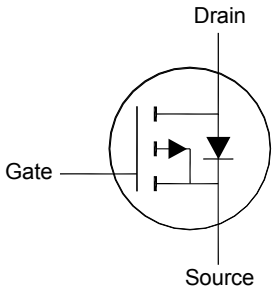
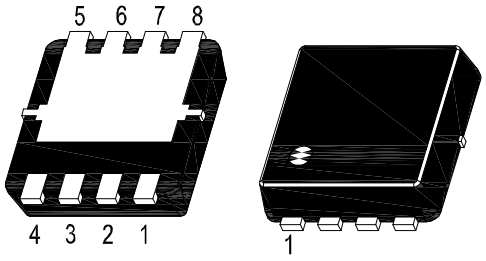
SFTP7403MP

P-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}	± 25	V
Drain Current - Continuous	T_C = 25℃ T_C = 100℃	I_D	- 29 - 18	A
Drain Current - Continuous	T_A = 25℃ T_A = 70℃	I_{DSM}	- 11 - 8.5	A
Power Dissipation [2]	T_C = 25℃ T_C = 100℃	P_D	25 10	W
Power Dissipation [1]	T_A = 25℃ T_A = 70℃	P_{DSM}	4.1 2.6	W
Drain Current - Pulsed [3]		I_{DM}	- 80	A
Operating Junction and Storage Temperature Range		T_j, T_{stg}	- 55 to + 150	℃

Thermal Characteristics

Parameter		Symbol	Max.	Unit
Thermal Resistance - Junction to Ambient [1]	t ≤ 10 s	$R_{\theta JA}$	30	℃/W
Thermal Resistance - Junction to Ambient [1] [4]		$R_{\theta JA}$	60	℃/W
Thermal Resistance - Junction to Case		$R_{\theta JC}$	5	℃/W

[1] The value of $R_{\theta JA}$ is measured with the device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C. The Power dissipation P_{DSM} is based on $R_{\theta JA}$ t ≤ 10s value and the maximum allowed junction temperature of 150°C. The value in any given application depends on the user's specific board design, and the maximum temperature of 150°C may be used if the PCB allows it.

[2] The power dissipation PD is based on $T_{J(MAX)}$=150°C, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heatsinking is used.

[3] Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$=150°C. Ratings are based on low frequency and duty cycles to keep initial T_J =25°C.

[4] The $R_{\theta JA}$ is the sum of the thermal impedence from junction to case $R_{\theta JC}$ and case to ambient.

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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 uA	$-V_{GSth}$	1.7	-	3	V
Drain-Source Leakage Current at $-V_{DS}$ = 30 V	$-I_{DSS}$	-	-	1	μA
Gate-Source Leakage Current at V_{GS} = ± 25 V	I_{GSS}	-	-	100	nA
On state drain current at $-V_{GS}$ = 10 V , $-V_{DS}$ =5 V	$-I_{D(ON)}$	80	-	-	A
Drain-Source On-State Resistance at $-V_{GS}$ = 10 V, $-I_D$ = 8 A	$R_{DS(on)}$	-	-	18	mΩ
Drain-Source On-State Resistance at $-V_{GS}$ = 5 V, $-I_D$ = 5 A	$R_{DS(on)}$	-	-	36	mΩ
Forward Transconductance at $-V_{DS}$ = 5 V, $-I_D$ = 8 A	g_{FS}	-	20	-	S
Input Capacitance at V_{GS} = 0 V,$-V_{DS}$ = 15 V, f = 1 MHz	C_{iss}	-	-	1400	pF
Output Capacitance at V_{GS} = 0 V, $-V_{DS}$ = 15 V, f = 1 MHz	C_{oss}	-	240	-	pF
Reverse Transfer Capacitance at V_{GS} = 0 V, $-V_{DS}$ = 15 V, f = 1 MHz	C_{rss}	-	155	-	pF
Turn-On Delay Time at $-V_{GS}$ = 10 V, $-V_{DS}$ = 15 V, R_L = 1.8 Ω, R_{GEN} = 3 Ω	$t_{d(on)}$	-	8.7	-	ns
Turn-On Rise Time at $-V_{GS}$ = 10 V, $-V_{DS}$ = 15 V, R_L = 1.8 Ω, R_{GEN} = 3 Ω	t_r	-	8.5	-	ns
Turn-Off Delay Time at $-V_{GS}$ = 10 V, $-V_{DS}$ = 15 V, R_L = 1.8 Ω, R_{GEN} = 3 Ω	t_{off}	-	18	-	ns
Turn-Off Fall Time at $-V_{GS}$ = 10 V, $-V_{DS}$ = 15 V, R_L = 1.8 Ω, R_{GEN} = 3 Ω	t_f	-	7	-	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
Source-drain current	$-I_S$	22	A

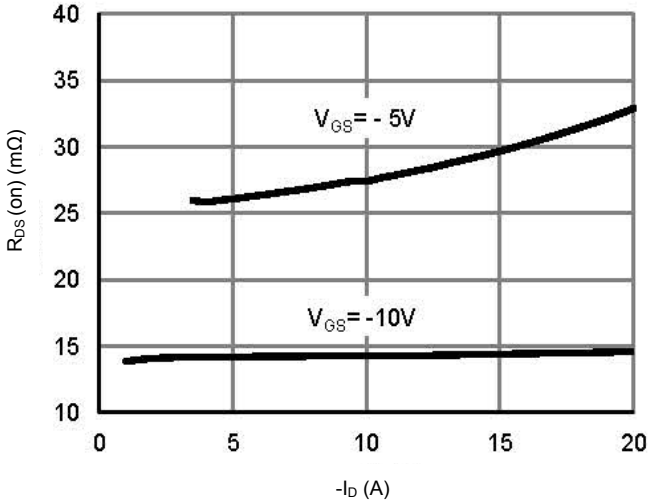

Figure1.On-Resistance vs.Drain Current and Gate Voltage

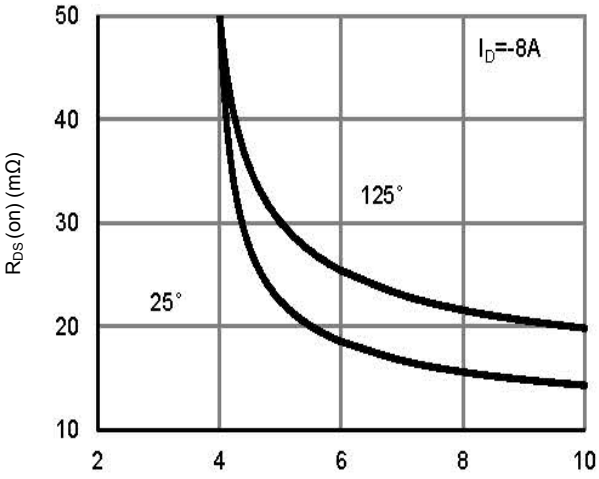

Figure 2.On-Resistance vs. Gate-Source Voltage

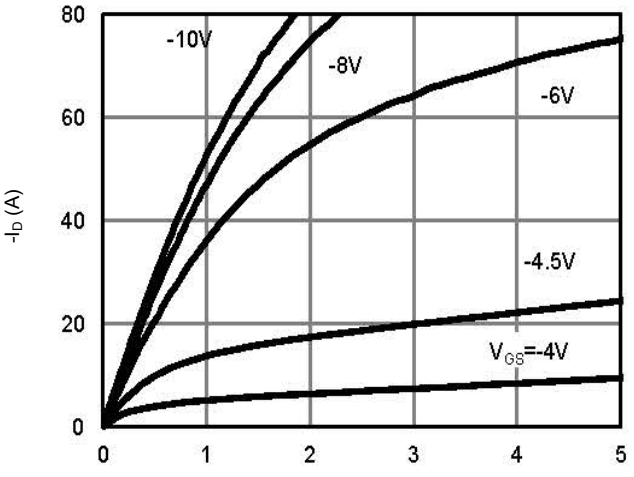

Figure 3.On-Region Characteristics

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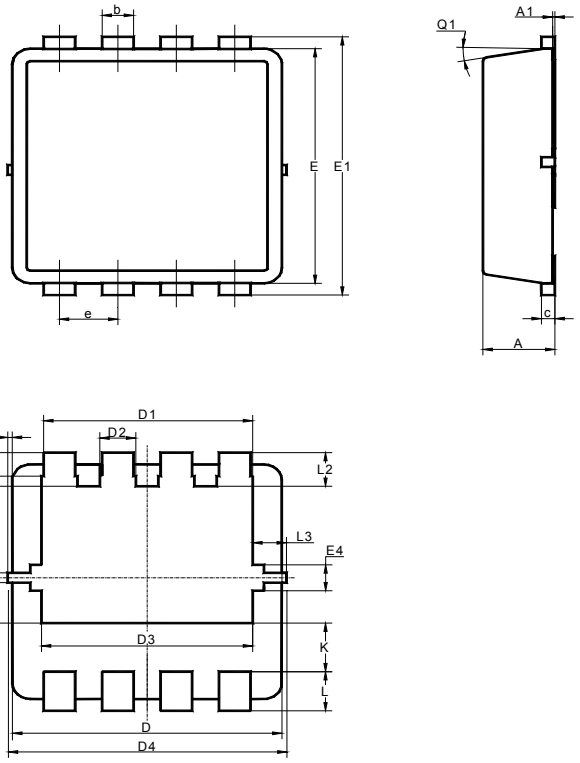
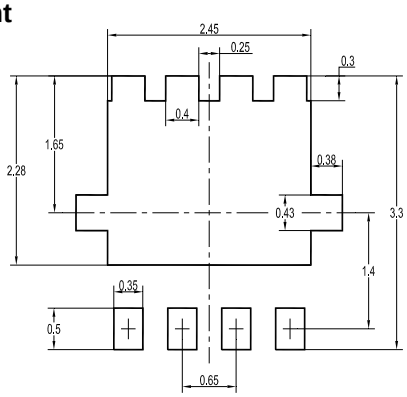
DFN3030 Package Outline Dimensions (Units: mm)



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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