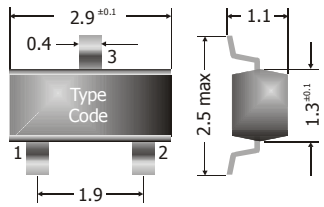
MMFTN138

N **N-Channel Logic Level Enhancement Mode Field Effect Transistor**
N-Kanal Logikpegel Feldeffekt-Transistor - Anreicherungstyp **N**

Version 2011-01-24



Dimensions - Maße [mm]
1 = G 2 = S 3 = D

Power dissipation – Verlustleistung	360 mW
Plastic case Kunststoffgehäuse	SOT-23 (TO-236)
Weight approx. – Gewicht ca.	0.01 g
Plastic material has UL classification 94V-0 Gehäusematerial UL94V-0 klassifiziert	
Standard packaging taped and reeled Standard Lieferform gegurtet auf Rolle	

Maximum ratings (T_A = 25°C) **Grenzwerte (T_A = 25°C)**

			MMFTN138
Drain-Source-voltage – Drain-Source-Spannung		V_{DSS}	50 V
Drain-Gate-voltage ($R_{GS} \leq 20$ KΩ) Drain-Gate-Spannung		V_{DGR}	50 V
Gate-Source-voltage Gate-Source-Spannung	dc $t_P < 50$ µs	V_{GSS} V_{GSS}	± 20 V ± 40 V
Power dissipation – Verlustleistung		P_{tot}	360 mW
Drain current continuos – Drainstrom (dc)		I_D	220 mA
Peak Drain current – Drain-Spitzenstrom		I_{DM}	880 mA
Junction temperature – Sperrschichttemperatur Storage temperature – Lagerungstemperatur		T_j T_S	150°C -55...+150°C

Characteristics (T_j = 25°C) **Kennwerte (T_j = 25°C)**

		Min.	Typ.	Max.
Drain-Source breakdown voltage – Drain-Source-Durchbruchspannung I_D = 250 µA	$V_{(BR)DSS}$	50 V		
Drain-Source leakage current – Drain-Source-Leckstrom V_{DS} = 50 V V_{DS} = 30 V	I_{DSS}			500 nA 100 nA
Gate-Source leakage current – Gate-Source-Leckstrom V_{GS} = ± 20 V	I_{GSS}			± 100 nA
Gate-Source threshold voltage – Gate-Source Schwellspannung V_{GS} = V_{DS}, I_D = 1 mA	$V_{GS(th)}$	0.8 V		1.6 V
Drain-Source on-state resistance – Drain-Source Einschaltwiderstand V_{GS} = 10 V, I_D = 220 mA V_{GS} = 4.5 V, I_D = 220 mA	$R_{DS(on)}$			3.5 Ω 6 Ω
Forward Transconductance – Übertragungssteilheit V_{DS} = 10 V, I_D = 220 mA	g_{FS}	0.12 S		
Input Capacitance – Eingangskapazität V_{DS} = 25 V, f = 1 MHz	C_{iss}		60 pF	
Output Capacitance – Ausgangskapazität V_{DS} = 25 V, f = 1 MHz	C_{oss}		25 pF	
Reverse Transfer Capacitance – Rückwirkungskapazität V_{DS} = 25 V, f = 1 MHz	C_{rss}		10 pF	
Turn-On Delay Time – Einschaltverzögerung V_{DD} = 30 V, I_D = 290 mA, V_{GS} = 10 V, R_G = 50 Ω	$t_{d(on)}$			8 ns
Turn-On Rise Time – Anstiegszeit V_{DD} = 30 V, I_D = 290 mA, V_{GS} = 10 V, R_G = 50 Ω	t_r			12 ns
Turn-Off Delay Time – Ausschaltverzögerung V_{DD} = 30 V, I_D = 290 mA, V_{GS} = 10 V, R_G = 50 Ω	$t_{d(off)}$			16 ns
Turn-Off Fall Time – Abfallzeit V_{DD} = 30 V, I_D = 290 mA, V_{GS} = 10 V, R_G = 50 Ω	t_f			22 ns
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft	R_{thA}	< 350 K/W		

Drain-Source Diode

Maximum Ratings and Characteristics (T_j = 25°C) **Grenz- und Kennwerte (T_j = 25°C)**

		Min.	Typ.	Max.
Maximum Continuos Source Current	I_S			220 mA
Maximum Pulse Source Current	I_{SM}			880 mA
Drain-Source Diode Forward Voltage I_S = 440 mA	V_{GD}			1.4 V