Elektronische Bauelemente

SMG2330N

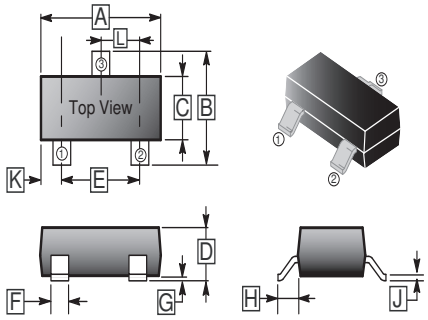
5.2A, 30V, $R_{DS(ON)}$ 32mΩ
N-Channel Enhancement MOSFET

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

DESCRIPTION

These 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. Typical applications are PWMDC-DC converters, power management in portable and battery-powered products such as computers, printers, battery charger, telecommunication power system, and telephones power system.

SC-59



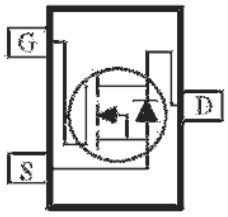
REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.10	G	0.10 REF.	
B	2.25	3.00	H	0.40 REF.	
C	1.30	1.70	J	0.10	0.20
D	1.00	1.40	K	0.45	0.55
E	1.70	2.30	L	0.85	1.15
F	0.35	0.50			

FEATURES

- Low $R_{DS(on)}$ Provides Higher Efficiency and Extends Battery Life
- Miniature SOT-23 Surface Mount Package Saves Board Space
- High power and current handling capability
- Low side high current DC-DC Converter applications

PACKAGE INFORMATION

Package	MPQ	Leader Size
SC-59	3K	7 inch



ABSOLUTE MAXIMUM RATINGS (T_A=25℃ unless otherwise specified)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	30	V
Continuous Gate-Source Voltage		V_{GSS}	±20	V
Continuous Drain Current[1]	T_A=25℃	I_D	5.2	A
	T_A=70℃		4.1	
Pulsed Drain Currentb[2]		I_{DM}	30	A
Continuous Source Current (Diode Conduction)[1]		I_S	1.6	A
Power Dissipationa[1]	T_A=25℃	P_D	1.3	W
	T_A=70℃		0.8	
Junction and Storage Temperature Range		T_J, T_{stg}	-55~150	℃
Thermal Resistance Rating				
Maximum Junction to Ambient[1]	t≦5 sec	$R_{\theta JA}$	100	℃ / W
	Steady-State		166	℃ / W

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

ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Teat Conditions
Static						
On-State Drain Current[1]	$I_{D(on)}$	20	-	-	A	V_{DS}=5V, V_{GS}=10V
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	V_{DS}=24V , V_{GS}=0
		-	-	25		V_{DS}= 24V, V_{GS}=0, T_J=55℃
Gate-Body Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}=20V, V_{DS}=0
Gate Threshold Voltage	$V_{GS(th)}$	1	-	-	V	V_{DS}=V_{GS}, I_D=250μA
Drain-Source On Resistance[1]	$R_{DS(ON)}$	-	-	32	mΩ	V_{GS}=10V, I_D=5.2A
		-	-	64		V_{GS}=4.5V, I_D=3.7A
Forward Transconductance[1]	g_{FS}	-	40	-	S	V_{DS}=15V,,I_D=5.2A
Diode Forward Voltage	V_{SD}	-	0.7	-	V	I_S=2.3 A, V_{GS}=0
Dynamic [2]						
Total Gate Charge	Q_g	-	4.0	-	nC	V_{DS}=15V, V_{GS}=4.5V, I_D=5.2A
Gate-Source Charge	Q_{gs}	-	1.1	-		
Gate-Drain Charge	Q_{gd}	-	1.4	-		
Turn-On Delay Time	$Td_{(ON)}$	-	16	-	nS	V_{DD}=25V, R_L=25Ω , I_D=1A, V_{GEN}=10V
Turn-Off Delay Time	$Td_{(OFF)}$	-	23	-		
Rise Time	T_r	-	5	-		
Fall-Time	T_f	-	3	-		

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