

MSQ27N30

Dual N-Channel 30-V (D-S) MOSFET

Features

- Low RDS(on) provides higher efficiency and Extends battery life
- Low thermal impedance copper lead frame
- SOIC-8PP saves board space
- Fast switching speed
- High performance trench technology
- RoHS compliant package

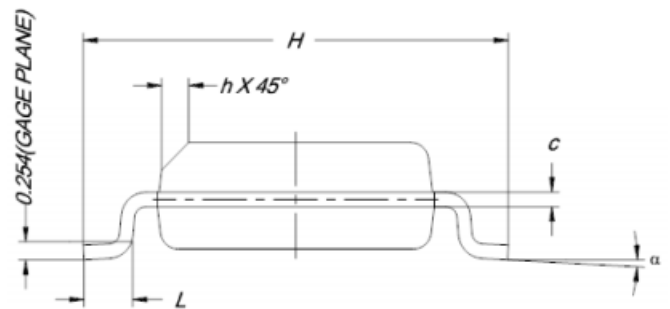
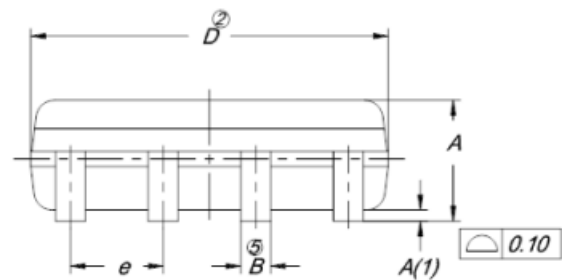
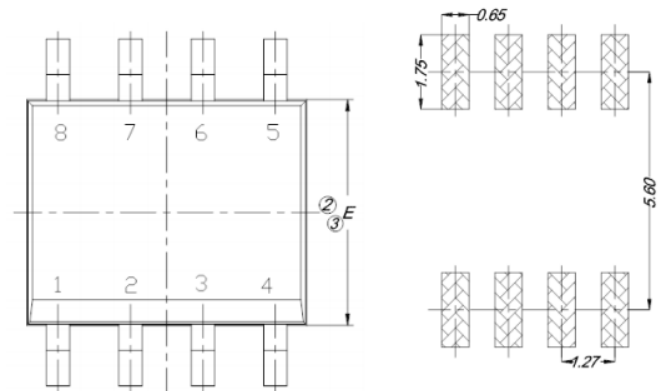
Application

- DC-DC converters
- Power management in portable
- Battery-powered products such as computers, Printers PCMCIA cards, cellular and cordless telephones.

Package type : SOIC-8PP

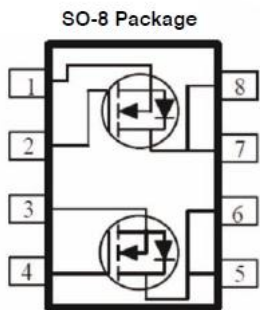
Packing & Order Information

3,000/Reel



**RoHS
COMPLIANT**

Graphic symbol



DIM.	MILLIMETERS		
	MIN.	NOM.	MAX.
A	1.35	1.55	1.75
A(1)	0.10	0.18	0.25
B	0.38	0.45	0.51
C	0.19	0.22	0.25
D	4.80	4.90	5.00
E	3.80	3.90	4.00
e	1.27 BSC		
H	5.80	6.00	6.20
L	0.50	0.72	0.93
α	0°	4°	8°
h	0.25	0.38	0.50

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MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	20	V
I_D	Drain Current -Continuous ($T_A=25^\circ\text{C}$)	27	A
	Drain Current -Continuous ($T_A=70^\circ\text{C}$)	22	A
I_{DM}	Drain Current Pulsed	50	A
I_S	Continuous Source Current (Diode Conduction) ^a	2.3	A
P_D	Power Dissipation ^a ($T_A=25^\circ\text{C}$)	5	W
	Power Dissipation ^a ($T_A=70^\circ\text{C}$)	2.2	
T_J, T_{STG}	Operating and Storage Temperature Range	-55 to +150	$^\circ\text{C}$

Thermal Resistance Characteristics

Symbol	Parameter	Value	Units
$R_{\theta JA}$	Maximum Junction-to-Ambient ^a ($t \leq 10$ sec)	25	$^\circ\text{C/W}$
	Maximum Junction-to-Ambient ^a (Steady State)	65	

Notes

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

Static

Symbol	Test Conditions	Min	Typ.	Max.	Units
$V_{GS(th)}$	$V_{GS} = V_{DS}$, $I_D = 250\mu\text{A}$	1	--	--	V
$r_{DS(on)}$	$V_{GS} = 10$ V, $I_D = 10$ A	--	--	4.6	m Ω
	$V_{GS} = 4.5$ V, $I_D = 8$ A			5.5	
I_{DSS}	$V_{DS} = 24$ V, $V_{GS} = 0$ V	--	--	1	μA
	$V_{DS} = 24$ V, $V_{GS} = 0$ V, $T_J = 55^\circ\text{C}$			5	
I_{GSS}	$V_{GS} = 20$ V, $V_{DS} = 0$ V	--	--	100	nA
$I_{D(on)}$	$V_{GS} = 10$ V, $V_{DS} = 5$ V	40	--	--	A
V_{SD}	$V_{GS} = 0$ V, $I_S = 2.3$ A	--	0.7	--	V
G_{fs}	$V_{DS} = 15$ V, $I_D = 10$ A	--	40	--	S

Dynamic Characteristics

Symbol	Test Conditions	Min	Typ.	Max.	Units
$t_{d(on)}$	$V_{DD} = 15$ V, $I_D = 1$ A, $R_L = 6$ Ω $V_{GEN} = 10$ V	--	15	--	ns
t_r		--	10	--	ns
$t_{d(off)}$		--	54	--	ns
t_f		--	26	--	ns

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Dynamic Characteristics

Symbol	Test Conditions	Min	Typ.	Max.	Units
Q_g	$V_{DS} = 15\text{ V}, I_D = 10\text{ A},$ $V_{GS} = 4.5\text{ V}$	--	15	--	nC
Q_{gs}		--	3	--	nC
Q_{gd}		--	5	--	nC

Notes

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

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Disclaimer

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