

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

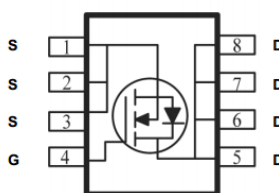
- Low $R_{DS(on)}$ provides higher efficiency and extends battery life.
- Low thermal impedance copper leadframe SOP-8PP saves board space.
- Fast switching speed.
- High performance trench technology.

APPLICATION

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

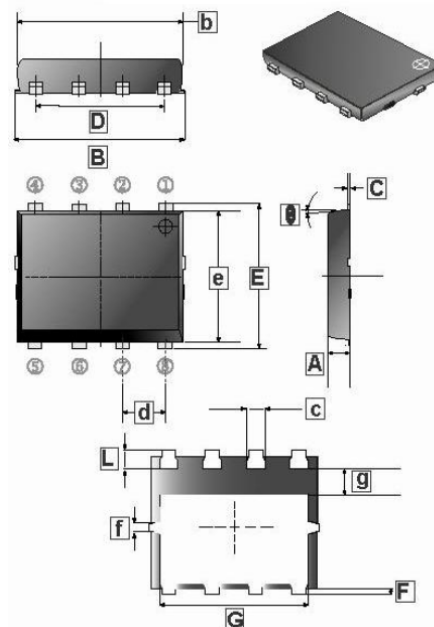
PACKAGE INFORMATION

Package	MPQ	Leader Size
SOP-8PP	3K	13' inch



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	0.85	1.00	θ	0°	10°
B	5.3 BSC		b	5.2 BCS	
C	0.15	0.25	c	0.30	0.50
D	3.8 BCS.		d	1.27BSC	
E	6.05 BCS.		e	5.55 BCS.	
F	0.03	0.30	f	0.10	0.40
G	4.35 BCS.		g	1.2 BCS.	
L	0.40	0.70			

SOP-8PP



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	20	V
Continuous Drain Current ¹	I_D	$T_A=25^\circ\text{C}$	22
		$T_A=70^\circ\text{C}$	18
Pulsed Drain Current ²	I_{DM}	50	A
Continuous Source Current (Diode Conduction) ¹	I_S	2.3	A
Power Dissipation ¹	P_D	$T_A=25^\circ\text{C}$	5
		$T_A=70^\circ\text{C}$	2.2
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 ~ 150	$^\circ\text{C}$
Thermal Resistance Rating			
Maximum Junction to Ambient ¹	$t \leq 10$ sec	$R_{\theta JA}$	25
	Steady State		65

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 Conditions
Static						
Gate-Threshold Voltage	$V_{GS(th)}$	1	-	-	V	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$
Gate-Body Leakage	I_{GSS}	-	-	± 100	nA	$V_{DS} = 0, V_{GS} = 20\text{V}$
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	$V_{DS} = 24\text{V}, V_{GS} = 0$
		-	-	5		$V_{DS} = 24\text{V}, V_{GS} = 0, T_J = 55^\circ\text{C}$
On-State Drain Current ¹	$I_{D(ON)}$	40	-	-	A	$V_{DS} = 5\text{V}, V_{GS} = 10\text{V}$
Drain-Source On-Resistance ¹	$R_{DS(ON)}$	-	-	7.5	m Ω	$V_{GS} = 10\text{V}, I_D = 2\text{A}$
		-	-	11.5		$V_{GS} = 4.5\text{V}, I_D = 2\text{A}$
Forward Transconductance ¹	g_{FS}	-	40	-	S	$V_{DS} = 15\text{V}, I_D = 2\text{A}$
Diode Forward Voltage	V_{SD}	-	0.7	-	V	$I_S = 2\text{A}, V_{GS} = 0$
Dynamic ²						
Total Gate Charge	Q_g	-	16	-	nC	$I_D = 10\text{A}$ $V_{DS} = 15\text{V}$ $V_{GS} = 4.5\text{V}$
Gate-Source Charge	Q_{gs}	-	5	-		
Gate-Drain Charge	Q_{gd}	-	6	-		
Turn-On Delay Time	$T_{d(ON)}$	-	5	-	nS	$I_D = 1\text{A},$ $V_{DD} = 15\text{V}$ $V_{GEN} = 10\text{V}$ $R_L = 6\Omega$
Rise Time	T_r	-	4	-		
Turn-Off Delay Time	$T_{d(OFF)}$	-	23	-		
Fall Time	T_f	-	9	-		

Notes

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