Elektronische Bauelemente

SUM1960NE

0.32A , 60V , $R_{DS(ON)}$ 2 Ω

N-Channel Enhancement Mode MOSFET

RoHS Compliant Product

A suffix of "-C" specifies halogen and lead-free

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.

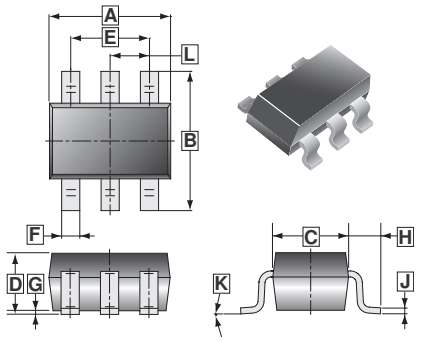
FEATURES

- Low $R_{DS(on)}$ provides higher efficiency and extends battery life
- Low thermal impedance copper leadframe SOT-363 saves board space
- Fast switching speed
- High performance trench technology

APPLICATION

DC-DC converters and power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.

SOT-363

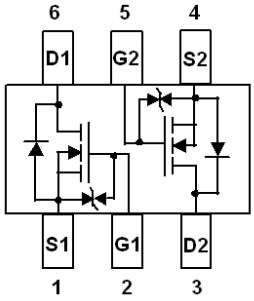


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.80	2.20	G	0.100 REF.	
B	1.80	2.45	H	0.525 REF.	
C	1.15	1.35	J	0.08	0.25
D	0.80	1.10	K	8°	
E	1.10	1.50	L	0.650 TYP.	
F	0.10	0.35			

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-363	3K	7 inch

ESD Protection Diode 2KV



ABSOLUTE MAXIMUM RATINGS (T_A=25℃ 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℃	I_D	0.32	A
	T_A=70℃		0.26	
Pulsed Drain Current [2]		I_{DM}	0.7	A
Continuous Source Current (Diode Conduction) [1]		I_S	0.25	A
Power Dissipation [1]	T_A=25℃	P_D	0.3	W
	T_A=70℃		0.21	
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	℃
Thermal Resistance Rating				
Maximum Junction to Ambient [1]	t ≦ 5 sec	$R_{\theta JA}$	415	℃ / W
	Steady State		460	

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	Teat Conditions
Static						
Gate-Threshold Voltage	$V_{GS(th)}$	1	-	-	V	V_{DS}=V_{GS}, I_D=250uA
Gate-Body Leakage Current	I_{GSS}	-	-	±10	uA	V_{DS}=0, V_{GS}=±20V
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	uA	V_{DS}=48V, V_{GS}=0
		-	-	50		V_{DS}=48V, V_{GS}=0, T_J=55°C
On-State Drain Current [1]	$I_{D(on)}$	0.3	-	-	A	V_{DS} =5V, V_{GS}=10V
Drain-Source On-Resistance [1]	$R_{DS(ON)}$	-	-	2	Ω	V_{GS}=10V, I_D=0.3A
		-	-	3		V_{GS}=4.5V, I_D=0.2A
Forward Transconductance [1]	g_{fs}	-	8	-	S	V_{DS}=4.5V, I_D=0.3A
Diode Forward Voltage [1]	V_{SD}	-	1.1	-	V	I_S=0.2A, V_{GS}=0
Dynamic [2]						
Total Gate Charge	Q_g	-	0.4	-	nC	V_{DS}=10V, V_{GS}=5V, I_D=0.3A
Gate-Source Charge	Q_{gs}	-	0.1	-		
Gate-Drain Charge	Q_{gd}	-	0.1	-		
Turn-on Delay Time	$T_{d(on)}$	-	10	-	nS	V_{DD}=10V, V_{GEN}=10V, R_L=30Ω, I_D=0.3A
Rise Time	T_r	-	6	-		
Turn-off Delay Time	$T_{d(off)}$	-	20	-		
Fall Time	T_f	-	3	-		

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