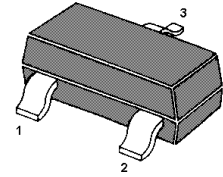
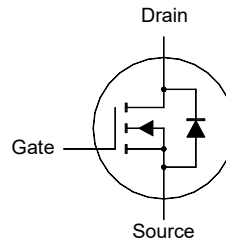


MMFTN170

N-Channel Enhancement Mode Field Effect Transistor

Feature

- Voltage controlled small signal switch
- High saturation current capability



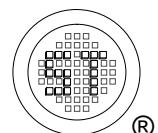
1. Gate 2. Source 3. Drain
TO-236 Plastic Package

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Drain-Gate Voltage ($R_{GS} \leq 1 \text{ M}\Omega$)	V_{DGR}	60	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current - Continuous	I_D	500	mA
Peak Drain Current, Pulsed	I_{DM}	800	mA
Total Power Dissipation	P_{tot}	300	mW
Operating and Storage Temperature Range	T_j, T_{stg}	- 55 to + 150	$^\circ\text{C}$

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

Parameter	Symbol	Min.	Typ.	Max.	Unit
STATIC PARAMETERS					
Drain-Source Breakdown Voltage at $I_D = 100 \mu\text{A}$	$V_{(BR)DS}$	60	-	-	V
Zero Gate Voltage Drain Current at $V_{DS} = 25 \text{ V}$	I_{DSS}	-	-	0.5	μA
Gate-Body Leakage, Forward at $V_{GS} = 15 \text{ V}$	I_{GSSF}	-	-	10	nA
Gate-Source Threshold Voltage at $V_{DS} = V_{GS}, I_D = 1 \text{ mA}$	$V_{GS(th)}$	0.8	-	3	V
Drain-Source On-State Resistance at $V_{GS} = 10 \text{ V}, I_D = 200 \text{ mA}$	$R_{DS(on)}$	-	-	5	Ω
Forward Transconductance at $V_{DS} \geq 2 V_{DS(on)}, I_D = 200 \text{ mA}$	g_{FS}	-	320	-	mS
DYNAMIC PARAMETERS					
Input Capacitance at $V_{DS} = 10 \text{ V}, f = 1 \text{ MHz}$	C_{iss}	-	-	40	pF
Output Capacitance at $V_{DS} = 10 \text{ V}, f = 1 \text{ MHz}$	C_{oss}	-	-	30	pF
Reverse Transfer Capacitance at $V_{DS} = 10 \text{ V}, f = 1 \text{ MHz}$	C_{rss}	-	-	10	pF
Turn-On Time at $V_{DD} = 25 \text{ V}, I_D = 500 \text{ mA}, V_{GS} = 10 \text{ V}, R_{GEN} = 50 \Omega$	$t_{d(on)}$	-	-	10	ns
Turn-Off Delay Time at $V_{DD} = 25 \text{ V}, I_D = 500 \text{ mA}, V_{GS} = 10 \text{ V}, R_{GEN} = 50 \Omega$	$t_{d(off)}$	-	-	10	ns



Ratings and Electrical Characteristics Curves

Fig 1. On-Region Characteristics

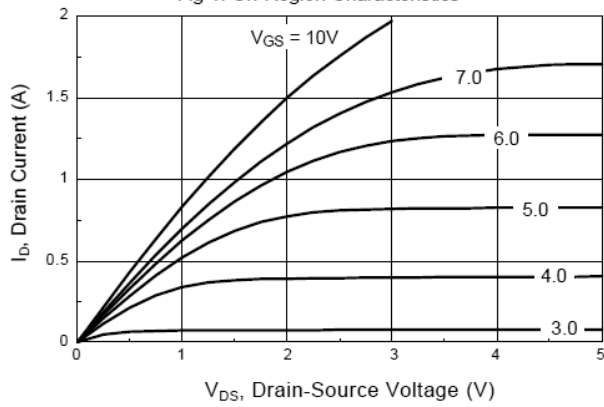


Fig 2. Transfer Characteristics

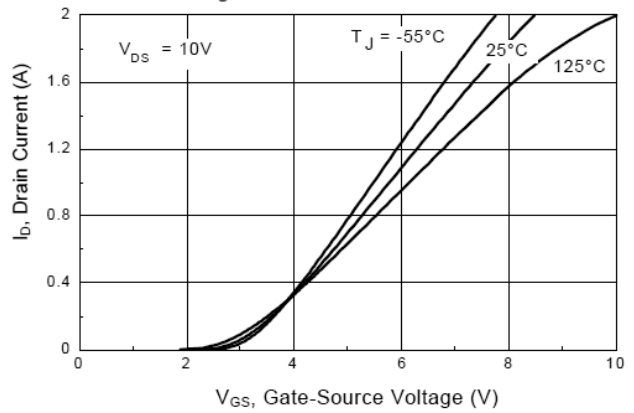


Fig 3. On-Resistance Variation with Gate Voltage and Drain Current

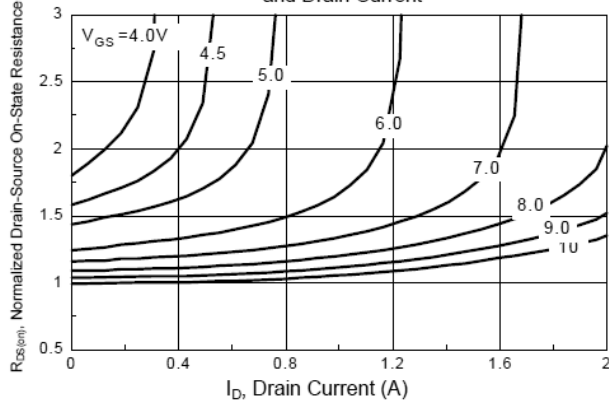


Fig 4. On-Resistance Variation with Temperature

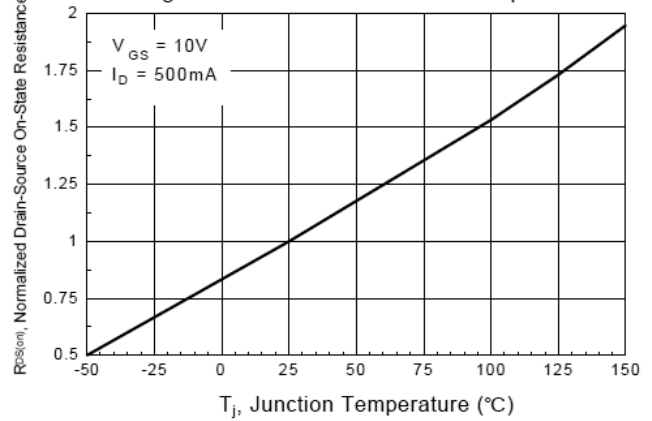


Fig 5. On-Resistance Variation with Drain Current and Temperature

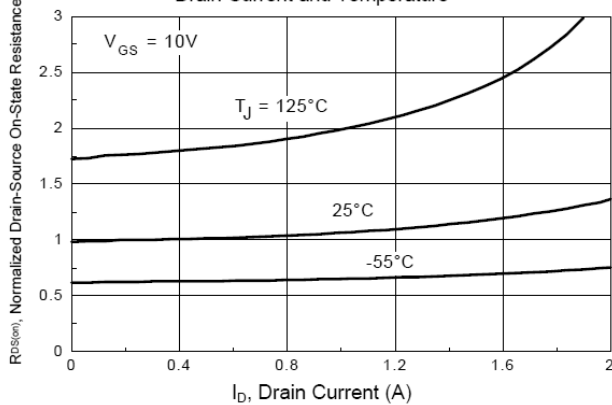
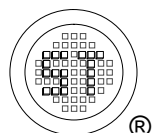
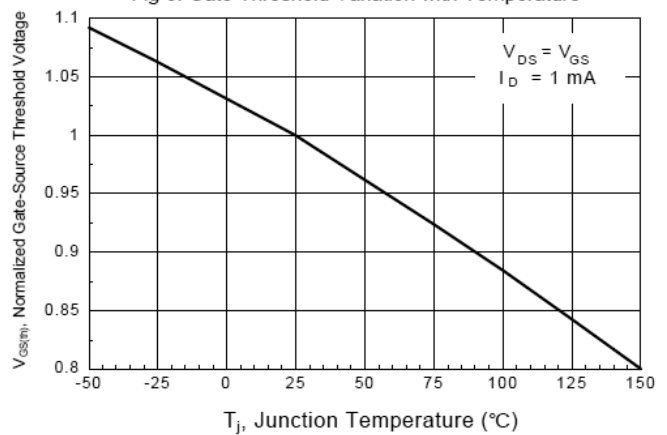


Fig 6. Gate Threshold Variation with Temperature



Ratings and Electrical Characteristics Curves

Fig 7. Breakdown Voltage Variation with Temperature

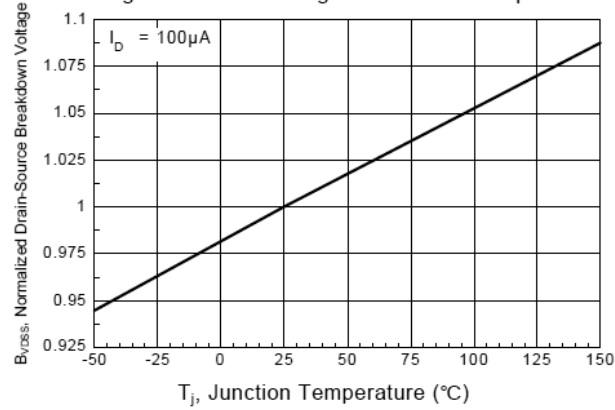


Fig 8. Capacitance Characteristics

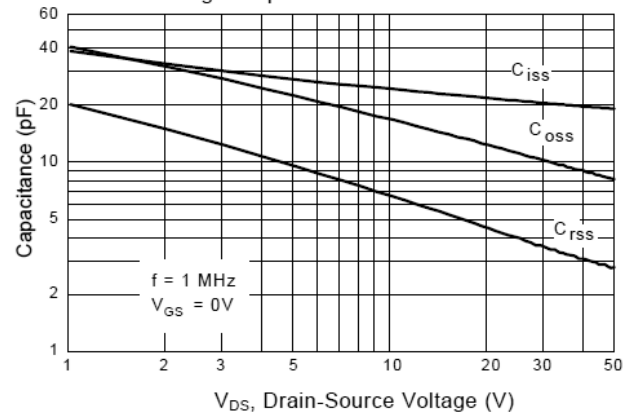
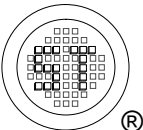
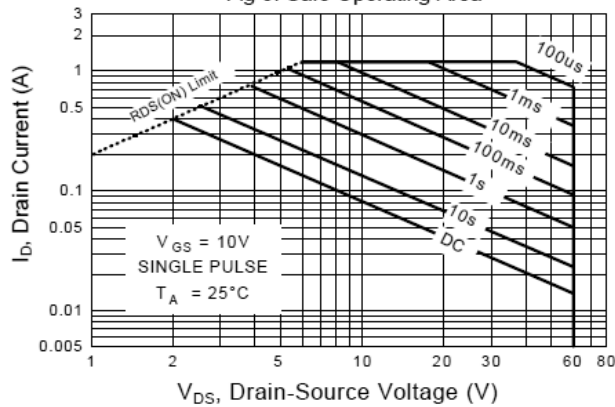


Fig 9. Safe Operating Area



Test Circuits

Fig.1-1 Switching times test circuit

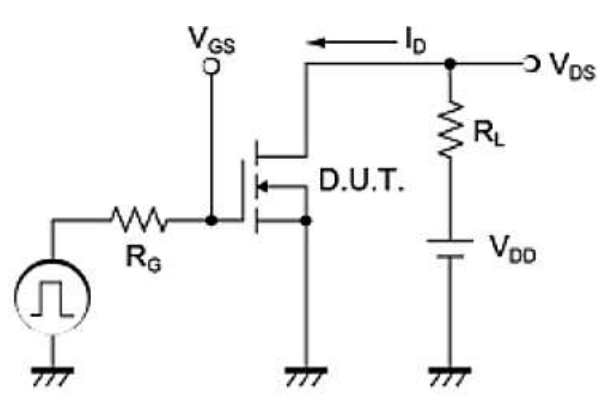
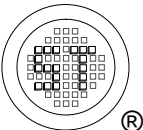
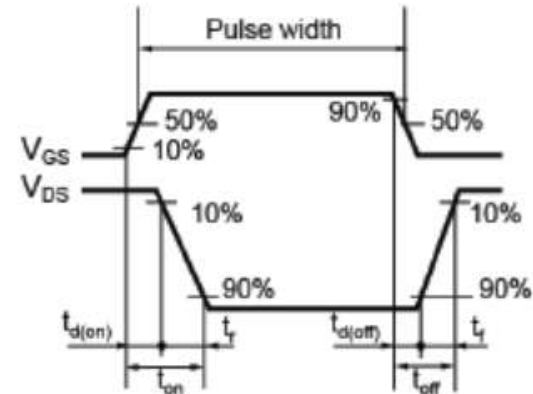


Fig.1-2 Switching Waveform

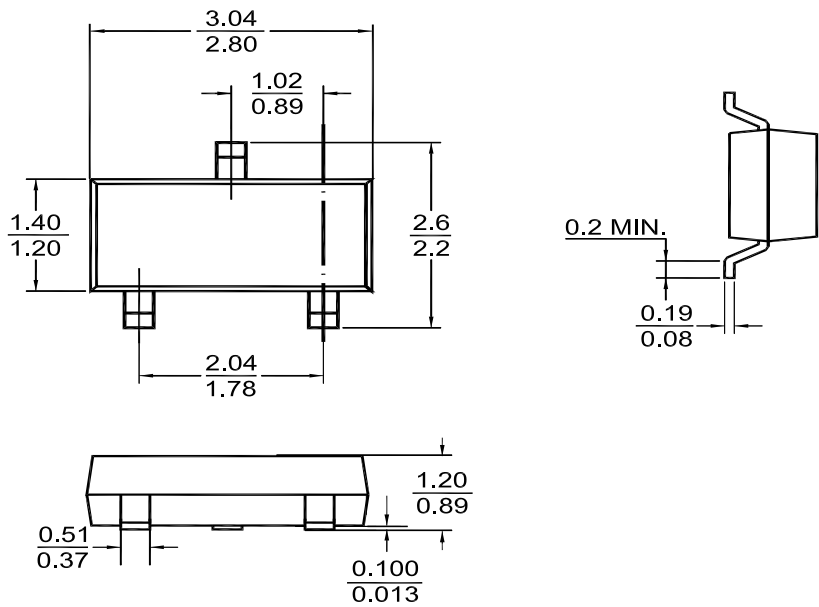


MMFTN170

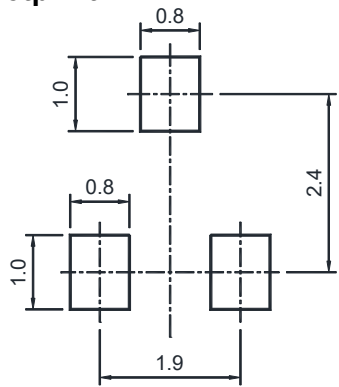
PACKAGE OUTLINE

Plastic surface mounted package (Dimensions in mm)

TO-236



Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
TO-236	8	4 ± 0.1	0.157 ± 0.004	178	7	3,000

Marking information

"JD" = Part No.
"YM" = Date Code Marking
"Y" = Year
"M" = Month
Font type: Arial

