NTE2910
N–Channel Field Effect Transistor
Switch, TO18 Type Package

Features:

- Fast Switching, $t_{ON} \leq 15ns$

Absolute Maximum Ratings: (T_A = +25°C, Note 1 unless otherwise specified)

Maximum Gate–to–Drain or Source . . . . –40V
Maximum Gate Current 50mA
Maximum Continuous Power Dissipation 1800mW
Operating Junction Temperature Range . . . . –55° to +200°C
Storage Temperature Range . . . . –65° to +200°C

Note 1. Absolute Maximum Ratings are limiting values above which serviceability may be impaired.

Electrical Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Gate–to–Source Breakdown Voltage	BV_{GSS}	$I_G = -1\mu A$, $V_{DS} = 0V$	–40	–	–	V
Gate–to–Source Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 20V$, $I_D = 1nA$	–0.5	–	–3.0	V
Gate–to–Source Forward Voltage	$V_{GS(F)}$	$I_G = 1mAm$, $V_{DS} = 0V$	–	0.7	1.0	V
Drain–to–Source ON Voltage	$V_{DS(on)}$	$V_{GS} = 0V$, $I_D = 3mA$	–	0.25	0.4	V
Drain–to–Source Saturation Current	I_{DSS}	$V_{DS} = 20V$, $V_{GS} = 0V$, Note 2	5	–	30	mA
Gate Leakage Current	I_{GSS}	$V_{GS} = -20V$, $V_{DS} = 0V$	–	–5	–100	pA
Gate Operating Current	I_G	$V_{DG} = 15V$, $I_D = 10mA$	–	–5	–	pA
Drain Cutoff Current	$I_{D(off)}$	$V_{DS} = 20V$, $V_{GS} = -5V$	–	5	100	pA
Drain–to–Source ON Resistance	$r_{DS(on)}$	$V_{GS} = 0V$, $I_D = 1mA$	–	–	100	Ω

Note 2. Pule Test: PW $\leq$ 300μs, Duty Cycle $\leq$ 3%.

Electrical Characteristics (Cont'd): (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Dynamic Characteristics						
Forward Transconductance	g_{fs}	V_{DS} = 20V, I_D = 1mA, f = 1kHz	–	6	–	mS
Output Conductance	g_{os}	V_{DS} = 20V, I_D = 1mA, f = 1kHz	–	25	–	µS
Drain–to–Source ON Resistance	$r_{DS(on)}$	V_{GS} = 0V, I_D = 0A, f = 1kHz	–	–	100	Ω
Input Capacitance	C_{iss}	V_{DS} = 20V, V_{GS} = 0V, f = 1MHz	–	12	14	pF
Reverse Transfer Capacitance	C_{rss}	V_{DS} = 0V, V_{GS} = –5V, f = 1MHz	–	3.3	3.5	pF
Equivalent Input Noise Voltage	e_n	V_{DS} = 10V, I_D = 10mA, f = 1kHz	–	3	–	nV/√Hz
Switching Characteristics						
Turn–On Time	$t_{d(on)}$	V_{DD} = 10V, $V_{GS(H)}$ = 0V	–	2	15	ns
	t_r		–	2	5	ns
Turn–Off Time	$t_{d(off)}$		–	6	50	ns
	t_f		–	13	30	ns