

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

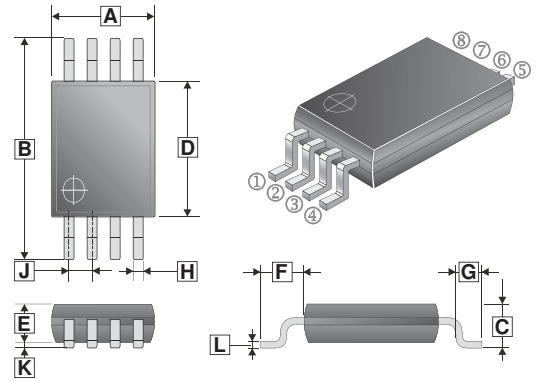
DESCRIPTION

These miniature surface mount MOSFETs utilize a High Cell Density trench process to provide Low $R_{DS(on)}$ and 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, printer, PCMCIA cards, cellular and cordless telephones.

FEATURES

- Low $R_{DS(on)}$ provides higher efficiency and extends battery life.
- Low thermal impedance copper leadframe TSSOP-8 saves board space.
- Fast switching speed.
- High performance trench technology.

TSSOP-8

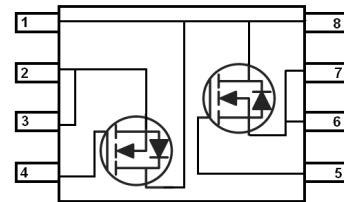


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.80	3.10	G	0.45	0.75
B	6.20	6.60	H	0.19	0.30
C	1.00	1.20	J	0.65	REF.
D	4.30	4.50	K	0.05	0.15
E	-	1.15	L	0.127	REF.
F	0.9	1.10			

PACKAGE INFORMATION

Package	MPQ	Leader Size
TSSOP-8L	3K	13' inch

Top View



ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 8	V
Continuous Drain Current ¹	I_D	$T_A=25^\circ\text{C}$	6.8
		$T_A=70^\circ\text{C}$	5.4
Pulsed Drain Current ²	I_{DM}	30	A
Continuous Source Current (Diode Conduction) ¹	I_S	1.5	A
Power Dissipation ¹	P_D	$T_A=25^\circ\text{C}$	1.2
		$T_A=70^\circ\text{C}$	0.8
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 ~ 150	$^\circ\text{C}$
Thermal Resistance Rating			
Maximum Junction to Ambient ¹	$R_{\theta JA}$	$t \leq 10$ sec	83
		Steady State	120
°C / W			

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	Test Condition
Static						
Gate-Threshold Voltage	$V_{GS(th)}$	0.4	-	-	V	$V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$
Gate-Body Leakage	I_{GSS}	-	-	± 100	nA	$V_{DS}=0$, $V_{GS}=\pm 12\text{V}$
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	$V_{DS}=16\text{V}$, $V_{GS}=0$
		-	-	10		$V_{DS}=16\text{V}$, $V_{GS}=0$, $T_J=55^\circ\text{C}$
On-State Drain Current ¹	$I_{D(on)}$	25	-	-	A	$V_{DS}=5\text{V}$, $V_{GS}=4.5\text{V}$
Drain-Source On-Resistance ¹	$R_{DS(ON)}$	-	-	22	m Ω	$V_{GS}=4.5\text{V}$, $I_D=1\text{A}$
		-	-	30		$V_{GS}=2.5\text{V}$, $I_D=1\text{A}$
		-	-	46		$V_{GS}=1.8\text{V}$, $I_D=1\text{A}$
Forward Transconductance ¹	g_{fs}	-	25	-	S	$V_{DS}=10\text{V}$, $I_D=1\text{A}$
Diode Forward Voltage	V_{SD}	-	0.7	-	V	$I_S=1\text{A}$, $V_{GS}=0$
Dynamic ²						
Total Gate Charge	Q_g	-	6.2	-	nC	$V_{DS}=10\text{V}$, $V_{GS}=4.5\text{V}$, $I_D=1\text{A}$
Gate-Source Charge	Q_{gs}	-	1	-		
Gate-Drain Charge	Q_{gd}	-	1.9	-		
Turn-on Delay Time	$T_{d(on)}$	-	12	-	nS	$V_{DD}=10\text{V}$, $V_{GS}=4.5\text{V}$, $R_{GEN}=10\Omega$, $I_D=1\text{A}$
Rise Time	T_r	-	15	-		
Turn-off Delay Time	$T_{d(off)}$	-	56	-		
Fall Time	T_f	-	17	-		

Notes:

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