2N4220, 2N4220A, 2N4221, 2N4221A, 2N4222, 2N4222A

N-Channel Silicon Junction Field-Effect Transistor

- Mixers
- Oscillators
- VHF Amplifiers
- Small Signal Amplifiers

Absolute maximum ratings at T_A = 25°C

Reverse Gate Source & Reverse Gate Drain Voltage	– 30 V
Continuous Forward Gate Current	10 mA
Continuous Device Power Dissipation	300 mW
Power Derating (to 150 °C)	2 mW/°C

At 25°C free air temperature: Static Electrical Characteristics		2N4220 2N4220A NJ16 Min	2N4220 2N4220A NJ16 Max	2N4221 2N4221A NJ16 Min	2N4221 2N4221A NJ16 Max	2N4222 2N4222A NJ32 Min	2N4222 2N4222A NJ32 Max	Process Unit	Process Test Conditions	
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	– 30		– 30		– 30		V	I_G = – 1µA, V_{DS} = ØV	
Gate Reverse Current	I_{GSS}		– 0.1		– 0.1		– 0.1	nA	V_{GS} = – 15V, V_{DS} = ØV	
			– 0.1		– 0.1		– 0.1	µA	V_{GS} = – 15V, V_{DS} = ØV	T_A = 150°C
Gate Source Voltage	V_{GS}	– 0.5 (50)	– 2.5 (50)	– 1 (200)	– 5 (200)	– 2 (500)	– 6 (500)	V µA	V_{DS} = 15V, I_D = ( )	
Gate Source Cutoff Voltage	$V_{GS(OFF)}$		– 4		– 6		– 8	V	V_{DS} = 15V, I_D = 0.1 nA	
Drain Saturation Current (Pulsed)	I_{DSS}	0.5	3	2	6	5	15	mA	V_{DS} = 15V, V_{GS} = ØV	
Dynamic Electrical Characteristics										
Common Source Forward Transconductance	g_{fs}	1000	4000	2000	5000	2500	6000	µS	V_{DS} = 15V, V_{GS} = ØV	f = 1 kHz
Common Source Forward Transmittance	$\lvert Y_{fs} \rvert$	750		750		750		µS	V_{DS} = 15V, V_{GS} = ØV	f = 100 MHz
Common Source Output Conductance	g_{os}		10		20		40	µS	V_{DS} = 15V, V_{GS} = ØV	f = 1 kHz
Common Source Input Capacitance	C_{iss}		6		6		6	pF	V_{DS} = 15V, V_{GS} = ØV	f = 1 MHz
Common Source Reverse Transfer Capacitance	C_{rss}		2		2		2	pF	V_{DS} = 15V, V_{GS} = ØV	f = 1 MHz
Noise Figure **2N4220A, 2N4221A, 2N4222A**	NF		2.5		2.5		2.5	dB	V_{DS} = 15V, V_{GS} = ØV R_G = 1 MΩ	f = 100 MHz

TO-72 Package
Dimensions in Inches (mm)

Pin Configuration
1 Source, 2 Drain, 3 Gate, 4 Case

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