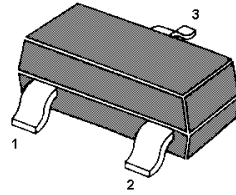


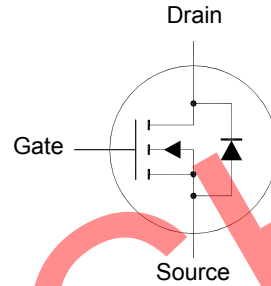
# MMFTN2302

## N-Channel Logic Level Enhancement Mode Field Effect Transistor

for high power and current handing capability



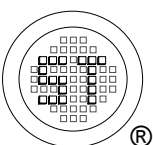
1. Gate 2. Source 3. Drain  
SOT-23 Plastic Package



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DSS}$	20	V
Drain-Gate Voltage	$V_{GS}$	$\pm 8$	V
Drain Current - Continuous	$I_D$	2.4	A
Drain Current - Pulsed <sup>1)</sup>	$I_{DM}$	10	A
Total Power Dissipation	$P_{tot}$	0.9	W
Operating Junction and Storage Temperature Range	$T_j, T_{stg}$	- 55 to + 150	$^\circ\text{C}$

<sup>1)</sup> Repetitive Rating: Pulse width limited by maximum junction temperature.



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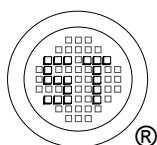


Dated: 16/03/2013 Rev: 01

# MMFTN2302

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

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage at $I_D = 250 \mu\text{A}$	$V_{(BR)DSS}$	20	-	-	V
Drain-Source Leakage Current at $V_{DS} = 20 \text{ V}$	$I_{DSS}$	-	-	1	$\mu\text{A}$
Gate-Source Leakage Current at $V_{GS} = \pm 8 \text{ V}$	$I_{GSS}$	-	-	$\pm 100$	nA
Gate-Source Threshold Voltage at $V_{GS} = V_{DS}$ , $I_D = 250 \mu\text{A}$	$V_{GS(th)}$	0.65	-	1.2	V
Drain-Source On-State Resistance at $V_{GS} = 2.5 \text{ V}$ , $I_D = 3.1 \text{ A}$ at $V_{GS} = 4.5 \text{ V}$ , $I_D = 3.6 \text{ A}$	$R_{DS(on)}$	- -	-	115 60	m $\Omega$
Forward Transconductance at $V_{DS} = 5 \text{ V}$ , $I_D = 3.6 \text{ A}$	$g_{FS}$	-	8	-	S
Input Capacitance at $V_{DS} = 10 \text{ V}$ , $f = 1 \text{ MHz}$	$C_{iss}$	-	300	-	pF
Output Capacitance at $V_{DS} = 10 \text{ V}$ , $f = 1 \text{ MHz}$	$C_{oss}$	-	120	-	pF
Reverse Transfer Capacitance at $V_{DS} = 10 \text{ V}$ , $f = 1 \text{ MHz}$	$C_{rss}$	-	80	-	pF
Turn-On Delay Time at $V_{DD} = 10 \text{ V}$ , $I_D = 3.6 \text{ A}$ , $V_{GS} = 4.5 \text{ V}$ , $R_L = 2.8 \Omega$ , $R_G = 6 \Omega$	$t_{d(on)}$	-	-	15	ns
Turn-On Rise Time at $V_{DD} = 10 \text{ V}$ , $I_D = 3.6 \text{ A}$ , $V_{GS} = 4.5 \text{ V}$ , $R_L = 2.8 \Omega$ , $R_G = 6 \Omega$	$t_r$	-	-	80	ns
Turn-Off Delay Time at $V_{DD} = 10 \text{ V}$ , $I_D = 3.6 \text{ A}$ , $V_{GS} = 4.5 \text{ V}$ , $R_L = 2.8 \Omega$ , $R_G = 6 \Omega$	$t_{d(off)}$	-	-	60	ns
Turn-Off Fall Time at $V_{DD} = 10 \text{ V}$ , $I_D = 3.6 \text{ A}$ , $V_{GS} = 4.5 \text{ V}$ , $R_L = 2.8 \Omega$ , $R_G = 6 \Omega$	$t_f$	-	-	25	ns



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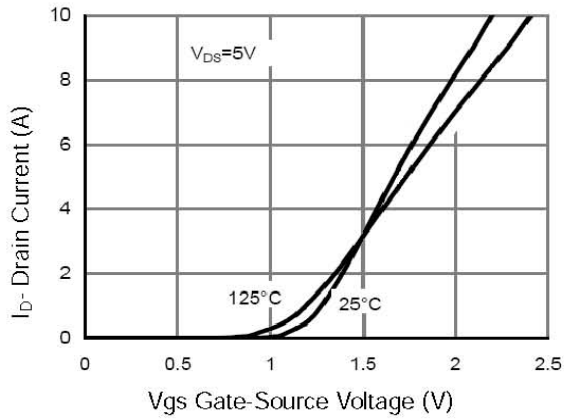


Figure 1. Transfer Characteristics

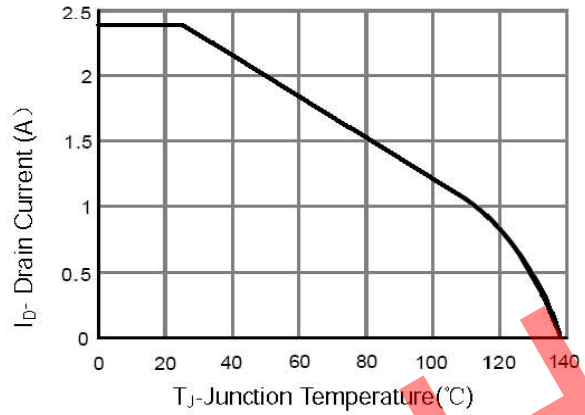


Figure 2. Drain Current

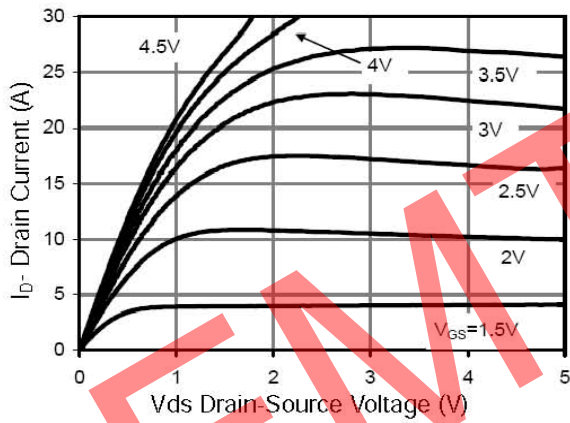


Figure 3. Output CHARACTERISTICS

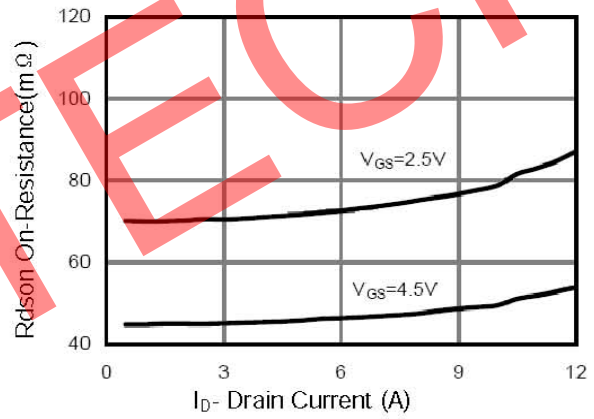


Figure 4. Drain-Source On-Resistance

