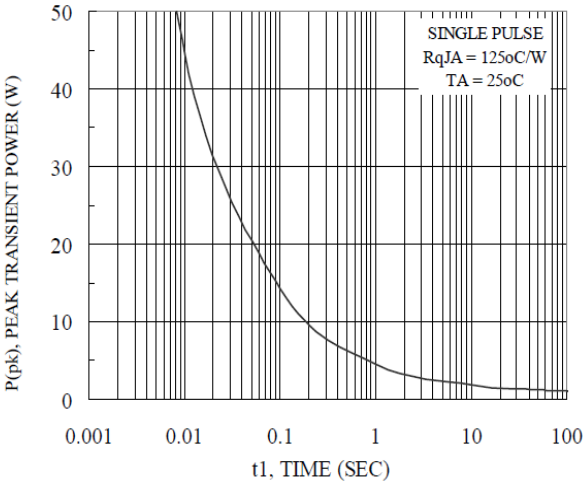
Source-Drain Diode Forward Voltage



On-Resistance vs Gate-to-Source Voltage

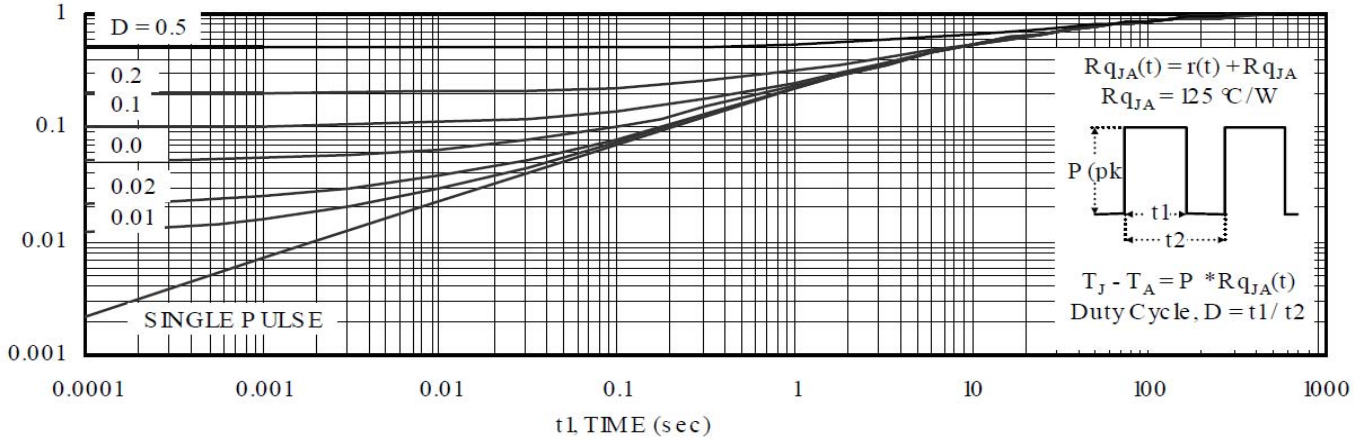


Threshold Voltage



Single Pulse Power

Normalized Thermal Transient Junction to Ambient



Normailized Thermal Transient Impedance, Junction-to-Ambitent