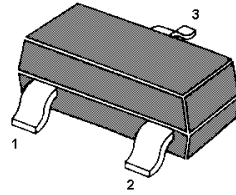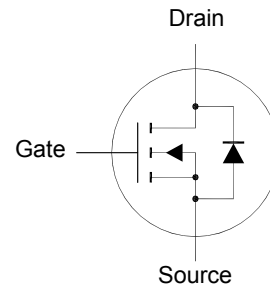# MMFTN2302

N-Channel Logic Level Enhancement Mode Field Effect Transistor

for high power and current handing capability
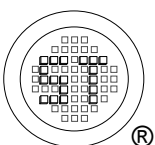
1. Gate 2. Source 3. Drain
TO-236 Plastic Package

Absolute Maximum Ratings (T$_a$ = 25℃ unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	20	V
Drain-Gate Voltage	V_{GS}	± 8	V
Drain Current - Continuous	I_D	2.4	A
Drain Current - Pulsed[1]	I_{DM}	10	A
Total Power Dissipation (t ≤ 10 s)	P_{tot}	0.9	W
Operating Junction and Storage Temperature Range	T_j, T_{stg}	- 55 to + 150	℃

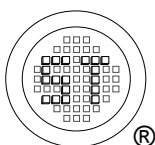[1] Repetitive Rating: Pulse width limited by maximum junction temperature.

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Dated: 16/03/2015   Rev: 03   CL

MMFTN2302

Characteristics at T$_a$ = 25℃ unless otherwise specified

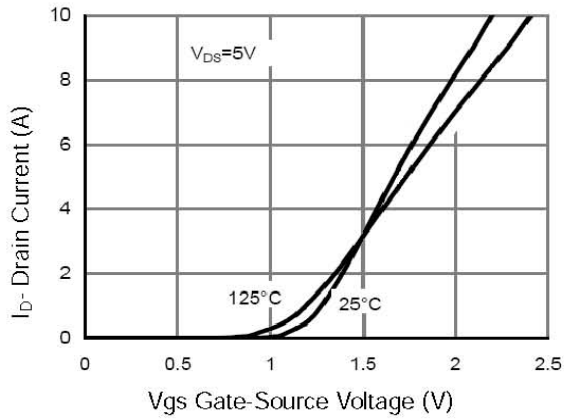| Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage at I$_D$ = 250 µA	V$_{(BR)DSS}$	20	-	-	V
Drain-Source Leakage Current at V$_{DS}$ = 20 V	I$_{DSS}$	-	-	1	µA
Gate-Source Leakage Current at V$_{GS}$ = ± 8 V	I$_{GSS}$	-	-	± 100	nA
Gate-Source Threshold Voltage at V$_{GS}$ = V$_{DS}$, I$_D$ = 250 µA	V$_{GS(th)}$	0.65	-	1.2	V
Drain-Source On-State Resistance at V$_{GS}$ = 2.5 V, I$_D$ = 3.1 A at V$_{GS}$ = 4.5 V, I$_D$ = 3.6 A	R$_{DS(on)}$	- -	- -	115 60	mΩ
Forward Transconductance at V$_{DS}$ = 5 V, I$_D$ = 3.6 A	g$_{FS}$	-	8	-	S
Input Capacitance at V$_{DS}$ = 10 V, f = 1 MHz	C$_{iss}$	-	300	-	pF
Output Capacitance at V$_{DS}$ = 10 V, f = 1 MHz	C$_{oss}$	-	120	-	pF
Reverse Transfer Capacitance at V$_{DS}$ = 10 V, f = 1 MHz	C$_{rss}$	-	80	-	pF
Turn-On Delay Time at V$_{DD}$ = 10 V, I$_D$ = 3.6 A, V$_{GS}$ = 4.5 V, R$_L$ = 2.8 Ω, R$_G$ = 6 Ω	t$_{d(on)}$	-	-	15	ns
Turn-On Rise Time at V$_{DD}$ = 10 V, I$_D$ = 3.6 A, V$_{GS}$ = 4.5 V, R$_L$ = 2.8 Ω, R$_G$ = 6 Ω	t$_r$	-	-	80	ns
Turn-Off Delay Time at V$_{DD}$ = 10 V, I$_D$ = 3.6 A, V$_{GS}$ = 4.5 V, R$_L$ = 2.8 Ω, R$_G$ = 6 Ω	t$_{d(off)}$	-	-	60	ns
Turn-Off Fall Time at V$_{DD}$ = 10 V, I$_D$ = 3.6 A, V$_{GS}$ = 4.5 V, R$_L$ = 2.8 Ω, R$_G$ = 6 Ω	t$_f$	-	-	25	ns

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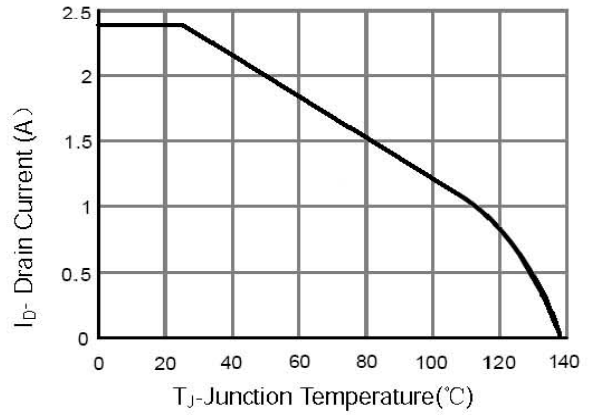
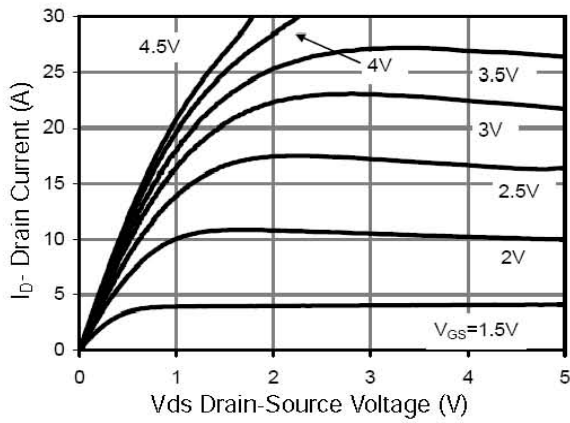Figure 1. Transfer Characteristics
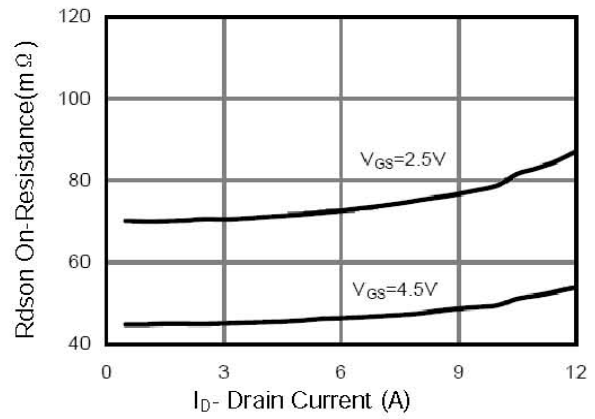

Figure 2. Drain Current

Figure 3. Output CHARACTERISTICS

Figure 4. Drain-Source On-Resistance

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