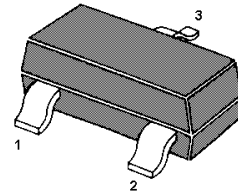


MMFTN501-HAF

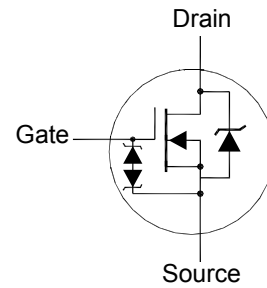
Silicon N-Channel MOSFET

Features

- Halogen and Antimony Free(HAF), RoHS compliant



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_{DSX}	600	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current	I_D	30	mA
Peak Drain Current ¹⁾	I_{DM}	120	mA
Maximum Continuous Source Current	I_S	25	mA
Maximum Pulse Source Current	I_{SM}	100	mA
Gate-Source ESD(HBM-C= 100 pF,R= 1.5 k Ω)	$V_{ESD(G-S)}$	300	V
Total Power Dissipation	P_D	0.5	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

¹⁾ Reprtitive rating;pulse width limited by maximun junction temperature

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance from Juntion to Ambient	$R_{\theta JA}$	250	$^\circ\text{C/W}$

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

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage at $V_{GS} = -5\text{ V}$, $I_D = 250\text{ }\mu\text{A}$	V_{DSX}	600	-	-	V
Gate-Source Breakdown Voltage at $I_{GS} = \pm 1\text{ mA}$ (Open Drain)	V_{GSO}	30	-	-	V
Gate-Source Threshold Voltage at $V_{DS} = 3\text{ V}$, $I_D = 8\text{ }\mu\text{A}$	V_{GSth}	- 2.7	-	- 1	V
Drain-Source Diode Forward Voltage at $I_F = 16\text{ mA}$, $V_{GS} = -5\text{ V}$	V_{SD}	-	-	1.2	V
Drain-Source On-State Current at $V_{DS} = 25\text{ V}$, $V_{GS} = 0\text{ V}$	I_{DSS}	12	-	-	mA
Gate-Source Leakage Current at $V_{GS} = \pm 20\text{ V}$	I_{GSS}	-	-	± 10	μA
Drain-Source Off-State Current at $V_{DS} = 600\text{ V}$, $V_{GS} = -5\text{ V}$	$I_{D(off)}$	-	-	0.1	μA
Drain-Source On-State Resistance at $V_{GS} = 0\text{ V}$, $I_D = 3\text{ mA}$ at $V_{GS} = 10\text{ V}$, $I_D = 16\text{ mA}$	$R_{DS(ON)}$	- -	- -	700 800	Ω
Forward Transconductance at $V_{DS} = 50\text{ V}$, $I_D = 10\text{ mA}$	g_{FS}	8	-	-	mS
Input Capacitance at $V_{GS} = -5\text{ V}$, $V_{DS} = 25\text{ V}$, $f = 1\text{ MHz}$	C_{iss}	-	50	-	pF
Output Capacitance at $V_{GS} = -5\text{ V}$, $V_{DS} = 25\text{ V}$, $f = 1\text{ MHz}$	C_{oss}	-	4.53	-	pF
Reverse Transfer Capacitance at $V_{GS} = -5\text{ V}$, $V_{DS} = 25\text{ V}$, $f = 1\text{ MHz}$	C_{rss}	-	1.08	-	pF
Turn-On Delay Time at $V_{DD} = 300\text{ V}$, $I_D = 10\text{ mA}$, $V_{GS} = -5 \dots 7\text{ V}$, $R_G = 6\text{ }\Omega$	$t_{d(on)}$	-	9.9	-	ns
Turn-On Rise Time at $V_{DD} = 300\text{ V}$, $I_D = 10\text{ mA}$, $V_{GS} = -5 \dots 7\text{ V}$, $R_G = 6\text{ }\Omega$	t_r	-	55.8	-	ns
Turn-Off Delay Time at $V_{DD} = 300\text{ V}$, $I_D = 10\text{ mA}$, $V_{GS} = -5 \dots 7\text{ V}$, $R_G = 6\text{ }\Omega$	$t_{d(off)}$	-	56.4	-	ns
Turn-Off Fall Time at $V_{DD} = 300\text{ V}$, $I_D = 10\text{ mA}$, $V_{GS} = -5 \dots 7\text{ V}$, $R_G = 6\text{ }\Omega$	t_f	-	136	-	ns

TOP DYNAMIC