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RoHS
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NTE2902
N-Channel Silicon Junction Field Effect Transistor

Description:
The NTE2902 is a field effect transistor in a TO92 type package designed for use in VHF/UHF amplifier applications.

Absolute Maximum Ratings: (Note 1)
Drain-Source Voltage, V_{DS} 25V
Gate-Source Voltage, V_{GS} 25V
Forward Gate Current, I_{GF} 10mA
Total Device Dissipation (T_A = +25°C), P_D 350mW
Derate Above +25°C . . . . 2.8mW/°C
Operating Junction Temperature Range, T_J . . . . -65 ° to +125°C
Storage Temperature Range, T_{stg} . . . . -65 ° to +150°C

Note 1. Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

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

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
OFF Characteristics							
Gate-Source Breakdown Voltage	$V_{(BR)GSS}$	I_G = 1.0μA, V_{DS} = 0		-25	-	-	V
Gate Reverse Current	I_{GSS}	V_{GS} = 15V, V_{DS} = 0	T_A = +25°C	-	-	-1.0	nA
			T_A = +125°C	-	-	-1.0	μA
Gate-Source Cutoff Voltage	$V_{GS(off)}$	V_{DS} = 10V, I_D = 1nA		-2.0	-	-6.5	V
ON Characteristics							
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS} = 10V, V_{GS} = 0, Note 2		24	-	60	mA
Gate-Source Forward Voltage	$V_{GS(f)}$	V_{DS} = 0, I_G = 1mA		-	-	1.0	V

Note 2. Pulse test: Pulse Width ≤ 300μs, Duty Cycle ≤ 3%.

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

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Small-Signal Characteristics							
Common- Source Input Conductance	$Re(y_{is})$	V_{DS} = 10V, I_D = 10mA	f = 100MHz	-	0.5	-	mmhos
Common-Source Output Conductance	$Re(y_{os})$		f = 100MHz	-	0.25	-	mmhos
	g_{os}		f = 1kHz	-	-	250	µmhos
Common-Gate Power Gain	G_{pg}		f = 100MHz	-	16	-	dB
Common-Source Forward Transconductance	$Re(y_{fs})$		f = 100MHz	-	12	-	mmhos
	g_{fs}		f = 1kHz	8000	-	18000	µmhos
Common-Gate Input Conductance	$Re(y_{ig})$		f = 100MHz	-	12	-	mmhos
Common-Gate Forward Transconductance	g_{fg}	V_{DS} = 10V, I_D = 10mA, f = 1kHz		-	150	-	µmhos
Common-Gate Output Conductance	g_{og}			-	150	-	µmhos
Gate-Drain Capacitance	C_{gd}	V_{DS} = 0, V_{GS} = -10V, f = 1MHz		-	1.8	2.5	pF
Gate-Source Capacitance	C_{gs}			-	4.3	5.0	pF
Functional Characteristics							
Equivalent Short-Circuit Input Noise Voltage	$\bar{e}_n$	V_{DS} = 10V, I_D = 10mA, f = 100Hz		-	10	-	$nV/\sqrt{Hz}$