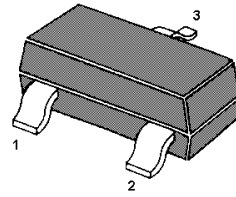


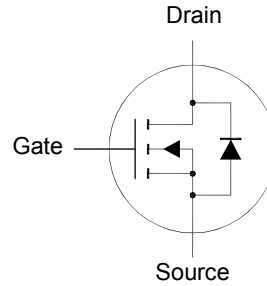
MMFTN2306

N-Channel Logic Level Enhancement Mode Field Effect Transistor

for high power and current handing capability



1. Gate 2. Source 3. Drain
SOT-23 Plastic Package



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	30	V
Drain-Gate Voltage	V_{GS}	± 12	V
Drain Current - Continuous	I_D	5	A
Drain Current - Pulsed ¹⁾	I_{DM}	20	A
Total Power Dissipation	P_{tot}	1.38	W
Operating Junction and Storage Temperature Range	T_j, T_{stg}	- 55 to + 150	$^\circ\text{C}$

¹⁾ Repetitive Rating: Pulse width limited by maximum junction temperature.

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance from Junction to Ambient ²⁾	$R_{\theta JA}$	90	$^\circ\text{C/W}$

²⁾ Surface Mounted on FR4 Board, $t \leq 10$ sec.

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Characteristics at $T_a = 25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage at $I_D = 250 \mu\text{A}$	$V_{(BR)DSS}$	30	-	-	V
Drain-Source Leakage Current at $V_{DS} = 30 \text{ V}$	I_{DSS}	-	-	1	μA
Gate-Source Leakage Current at $V_{GS} = \pm 12 \text{ V}$	I_{GSS}	-	-	± 100	nA
Gate-Source Threshold Voltage at $V_{GS} = V_{DS}$, $I_D = 250 \mu\text{A}$	$V_{GS(th)}$	0.5	-	1.2	V
Drain-Source On-State Resistance at $V_{GS} = 2.5 \text{ V}$, $I_D = 2.6 \text{ A}$ at $V_{GS} = 4.5 \text{ V}$, $I_D = 5 \text{ A}$ at $V_{GS} = 10 \text{ V}$, $I_D = 5 \text{ A}$	$R_{DS(on)}$	-	-	50 45 40	m Ω
Forward Transconductance at $V_{DS} = 5 \text{ V}$, $I_D = 5 \text{ A}$	g_{FS}	-	13	-	S
Input Capacitance at $V_{DS} = 25 \text{ V}$, $f = 1 \text{ MHz}$	C_{iss}	-	-	1050	pF
Output Capacitance at $V_{DS} = 25 \text{ V}$, $f = 1 \text{ MHz}$	C_{oss}	-	90	-	pF
Reverse Transfer Capacitance at $V_{DS} = 25 \text{ V}$, $f = 1 \text{ MHz}$	C_{rss}	-	70	-	pF
Turn-On Delay Time at $V_{DS} = 15 \text{ V}$, $I_D = 5 \text{ A}$, $V_{GS} = 10 \text{ V}$, $R_G = 3.3 \Omega$, $R_D = 3 \Omega$	$t_{d(on)}$	-	6	-	ns
Turn-On Rise Time at $V_{DS} = 15 \text{ V}$, $I_D = 5 \text{ A}$, $V_{GS} = 10 \text{ V}$, $R_G = 3.3 \Omega$, $R_D = 3 \Omega$	t_r	-	20	-	ns
Turn-Off Delay Time at $V_{DS} = 15 \text{ V}$, $I_D = 5 \text{ A}$, $V_{GS} = 10 \text{ V}$, $R_G = 3.3 \Omega$, $R_D = 3 \Omega$	$t_{d(off)}$	-	20	-	ns
Turn-Off Fall Time at $V_{DS} = 15 \text{ V}$, $I_D = 5 \text{ A}$, $V_{GS} = 10 \text{ V}$, $R_G = 3.3 \Omega$, $R_D = 3 \Omega$	t_f	-	3	-	ns

Drain-Source Diode Characteristics and Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Drain-Source Diode Forward Voltage ¹⁾ at $V_{GS} = 0 \text{ V}$, $I_S = 1.2 \text{ A}$	V_{SD}	-	1.2	V

¹⁾ Pulse Test: Pulse width $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2\%$.

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