NJ32 Process

Silicon Junction Field-Effect Transistor

- General Purpose Amplifier

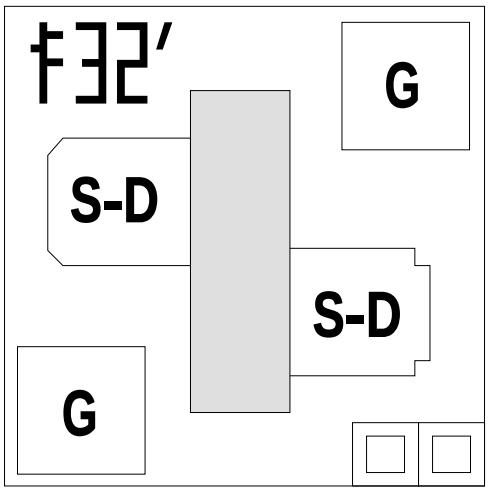
Absolute maximum ratings at TA = 25°C

Gate Current, Ig	10 mA
Operating Junction Temperature, Tj	+150°C
Storage Temperature, Ts	– 65°C to +175°C

Devices in this Databook based on the NJ32 Process.

Datasheet

2N3821, 2N3822
2N3823, 2N3824
2N4222, 2N4222A



Die Size = 0.018" X 0.018"
All Bond Pads = 0.004" Sq.
Substrate is also Gate.

At 25°C free air temperature:		NJ32 Process					
Static Electrical Characteristics		**Min**	**Typ**	**Max**	**Unit**	**Test Conditions**	
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	– 25	– 50		V	I_G = – 1 µA, V_{DS} = ØV	
Reverse Gate Leakage Current	I_{GSS}		– 10	– 100	pA	V_{GS} = – 15V, V_{DS} = ØV	
Drain Saturation Current (Pulsed)	I_{DSS}	1		22	mA	V_{DS} = 15V, V_{GS} = ØV	
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	– 0.5		– 6	V	V_{DS} = 15V, I_D = 1 nA	
Dynamic Electrical Characteristics							
Forward Transconductance	g_{fs}		4		mS	V_{DS} = 15V, V_{GS} = ØV	f = 1 kHz
Input Capacitance	C_{iss}		6	7.0	pF	V_{DS} = 15V, V_{GS} = ØV	f = 1 MHz
Feedback Capacitance	C_{rss}		1.3	3	pF	V_{DS} = 15V, V_{GS} = ØV	f = 1 MHz
Equivalent Noise Voltage	$\bar{e}_N$		7		nV/√HZ	V_{DS} = 10V, I_D = 5 mA	f = 1 kHz

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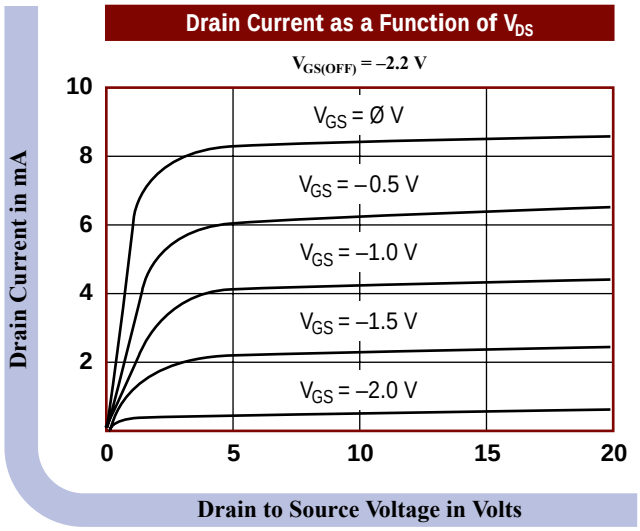
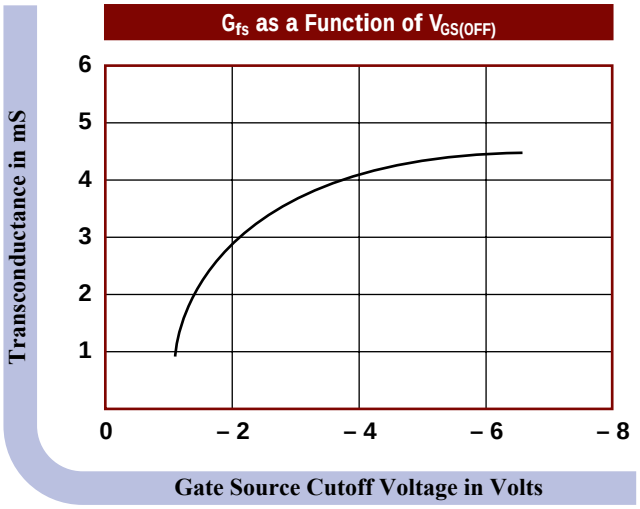
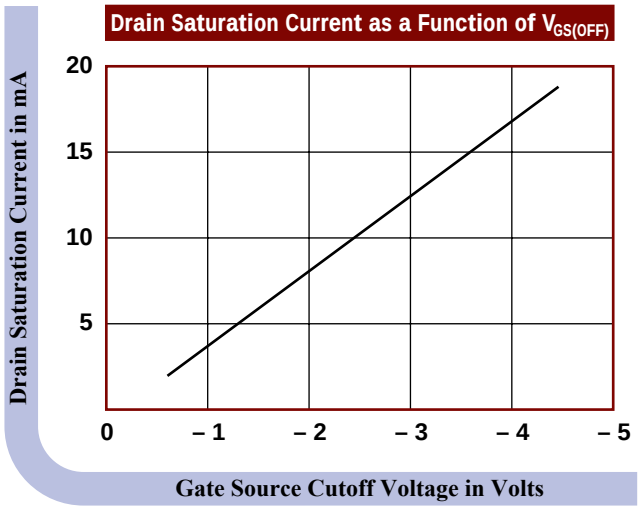
Drain Current as a Function of V_{DS}



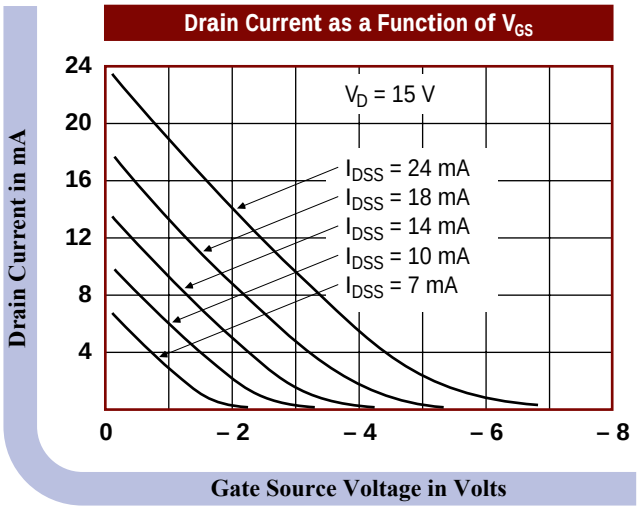
G_{fs} as a Function of $V_{GS(OFF)}$



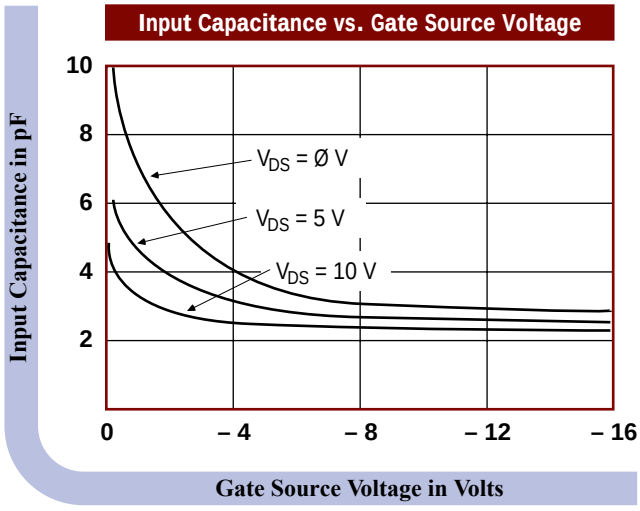
Drain Saturation Current as a Function of $V_{GS(OFF)}$



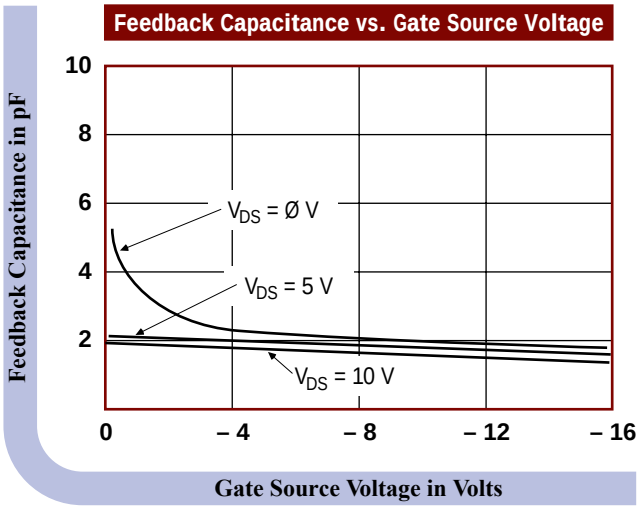
Drain Current as a Function of V_{GS}



Input Capacitance vs. Gate Source Voltage



Feedback Capacitance vs. Gate Source Voltage



PJ32 Process

Silicon Junction Field-Effect Transistor

- General Purpose Amplifier

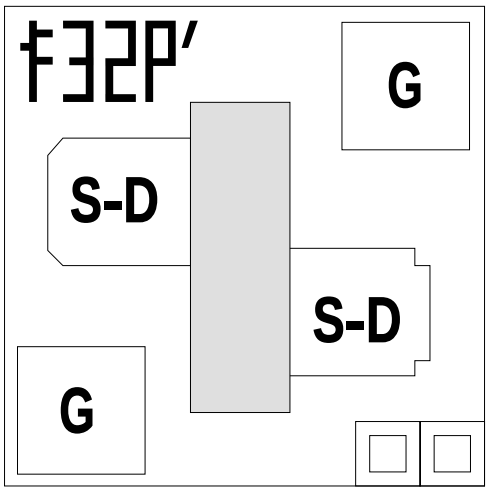
Absolute maximum ratings at TA = 25°C

Gate Current, Ig	10 mA
Operating Junction Temperature, Tj	+150°C
Storage Temperature, Ts	– 65°C to +175°C

Devices in this Databook based on the PJ32 Process.

Datasheet

2N5020, 2N5021
2N5460, 2N5461
2N5462



Die Size = 0.018" X 0.018"
All Bond Pads = 0.004" Sq.
Substrate is also Gate.

At 25°C free air temperature:		PJ32 Process					
Static Electrical Characteristics		**Min**	**Typ**	**Max**	**Unit**	**Test Conditions**	
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	30	50		V	I_G = 1 µA, V_{DS} = Ø	
Reverse Gate Leakage Current	I_{GSS}		1	2	nA	V_{GS} = 15V, V_{DS} = Ø	
Drain Saturation Current (Pulsed)	I_{DSS}	– 1		– 15	mA	V_{DS} = – 15V, V_{GS} = Ø	
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	0.5		7	V	V_{DS} = – 15V, I_D = 1 nA	
Dynamic Electrical Characteristics							
Forward Transconductance	g_{fs}		2.5		mS	V_{DS} = – 15V, V_{GS} = Ø	f = 1 kHz
Input Capacitance	C_{iss}		3.2		pF	V_{DS} = Ø, V_{GS} = 10	f = 1 MHz
Feedback Capacitance	C_{rss}		1.7		pF	V_{DS} = Ø, V_{GS} = 10	f = 1 MHz
Equivalent Noise Voltage	$\bar{e}_N$		10		nV/√HZ	V_{DS} = 10V, V_{GS} = Ø	f = 1 Hz

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