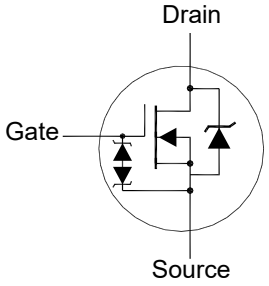
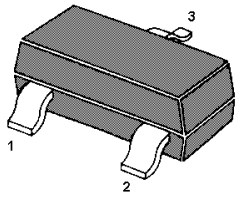
MMFTN501

N-Channel Depletion Mode MOSFET

Features

- ESD improved Capability
- dv/dt rated





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

Absolute Maximum Ratings (T_a = 25℃ unless otherwise specified)

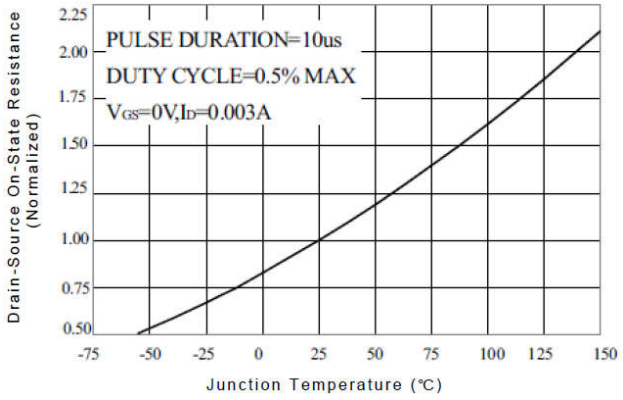
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	600	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current T_C = 70℃	I_D	30 24	mA
Peak Drain Current, Pulsed	I_{DM}	120	mA
Gate-Source ESD (HBM-C = 100 pF, R = 1.5 KΩ)	$V_{ESD(G-S)}$	300	V
Total Power Dissipation	P_D	500	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	250	℃/W
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	- 55 to + 150	℃

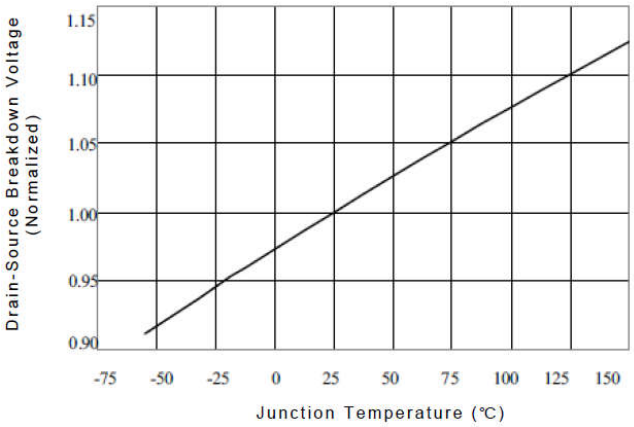
Dated: 25/02/2020 Rev: 04

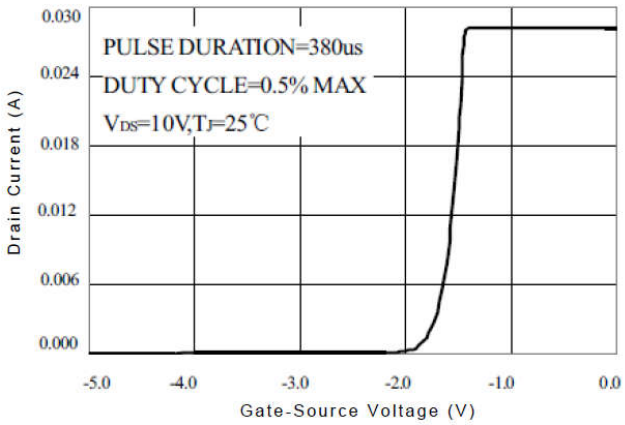
Characteristics at T_a = 25℃ unless otherwise specified

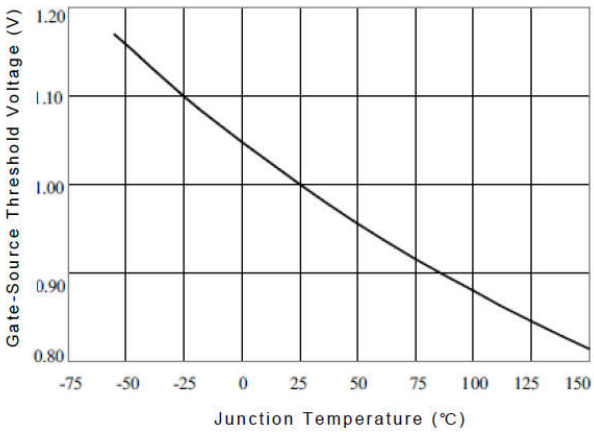
Parameter	Symbol	Min.	Typ.	Max.	Unit
STATIC PARAMETERS					
Drain-Source Breakdown Voltage at V_{GS} = - 5 V, I_D = 250 µA	BV_{DSS}	600	-	-	V
Gate-Source Breakdown Voltage at I_{GS} = ± 1 mA (Open Drain)	V_{GSO}	30	-	-	V
Gate-Source Leakage Current at V_{GS} = ± 20 V	I_{GSS}	-	-	± 10	µA
Drain-Source Leakage Current at V_{DS} = 600 V, V_{GS} = - 5 V	I_{DSS}	-	-	0.1	µA
Gate-Source Threshold Voltage at V_{DS} = 3 V, I_D = 8 µA	$V_{GS(th)}$	- 2.7	-	- 1	V
Drain-Source On-State Resistance at V_{GS} = 0 V, I_D = 3 mA at V_{GS} = 10 V, I_D = 16 mA	$R_{DS(ON)}$	- -	- -	700 800	Ω
Forward Transconductance at V_{DS} = 50 V, I_D = 10 mA	g_{FS}	8	-	-	mS
DYNAMIC PARAMETERS					
Input Capacitance at V_{GS} = - 5 V, V_{DS} = 25 V, f = 1 MHz	C_{iss}	-	50	-	pF
Output Capacitance at V_{GS} = - 5 V, V_{DS} = 25 V, f = 1 MHz	C_{oss}	-	4.53	-	pF
Reverse Transfer Capacitance at V_{GS} = - 5 V, V_{DS} = 25 V, f = 1 MHz	C_{rss}	-	1.08	-	pF
Turn-On Delay Time at V_{DD} = 300 V, I_D = 10 mA, V_{GS} = - 5~7 V, R_G = 6 Ω	$t_{d(on)}$	-	9.9	-	ns
Turn-On Rise Time at V_{DD} = 300 V, I_D = 10 mA, V_{GS} = - 5~7 V, R_G = 6 Ω	t_r	-	55.8	-	ns
Turn-Off Delay Time at V_{DD} = 300 V, I_D = 10 mA, V_{GS} = - 5~7 V, R_G = 6 Ω	$t_{d(off)}$	-	56.4	-	ns
Turn-Off Fall Time at V_{DD} = 300 V, I_D = 10 mA, V_{GS} = - 5~7 V, R_G = 6 Ω	t_f	-	136	-	ns
Body-Diode PARAMETERS					
Drain-Source Diode Forward Voltage at I_F = 16 mA, V_{GS} = - 5 V	V_{SD}	-	-	1.2	V

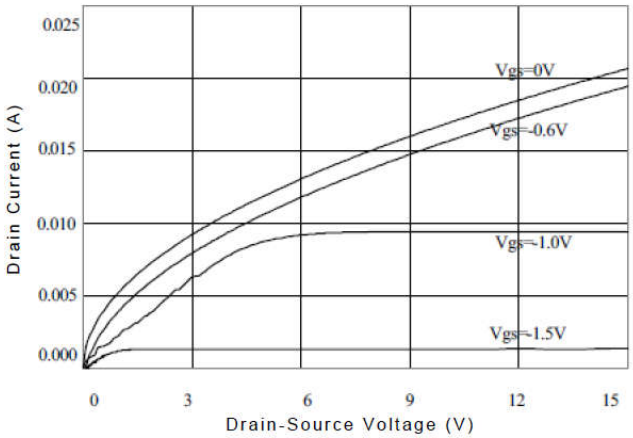
Ratings and Electrical Characteristics Curves





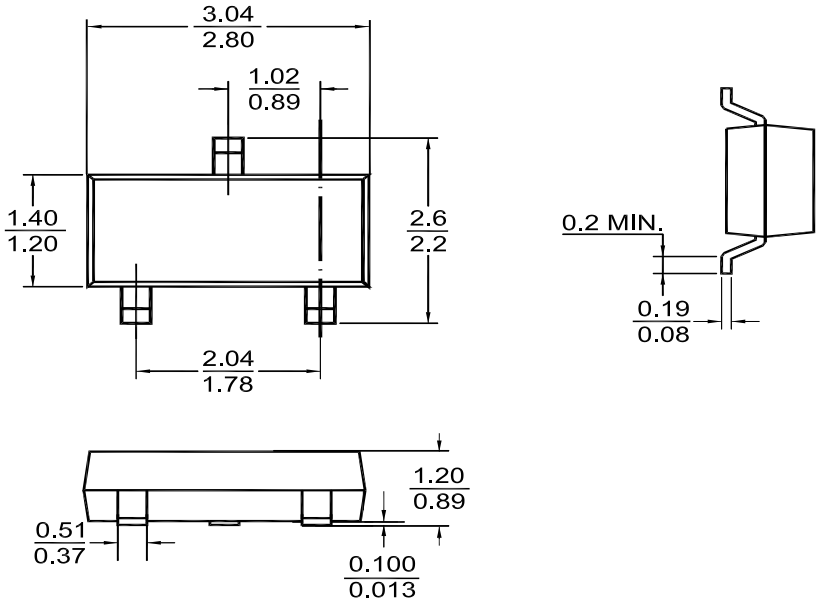




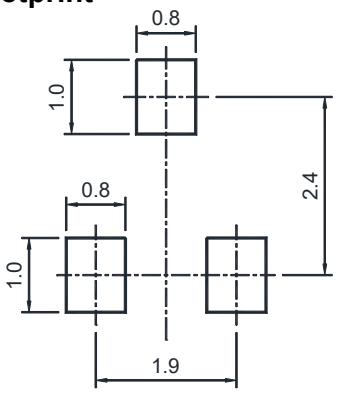


PACKAGE OUTLINE

Plastic surface mounted package (Dimensions in mm) SOT-23



Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-23	8	4 ± 0.1	0.157 ± 0.004	178	7	3,000

Marking information

" 5H " = Part No.

"YM" = Date Code Marking

"Y" = Year

"M" = Month

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