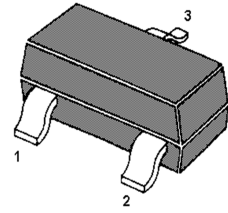
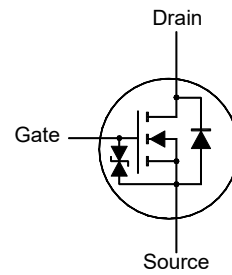


# MMFTN1052K

## N-Channel Enhancement Mode MOSFET

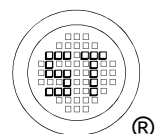


1. Gate 2. Source 3. Drain  
SOT-23 Plastic Package

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	100	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current	$I_D$	$\pm 1$	A
Peak Drain Current, Pulsed ( $t_p \leq 10 \mu\text{s}$ )	$I_{DM}$	$\pm 4$	A
Power Dissipation <sup>1)</sup>	$P_D$	1	W
Thermal Resistance from Junction to Ambient <sup>1)</sup>	$R_{\theta JA}$	125	$^\circ\text{C/W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	- 55 to + 150	$^\circ\text{C}$

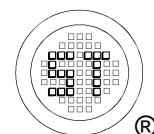
<sup>1)</sup> Mounted on a ceramic board.



# MMFTN1052K

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

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage at $I_D = 1\text{ mA}$	$V_{(BR)DSS}$	100	-	-	V
Zero Gate Voltage Drain Current at $V_{DS} = 80\text{ V}$	$I_{DSS}$	-	-	1	$\mu\text{A}$
Gate-Source Leakage at $V_{GS} = \pm 20\text{ V}$	$I_{GSS}$	-	-	$\pm 10$	$\mu\text{A}$
Gate-Source Threshold Voltage at $V_{DS} = 10\text{ V}$ , $I_D = 1\text{ mA}$	$V_{GS(th)}$	1	-	2.5	V
Drain-Source On-State Resistance at $V_{GS} = 10\text{ V}$ , $I_D = 1\text{ A}$ at $V_{GS} = 4.5\text{ V}$ , $I_D = 1\text{ A}$ at $V_{GS} = 4\text{ V}$ , $I_D = 1\text{ A}$	$R_{DS(on)}$	- - -	- - -	520 560 580	$\text{m}\Omega$
Forward Transfer Admittance at $V_{DS} = 10\text{ V}$ , $I_D = 1\text{ A}$	$ Y_{FS} $	1	-	-	s
Input Capacitance at $V_{DS} = 25\text{ V}$ , $V_{GS} = 0\text{ V}$ , $f = 1\text{ MHz}$	$C_{iss}$	-	140	-	$\text{pF}$
Output Capacitance at $V_{DS} = 25\text{ V}$ , $V_{GS} = 0\text{ V}$ , $f = 1\text{ MHz}$	$C_{oss}$	-	20	-	$\text{pF}$
Reverse Transfer Capacitance at $V_{DS} = 25\text{ V}$ , $V_{GS} = 0\text{ V}$ , $f = 1\text{ MHz}$	$C_{rss}$	-	12	-	$\text{pF}$
Turn-On Delay Time at $V_{DD} = 50\text{ V}$ , $I_D = 0.5\text{ A}$ , $V_{GS} = 10\text{ V}$ , $R_G = 10\ \Omega$ , $R_L = 100\ \Omega$	$t_{d(on)}$	-	6	-	ns
Turn-On Rise Time at $V_{DD} = 50\text{ V}$ , $I_D = 0.5\text{ A}$ , $V_{GS} = 10\text{ V}$ , $R_G = 10\ \Omega$ , $R_L = 100\ \Omega$	$t_r$	-	9	-	ns
Turn-Off Delay Time at $V_{DD} = 50\text{ V}$ , $I_D = 0.5\text{ A}$ , $V_{GS} = 10\text{ V}$ , $R_G = 10\ \Omega$ , $R_L = 100\ \Omega$	$t_{d(off)}$	-	22	-	ns
Turn-Off Fall Time at $V_{DD} = 50\text{ V}$ , $I_D = 0.5\text{ A}$ , $V_{GS} = 10\text{ V}$ , $R_G = 10\ \Omega$ , $R_L = 100\ \Omega$	$t_f$	-	15	-	ns
Drain-Source Diode Forward Voltage at $V_{GS} = 0\text{ V}$ , $I_S = 1\text{ A}$	$V_{SD}$	-	-	1.2	V



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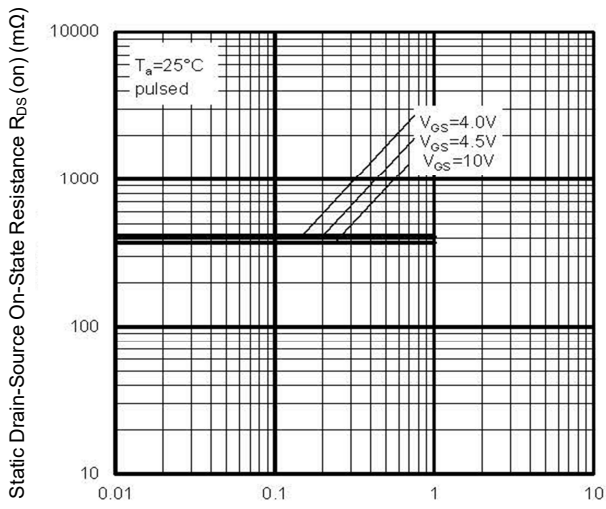


Figure 1. Drain-Current  $I_D$  (A)

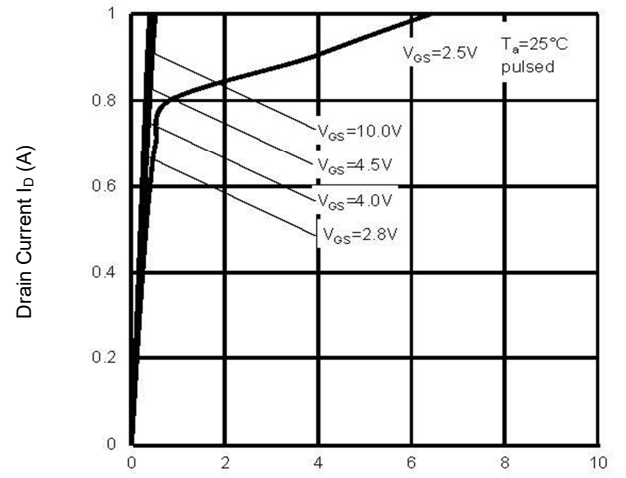


Figure 2. Drain-Source Voltage  $V_{DS}$  (V)

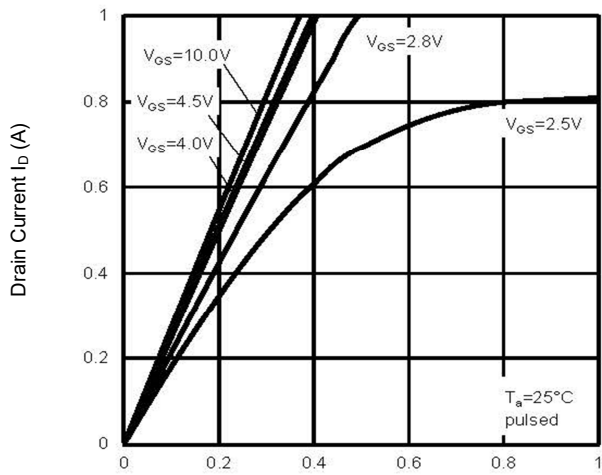


Figure 3. Drain-Source Voltage  $V_{DS}$  (V)

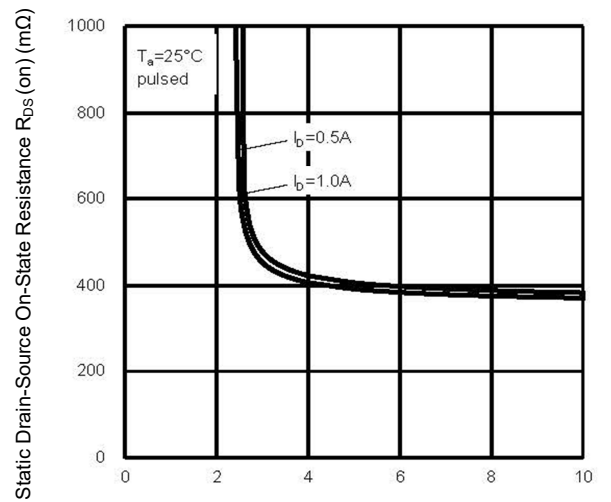
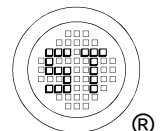


Figure 4. Gate-Source Voltage  $V_{GS}$  (V)

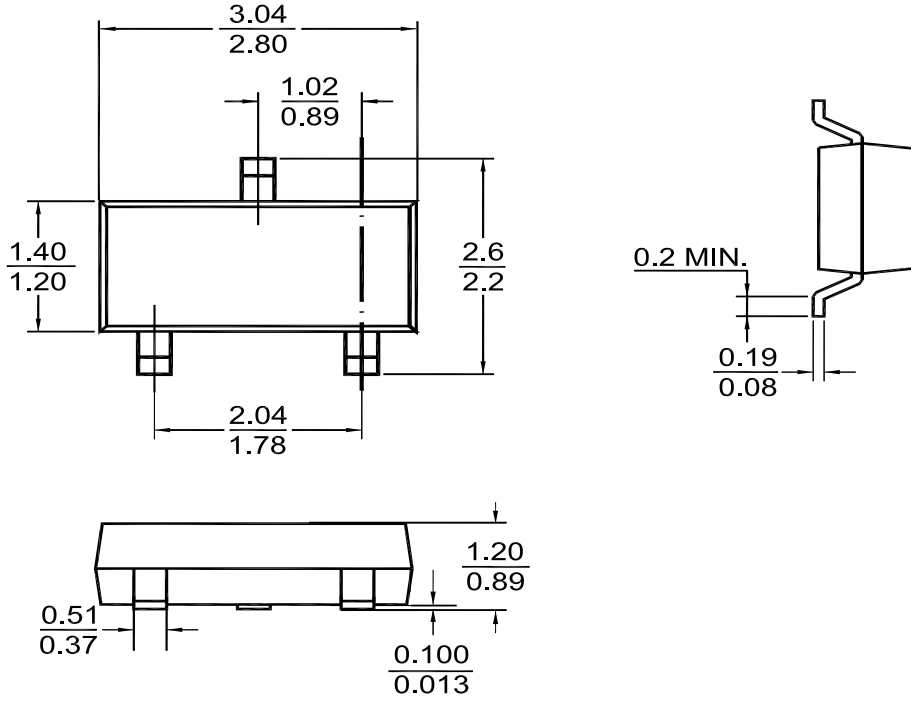


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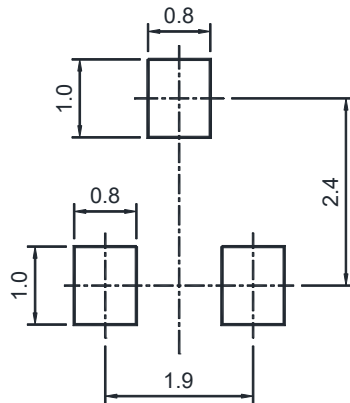
## PACKAGE OUTLINE

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

