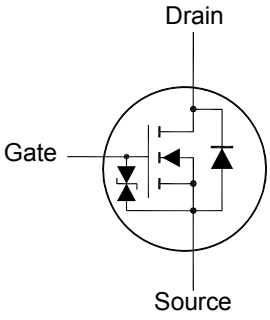
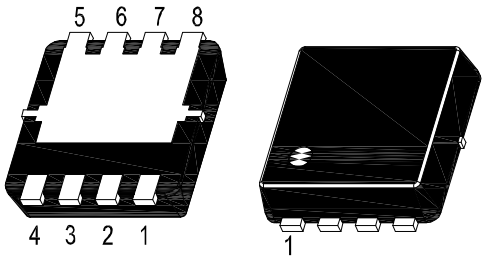
SFTN3908MP

N-Channel Enhancement Mode MOSFET





1. Source 2. Source 3. Source 4. Gate
5. Drain 6. Drain 7. Drain 8. Drain
DFN3030 Plastic Package

Absolute Maximum Ratings

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	30	V
Drain-Gate Voltage		V_{GS}	± 20	V
Drain Current - Continuous	T_C = 25℃ T_C = 100℃	I_D	48 30	A
Power Dissipation	T_C = 25℃	P_D	35	W
Drain Current - Pulsed [1]		I_{DM}	192	A
Single Pulse Avalanche Current [2]		I_{AS}	30	A
Single Pulse Avalanche Energy [2]		E_{AS}	45	mJ
Operating Junction and Storage Temperature Range		T_j, T_{stg}	- 55 to + 150	℃

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	62	℃/W
Thermal Resistance Junction to Case	$R_{\theta JC}$	3.6	℃/W

[1] Repetitive Rating : Pulsed width limited by maximum junction temperature.

[2] V_{DD} = 25 V, V_{GS} = 10 V, L= 0.1mH, I_{AS} = 30 A, R_G = 25 Ω, Starting T_J = 25℃.

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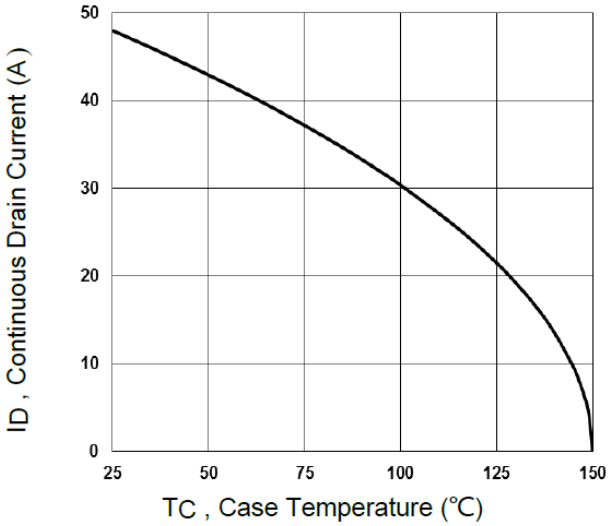
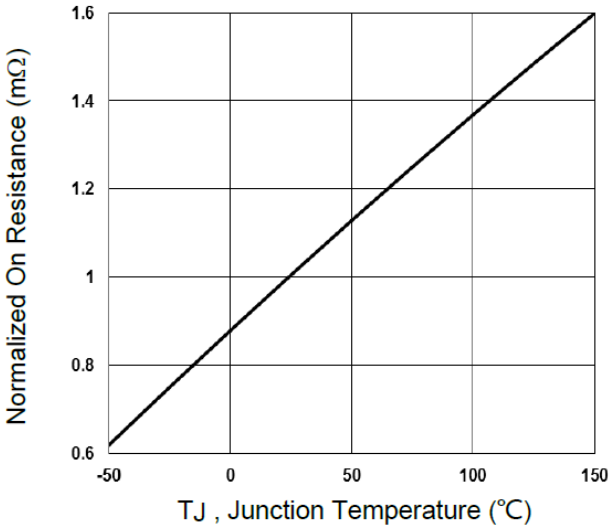
Characteristics at T_j = 25℃ unless otherwise specified

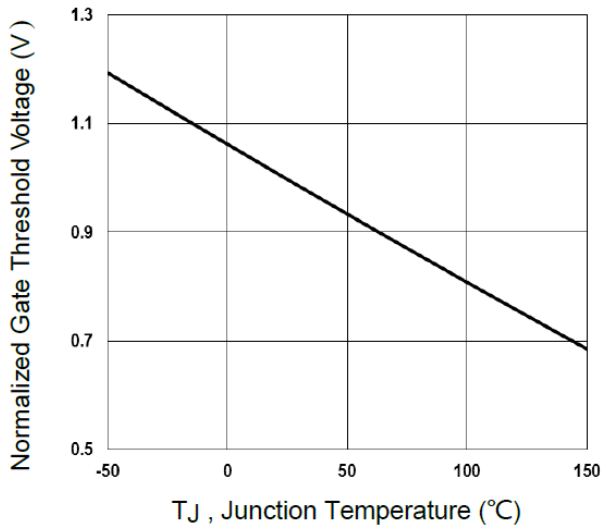
Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage at I_D = 250 μA	BV_{DSS}	30	-	-	V
Gate-Source Threshold Voltage at V_{DS} = V_{GS}, I_D = 250 μA	V_{GSth}	1.2	-	2.5	V
Drain-Source Leakage Current at V_{DS} = 30 V at V_{DS} = 24 V,T_J = 125˚C	I_{DSS}	- -	- -	1 10	μA
Gate-Source Leakage Current at V_{GS} = ± 20 V	I_{GSS}	-	-	±10	μA
Drain-Source On-State Resistance at V_{GS} = 10 V, I_D = 16 A at V_{GS} = 4.5 V, I_D = 8 A	$R_{DS(on)}$	- -	- -	8.5 13	mΩ
Forward Transconductance at V_{DS} = 10 V, I_D = 8 A	g_{FS}	-	9.5	-	S
Input Capacitance at V_{GS} = 0 V, V_{DS} = 25 V, f = 1 MHz	C_{iss}	-	-	1000	pF
Output Capacitance at V_{GS} = 0 V, V_{DS} = 25 V, f = 1 MHz	C_{oss}	-	-	220	pF
Reverse Transfer Capacitance at V_{GS} = 0 V, V_{DS} = 25 V, f = 1 MHz	C_{rss}	-	-	105	pF
Turn-On Delay Time at V_{GS} = 10 V, V_{DD} = 15 V, I_D = 15 A, R_{GEN} = 3.3 Ω	$t_{d(on)}$	-	-	9	ns
Turn-On Rise Time at V_{GS} = 10 V, V_{DD} = 15 V, I_D = 15 A, R_{GEN} = 3.3 Ω	t_r	-	-	24	ns
Turn-Off Delay Time at V_{GS} = 10 V, V_{DD} = 15 V, I_D = 15 A, R_{GEN} = 3.3 Ω	t_{off}	-	-	52	ns
Turn-Off Fall Time at V_{GS} = 10 V, V_{DD} = 15 V, I_D = 15 A, R_{GEN} = 3.3 Ω	t_f	-	-	16	ns

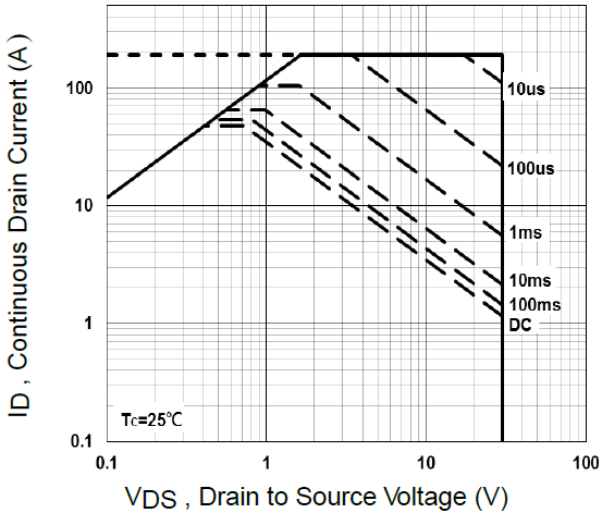
Drain-Source Diode Characteristics and Maximum Ratings

Parameter	Symbol	Max.	Unit
Drain-Source Diode Forward Voltage at V_{GS} = 0 V, I_S = 1 A	V_{SD}	1	V


ID , Continuous Drain Current (A)
50
40
30
20
10
0
25
50
75
100
125
150
TC , Case Temperature (℃)


Normalized On Resistance (mΩ)
1.6
1.4
1.2
1
0.8
0.6
-50
0
50
100
150
TJ , Junction Temperature (℃)


Normalized Gate Threshold Voltage (V)
1.3
1.1
0.9
0.7
0.5
-50
0
50
100
150
TJ , Junction Temperature (℃)


ID , Continuous Drain Current (A)
100
10
1
0.1
0.1
1
10
100
10us
100us
1ms
10ms
100ms
DC
Tc=25℃
VDS , Drain to Source Voltage (V)

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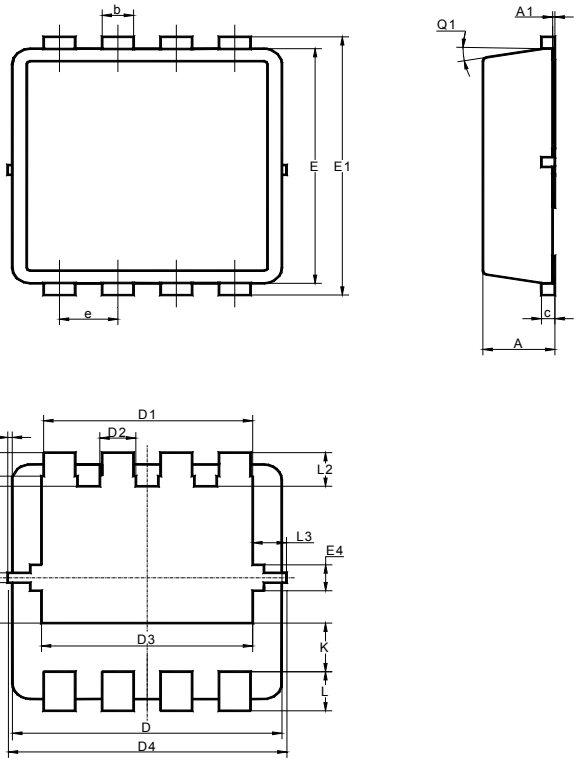
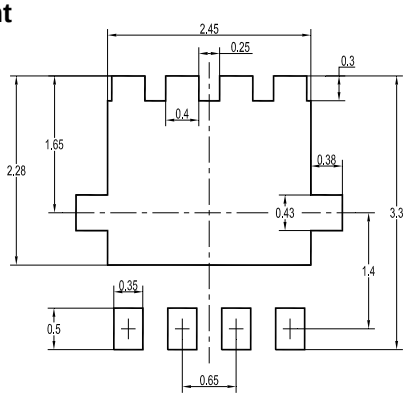
DFN3030 Package Outline Dimensions (Units: mm)



UNIT	A	A1	b	c	D	D1	D2	D3	D4	E	E1	E2	E3
mm	0.9	0.05	0.35	0.25	3.1	2.45	0.5	2.7	3.2	3.1	3.3	1.85	0.68
	0.7	0	0.24	0.1	2.9	2.2	0.3	2.4	3	2.9	3.1	1.65	0.48

UNIT	E4	E5	E6	e	K	L	L1	L2	L3	Q1
mm	0.43	0.4	0.25	0.7	0.72	0.5	0.1	0.53	0.475	12°
	0.23	0.2	0.075	0.6	0.52	0.3	0	0.33	0.275	0°

Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
DFN3030	8	4 ± 0.1	0.157 ± 0.004	330	13	3,000

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