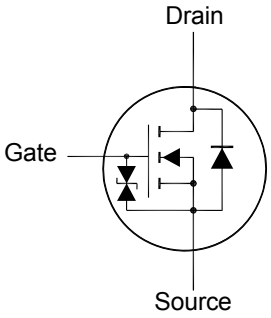
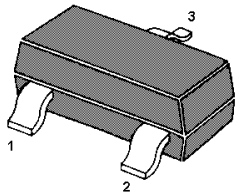
MMFTN6001

N-Channel Enhancement Mode MOSFET

Features

• ESD Protected up to 2KV





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

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current [1), 2)] T_A = 25℃ T_A = 70℃	I_D	0.44 0.35	A
Power Dissipation [1), 2)] T_A = 25℃ T_A = 70℃	P_{tot}	0.53 0.34	W
Peak Drain Current (tp = 380 μs)	I_{DM}	1	A
Junction and Storage Temperature Rang	T_J,T_{stg}	- 55 to + 150	℃

Thermal Characteristics

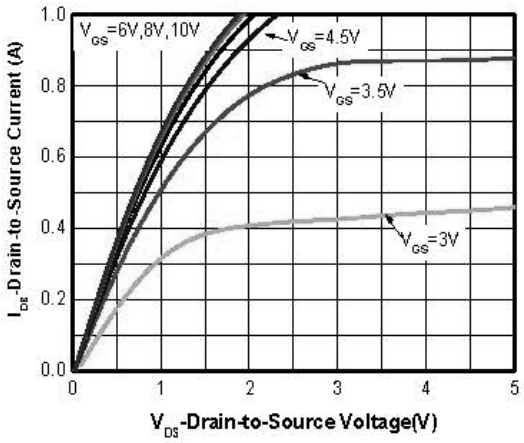
Parameter	Symbol	Max.	Unit
Thermal Resistance from Juntion to Ambient [1)] at t ≤10s Steady State	$R_{\theta JA}$	 180 232	℃/W

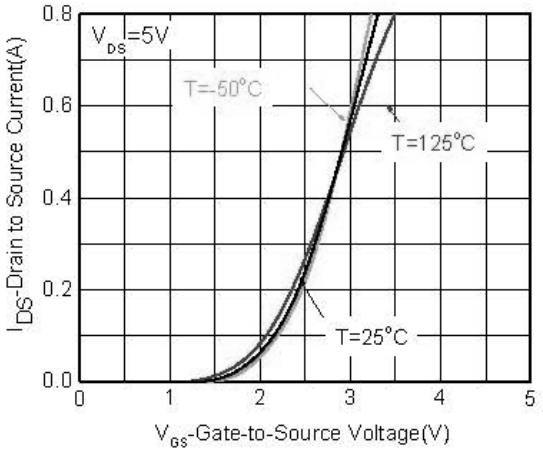
[1)] Surface mounted on FR-4 Board using 1 square inch pad size, 1oz Copper

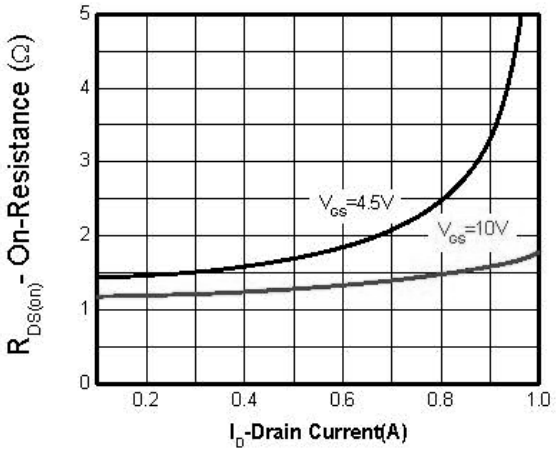
[2)] Maximum junction temperature T_J = 150°C.

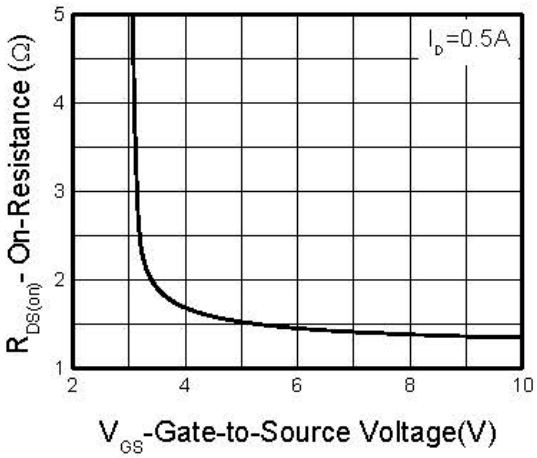
Characteristics at T_A = 25℃ unless otherwise specified

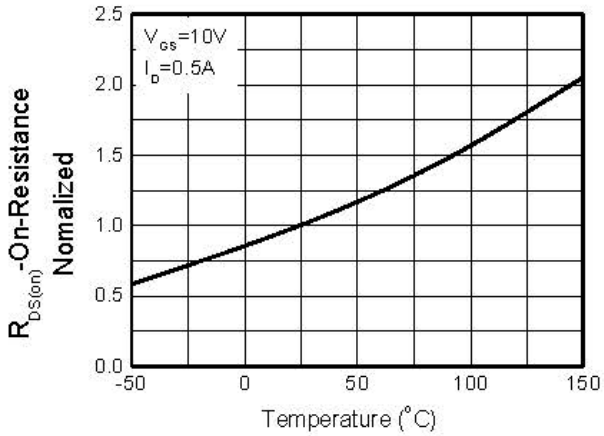
Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage at I_D = 250 µA	BV_{DSS}	60	-	-	V
Gate-Source Threshold Voltage at V_{DS} = V_{GS}, I_D = 250 uA	V_{GSth}	0.8	-	2	V
Drain-Source Leakage Current at V_{DS} = 60 V	I_{DSS}	-	-	1	µA
Gate Leakage Current at V_{GS} = ± 20 V	I_{GSS}	-	-	± 5	µA
Drain-Source On-State Resistance at V_{GS} = 10 V, I_D = 0.5 A at V_{GS} = 4.5 V, I_D = 0.2 A at V_{GS} = 2.5 V, I_D = 0.05 A	$R_{DS(on)}$	- - -	- - 2.7	2 2.6 3.8	Ω
Forward Transconductance at V_{DS} = 15 V, I_D = 0.25 A	g_{FS}	-	0.42	-	S
Diode Forward Voltage at I_S = 0.3 A, V_{GS} = 0 V	V_{SD}	-	-	1.5	V
Input Capacitance at V_{GS} = 0 V, V_{DS} = 25 V, f = 1 MHz	C_{iss}	-	23.37	-	pF
Output Capacitance at V_{GS} = 0 V, V_{DS} = 25 V, f = 1 MHz	C_{oss}	-	7.33	-	pF
Reverse Transfer Capacitance at V_{GS} = 0 V, V_{DS} = 25 V, f = 1 MHz	C_{rss}	-	5.2	-	pF
Turn-On Delay Time at V_{DD} = 30 V, I_D = 0.2 A, V_{GEN} = 10 V, R_G = 10 Ω	t_{on}	-	7.6	-	ns
Turn-On Rise Time at V_{DD} = 30 V, I_D = 0.2 A, V_{GEN} = 10 V, R_G = 10 Ω	t_r	-	5.1	-	ns
Turn-Off Delay Time at V_{DD} = 30 V, I_D = 0.2 A, V_{GEN} = 10 V, R_G = 10 Ω	t_{off}	-	24.6	-	ns
Turn-Off Fall Time at V_{DD} = 30 V, I_D = 0.2 A, V_{GEN} = 10 V, R_G = 10 Ω	t_f	-	10	-	ns

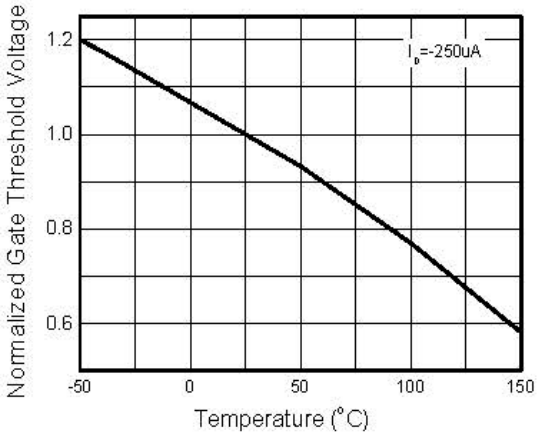

V_{GS}=6V,8V,10V
V_{GS}=4.5V
V_{GS}=3.5V
V_{GS}=3V
I_{DS}-Drain-to-Source Current (A)
V_{DS}-Drain-to-Source Voltage(V)


V_{DS}=5V
T=-50°C
T=125°C
T=25°C
I_{DS}-Drain to Source Current(A)
V_{GS}-Gate-to-Source Voltage(V)


V_{GS}=4.5V
V_{GS}=10V
$R_{DS(on)}$- On-Resistance (Ω)
I_D-Drain Current(A)


I_D=0.5A
$R_{DS(on)}$- On-Resistance (Ω)
V_{GS}-Gate-to-Source Voltage(V)


V_{GS}=10V
I_D=0.5A
$R_{DS(on)}$-On-Resistance
Nomalized
Temperature (°C)


I_D=-250uA
Normalized Gate Threshold Voltage
Temperature (°C)

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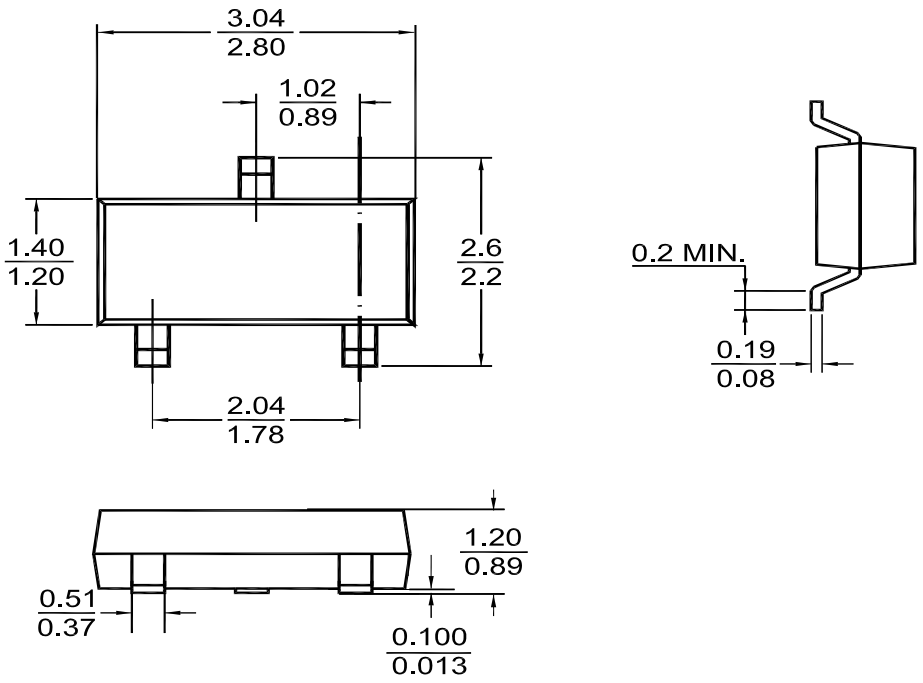
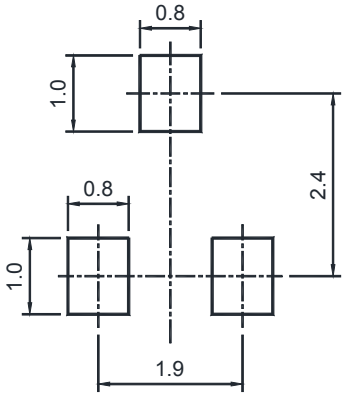
PACKAGE OUTLINE

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