

MMFTN3019E

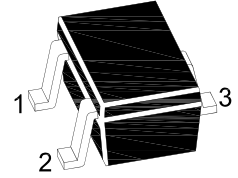
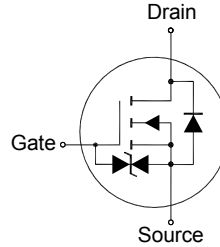
N-Channel Field Effect Transistor

Applications

- Interfacing, switching

Features

- Low on-resistance
- Fast switching speed
- Low voltage drive makes this device ideal for portable equipment
- Drive circuits can be simple
- Parallel use is easy



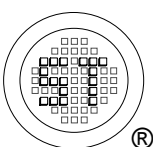
1.Gate 2.Source 3.Drain
SOT-523 Plastic Package

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current - Continuous	I_D	± 100	mA
Drain Current - Pulsed	I_{DP}	± 400 ¹⁾	mA
Total Power Dissipation	P_{tot}	150 ²⁾	mW
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

¹⁾ $P_w \leq 10\text{ }\mu\text{s}$, Duty cycle $\leq 1\%$

²⁾ With each pin mounted on the recommended lands



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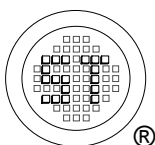


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Characteristics at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage at $I_D = 10\text{ }\mu\text{A}$	$V_{(BR)DSS}$	30	-	-	V
Zero Gate Voltage Drain Current at $V_{DS} = 30\text{ V}$	I_{DSS}	-	-	1	μA
Gate-source Leakage at $V_{GS} = \pm 20\text{ V}$	I_{GSS}	-	-	± 1	μA
Gate-Source Threshold Voltage at $V_{DS} = 3\text{ V}$, $I_D = 100\text{ }\mu\text{A}$	$V_{GS(th)}$	0.8	-	1.5	V
Static Drain-Source On-Resistance at $V_{GS} = 4\text{ V}$, $I_D = 10\text{ mA}$ at $V_{GS} = 2.5\text{ V}$, $I_D = 1\text{ mA}$	$R_{DS(on)}$	-	-	8 13	Ω
Forward transfer admittance at $V_{DS} = 3\text{ V}$, $I_D = 10\text{ mA}$	$ y_{fs} $	20	-	-	ms
Input Capacitance at $V_{DS} = 5\text{ V}$, $f = 1\text{ MHz}$	C_{iss}	-	13	-	pF
Output Capacitance at $V_{DS} = 5\text{ V}$, $f = 1\text{ MHz}$	C_{oss}	-	9	-	pF
Reverse Transfer Capacitance at $V_{DS} = 5\text{ V}$, $f = 1\text{ MHz}$	C_{rss}	-	4	-	pF
Turn-On delay Time at $V_{DD} = 5\text{ V}$, $I_D = 10\text{ mA}$, $V_{GS} = 5\text{ V}$, $R_L = 500\text{ }\Omega$, $R_G = 10\text{ }\Omega$	$t_{d(on)}$	-	15	-	ns
Turn-Off Delay Time at $V_{DD} = 5\text{ V}$, $I_D = 10\text{ mA}$, $V_{GS} = 5\text{ V}$, $R_L = 500\text{ }\Omega$, $R_G = 10\text{ }\Omega$	$t_{d(off)}$	-	80	-	ns
Rise Time at $V_{DD} = 5\text{ V}$, $I_D = 10\text{ mA}$, $V_{GS} = 5\text{ V}$, $R_L = 500\text{ }\Omega$, $R_G = 10\text{ }\Omega$	t_r	-	35	-	ns
Turn-off delay time at $V_{DD} = 5\text{ V}$, $I_D = 10\text{ mA}$, $V_{GS} = 5\text{ V}$, $R_L = 500\text{ }\Omega$, $R_G = 10\text{ }\Omega$	t_f	-	80	-	ns



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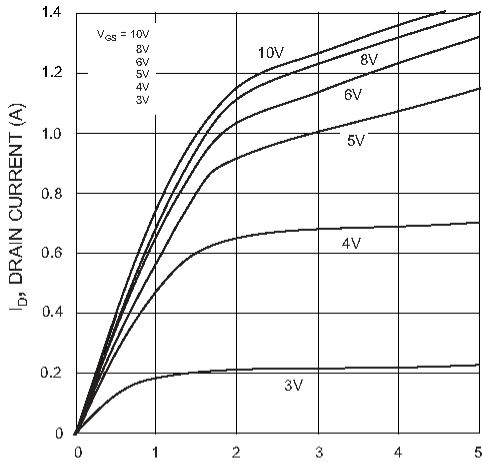


Fig. 1 Typical Output Characteristics

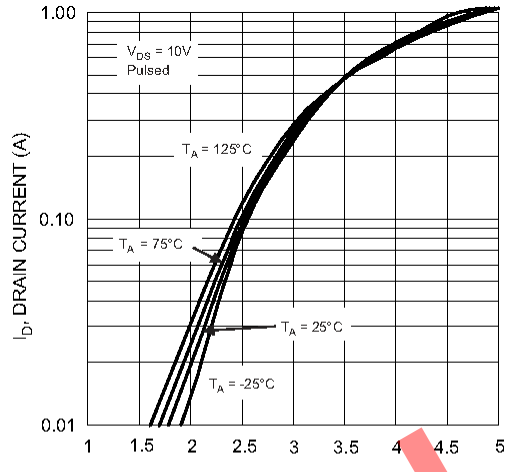


Fig. 2 Typical Transfer Characteristics

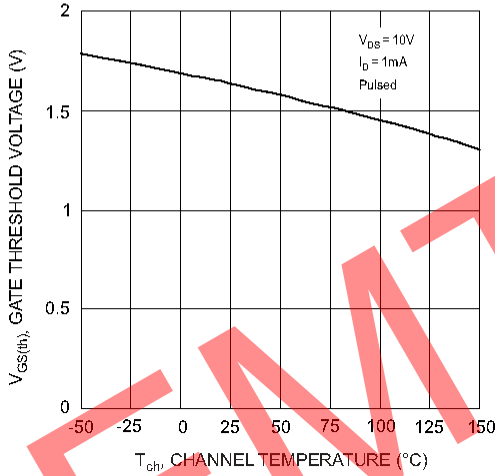


Fig. 3 Gate Threshold Voltage vs. Channel Temperature

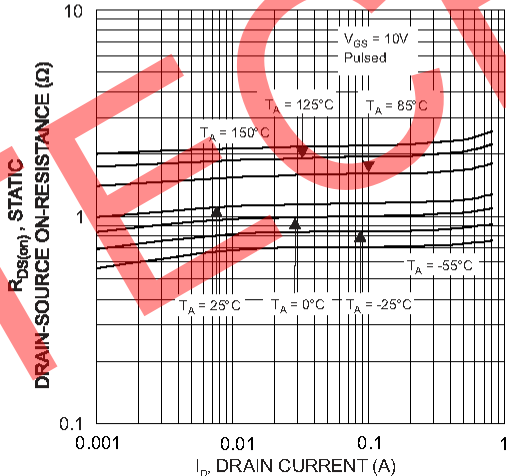


Fig. 4 Static Drain-Source On-Resistance vs. Drain Current

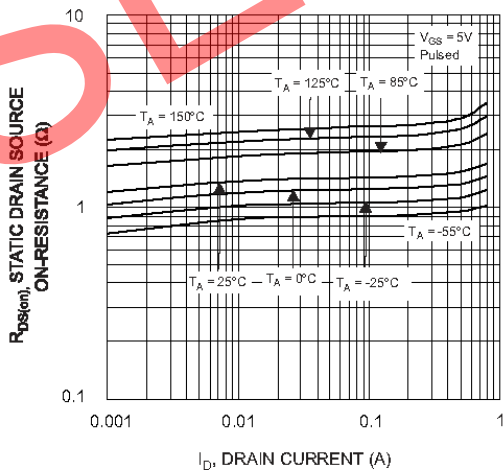


Fig. 5 Static Drain-Source On-Resistance vs. Drain Current

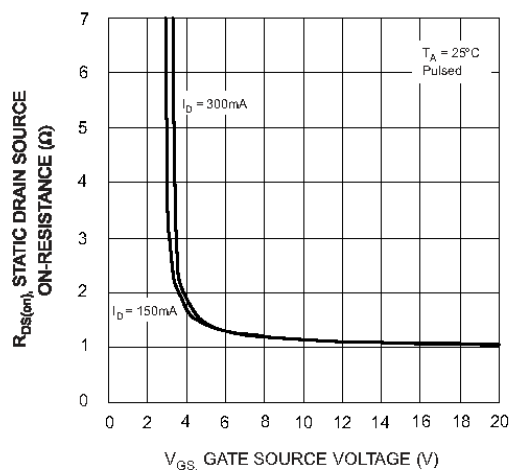
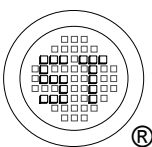


Fig. 6 Static Drain-Source On-Resistance vs. Gate-Source Voltage



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