Elektronische Bauelemente

SMG2340NE

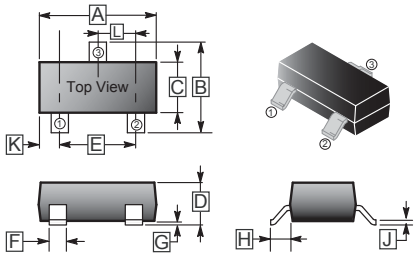
5.2 A, 40 V, $R_{DS(ON)}$ 43 mΩ
N-Channel Enhancement MOSFET

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

SC-59

DESCRIPTION

These miniature surface mount MOSFETs utilize a high cell density trench process to provide low $R_{DS(on)}$ and to ensure minimal power loss and heat dissipation. Typical applications are DC-DC converters and power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.



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			

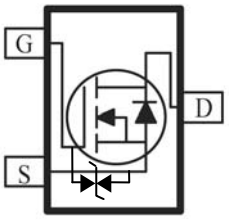
FEATURES

- Low $R_{DS(on)}$ provides higher efficiency and extends battery life.
- Low thermal impedance copper leadframe SC-59 saves board space.
- Fast switching speed.
- High performance trench technology.

PACKAGE INFORMATION

Package	MPQ	LeaderSize
SC-59	3K	7' inch

ESD Protection Diode 2KV



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

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	40	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1]	T_A=25°C	I_D	5.2	A
	T_A=70°C		4.1	
Pulsed Drain Current [2]		I_{DM}	30	A
Continuous Source Current (Diode Conduction) [1]		I_S	1.6	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						
Gate-Threshold Voltage	$V_{GS(th)}$	1	-	-	V	V_{DS} = V_{GS}, I_D = 250μA
Gate-Body Leakage	I_{GSS}	-	-	±10	μA	V_{DS} = 0V, V_{GS}= 20V
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	V_{DS} = 32V, V_{GS}= 0V
		-	-	25		V_{DS} = 32V, V_{GS}= 0V, T_J=55°C
On-State Drain Current [1]	$I_{D(ON)}$	20	-	-	A	V_{DS} = 5V, V_{GS}= 10V
Drain-Source On-Resistance [1]	$R_{DS(ON)}$	-	-	43	mΩ	V_{GS}= 10V, I_D = 5.2A
		-	-	50		V_{GS}= 4.5V, I_D = 4.2A
Forward Transconductance [1]	g_{FS}	-	40	-	S	V_{DS}= 15V,, I_D = 5.2A
Diode Forward Voltage	V_{SD}	-	0.7	-	V	I_S= 2.3A, V_{GS}= 0V
Dynamic [2]						
Total Gate Charge	Q_g	-	4.0	-	nC	I_D= 5.2A V_{DS}= 15V V_{GS}= 4.5V
Gate-Source Charge	Q_{gs}	-	1.1	-		
Gate-Drain Charge	Q_{gd}	-	1.4	-		
Turn-On Delay Time	$Td_{(ON)}$	-	16	-	nS	I_D= 1A, V_{DD}= 25V V_{GEN}= 10V R_L= 25Ω
Rise Time	T_r	-	5	-		
Turn-Off Delay Time	$Td_{(OFF)}$	-	23	-		
Fall Time	T_f	-	3	-		

Notes

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