

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.

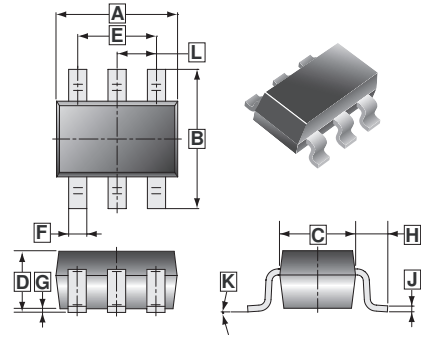
FEATURES

- 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



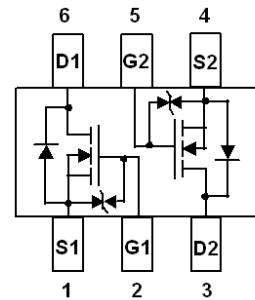
REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.80	2.20	G	0.100	REF.
B	1.80	2.45	H	0.525	REF.
C	1.15	1.35	J	0.08	0.25
D	0.80	1.10	K	8°	
E	1.10	1.50	L	0.650 TYP.	
F	0.10	0.35			

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-363	3K	7 inch



ESD
Protection Diode
2KV



ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ 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	I_D	$T_A=25^\circ\text{C}$	0.32
		$T_A=70^\circ\text{C}$	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	P_D	$T_A=25^\circ\text{C}$	0.3
		$T_A=70^\circ\text{C}$	0.21
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~150	$^\circ\text{C}$
Thermal Resistance Rating			
Maximum Junction to Ambient ¹	$R_{\theta JA}$	$t \leq 5 \text{ sec}$	415
		Steady State	460

Notes:

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

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise specified)

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

Notes:

1. Pulse test: $PW \leq 300\mu\text{s}$ duty cycle $\leq 2\%$.
2. Guaranteed by design, not subject to production testing.