

MSS34N40

N-Channel 40-V (D-S) MOSFET

Features

- Low RDS (on) trench technology
- Low thermal impedance
- Fast switching speed
- RoHS compliant package

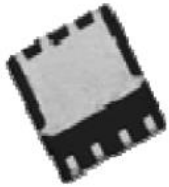
Applications

- PoE Power Sourcing Equipment
- PoE Powered Devices
- Telecom DC/DC converters
- White LED boost converters

Package type : SOIC-8PP

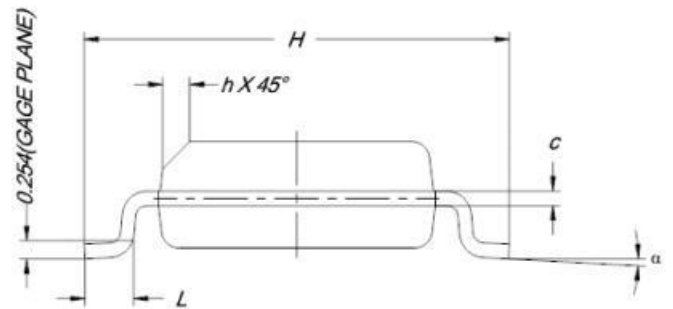
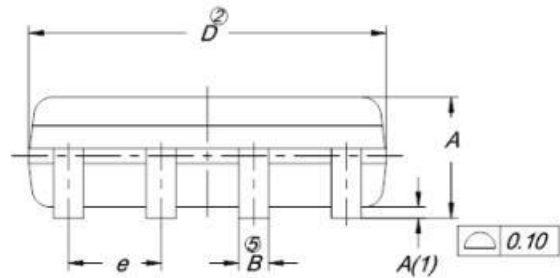
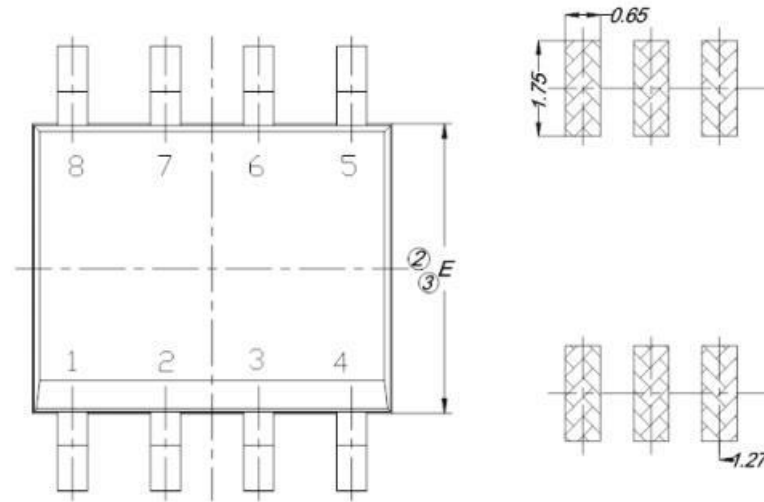
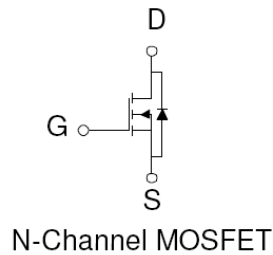
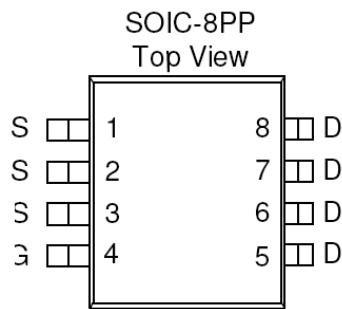
Packing & Order Information

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	40	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Drain Current -Continuous ^a ($T_A=25^{\circ}\text{C}$)	± 34	A
	Drain Current -Continuous ^a ($T_A=70^{\circ}\text{C}$)	± 27	A
I_{DM}	Pulsed Drain Current ^b	5.0	A
P_D	Total Power Dissipation ^a ($T_A=25^{\circ}\text{C}$)	2.3	W
	Total Power Dissipation ^a ($T_A=70^{\circ}\text{C}$)	3.2	W
I_S	Continuous Source Current (Diode Conduction) ^a	± 50	A
T_{STG}	Operating Junction and Storage Temperature Range	-55 to +150	$^{\circ}\text{C}$

Thermal Data

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

Note:

1. Surface Mounted on 1"x1" FR4 Board.
2. Pulse width limited by maximum junction temperature.

Static

Symbol	Test Conditions	Min	Typ.	Max.	Units
V_{SD}	$V_{GS} = 0 \text{ V}, I_S = 2.1 \text{ A}$	--	1.1	--	V
$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	1	--	3	V
I_{DSS}	$V_{DS} = 32 \text{ V}, V_{GS} = 0 \text{ V}$	--	--	1	μA
	$V_{DS} = 32 \text{ V}, V_{GS} = 0 \text{ V}, T_J = 55^{\circ}\text{C}$	--	--	25	
I_{GSS}	$V_{GS} = 20 \text{ V}, V_{DS} = 0 \text{ V}$	--	--	± 100	nA
$I_{D(ON)}$	$V_{DS} = 5 \text{ V}, V_{GS} = 10 \text{ V}$	34	--	--	A
$R_{DS(ON)}$	$V_{GS} = 10 \text{ V}, I_D = 7.5 \text{ A}$	--	--	3	m Ω
	$V_{GS} = 4.5 \text{ V}, I_D = 7 \text{ A}$	--	--	5	
G_{FS}	$V_{DS} = 15 \text{ V}, I_D = 7.5 \text{ A}$		22		S

Dynamic Characteristics

Symbol	Parameter	Test Conditions	Min	Typ.	Max.	Units
Q_g	Total Gate Charge	$V_{DS} = -6 \text{ V}, I_D = -2.8 \text{ A},$ $V_{GS} = -4.5 \text{ V}$	--	50	--	nC
Q_{gs}	Gate-Source Charge		--	20	--	nC
Q_{gd}	Gate-Drain Charge		--	20	--	nC

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Dynamic Characteristics						
Symbol	Parameter	Test Conditions	Min	Typ.	Max.	Units
$t_{d(on)}$	Turn-On Delay Time	$V_{DD} = 25\text{ V}$, $I_D = 34\text{ A}$, $R_L = 25\ \Omega$, $V_{GEN} = 10\text{ V}$	--	40	--	ns
t_r	Rise Time		--	60	--	ns
$t_{d(off)}$	Turn-Off Delay Time		--	150	--	ns
t_f	Fall Time		--	90	--	ns

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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