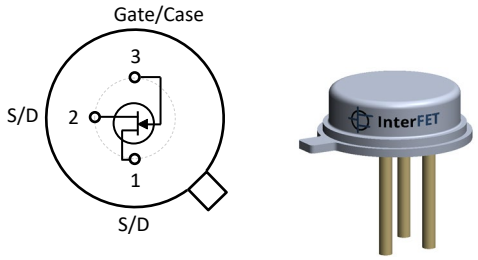
2N6550 N-Channel JFET
JAN Equivalent Parts

Features

- InterFET N0450L Geometry
- Low noise: 1.0 nV/√Hz typical
- High gain: 22mS typical
- Low gate leakage: 750fA typical @10V
- Low $V_{GS(OFF)}$: -1.0 typical
- Typical I_{DSS}: 12mA
- Typical BV_{GSS}: -35V
- High radiation tolerance
- RoHS, REACH, CMR compliant
- Custom test and binning options available
- Edge case SPICE modeling: InterFET SPICE

TO-46 Bottom View



Built to MIL-PRF-19500

(Source and Drain pins are interchangeable)

InterFET Similar Parts

- IF4500

InterFET Dual Parts

- IFN860

Applications

- General: Amplifiers; Switches; Voltage regulators;
- Oscillators; Signal mixers; Noise generators
- Military/Aero: Radar; Communications; Satellites; Missiles guidance; Hydrophone Pre-Amps
- Medical: Medical imaging systems; Medical monitors and recorders; Ultrasound equipment
- Audio: Tone control circuits; Headphone amplifiers; Audio filters; Electret Microphone

Description

The -20V InterFET 2N6550 is targeted for sensitive amplifier stages for mid-frequencies designs. The 2N6550 has a cutoff voltage of less than 3.0V ideal for low-level power supplies. The TO-46 package is hermetically sealed and suitable for military applications.

Ordering Information Custom Part and Binning Options Available

Part Number	Description	Case	Packaging
2N6550JANequiv	JAN equivalent	TO-46	Bulk
2N6550JANTXequiv	JANTX equivalent	TO-46	Bulk
2N6550JANTXVequiv	JANTXV equivalent	TO-46	Bulk
2N6550JANSequiv	JANS equivalent	TO-46	Bulk

Electrical Characteristics

Maximum Ratings (@ T_A = 25°C, Unless otherwise specified)

Parameters		TO-46	Unit
V_{RGS}	Reverse Gate Source and Gate Drain Voltage	-20	V
I_{FG}	Continuous Forward Gate Current	50	mA
P_D	Continuous Device Power Dissipation[1]	500	mW
P	Power Derating[1]	3.3	mW/°C
T_J	Operating Junction Temperature	-65 to 175	°C
T_{STG}	Storage Temperature	-65 to 175	°C

[1] Thermal power dissipation and derating values obtained with gate pin (substrate) thermally connected to pad and/or internal layer.

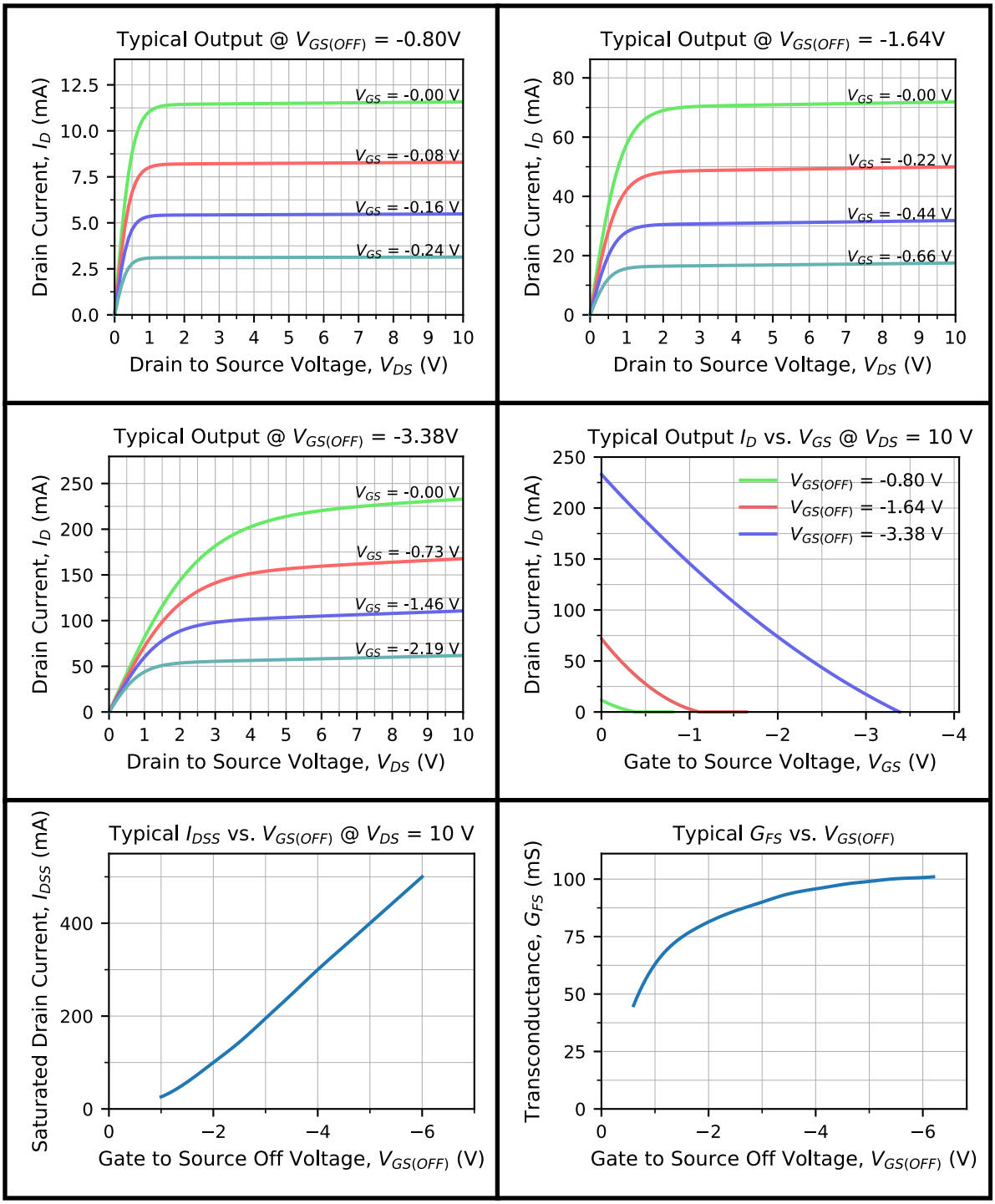
Static Characteristics (@ TA = 25°C, Unless otherwise specified)

Parameters		Conditions	2N6550 Min	2N6550 Typ	2N6550 Max	Unit
$V_{(BR)GSS}$	Gate to Source Breakdown Voltage	V_{DS} = 0V, I_G = 10µA	-20			V
I_{GSS}	Gate to Source Reverse Current	V_{GS} = -10V, V_{DS} = 0V, T_A = 25°C V_{GS} = -10V, V_{DS} = 0V, T_A = 85°C			-3 -0.1	nA µA
$V_{GS(OFF)}$	Gate to Source Cutoff Voltage	V_{DS} = 10V, I_D = 0.1mA	-0.3		-3	V
I_{DSS}	Drain to Source Saturation Current	V_{GS} = 0V, V_{DS} = 10V (Pulsed)	10	100	250	mA

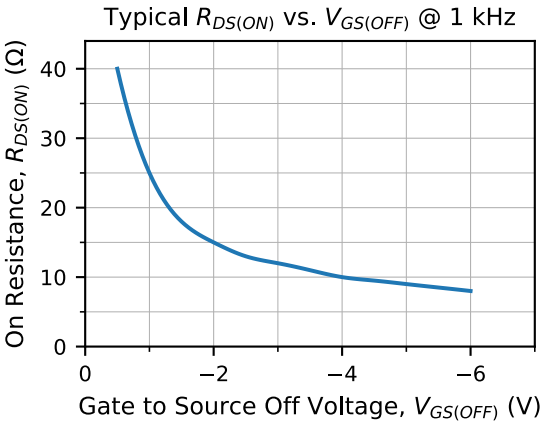
Dynamic Characteristics (@ TA = 25°C, Unless otherwise specified)

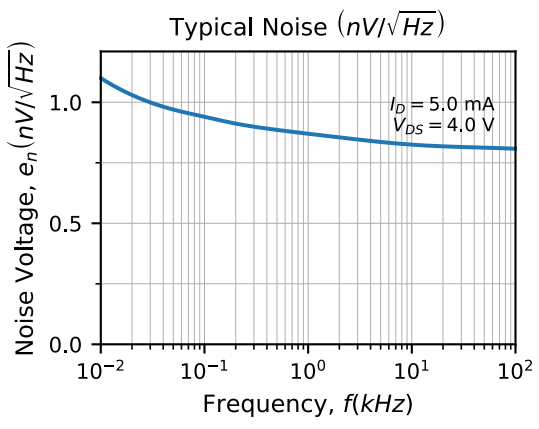
Parameters		Conditions	2N6550 Min	2N6550 Typ	2N6550 Max	Unit
G_{FS}	Forward Transconductance	V_{DS} = 10V, I_D = 10mA, f = 1kHz	25		150	mS
G_{OS}	Output Conductance	V_{DS} = 10V, I_D = 10mA, f = 1kHz			150	µS
C_{iss}	Input Capacitance	V_{DS} = 10V, I_D = 10mA, f = 140kHz		30	35	pF
C_{rss}	Reverse Transfer Capacitance	V_{DS} = 10V, f = 140kHz		10	20	pF
e_n	Equivalent Input Noise Voltage	V_{DS} = 5V, I_D = 10mA, f = 10Hz V_{DS} = 5V, I_D = 10mA, f = 1kHz		6 1.4	10 2	nV/√Hz
$e_{n\ Total}$	Equivalent Total Input Noise Voltage	V_{DS} = 5V, I_D = 10mA, f = 10kHz to 20kHz		0.4	0.6	µVrms
i_n	Equivalent Input Noise Current	R_S < 100 kΩ, f = 1kHz		0.1		pA/√Hz

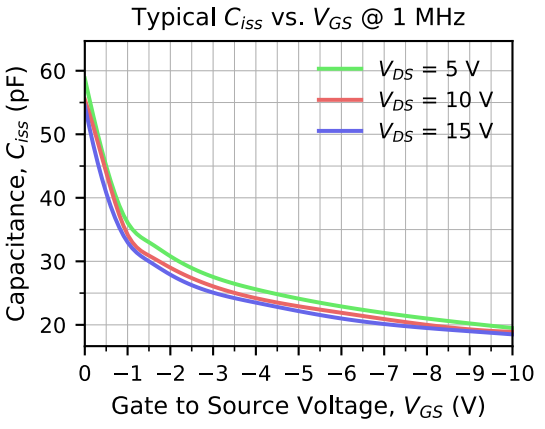
Typical 2N6550 Characteristics

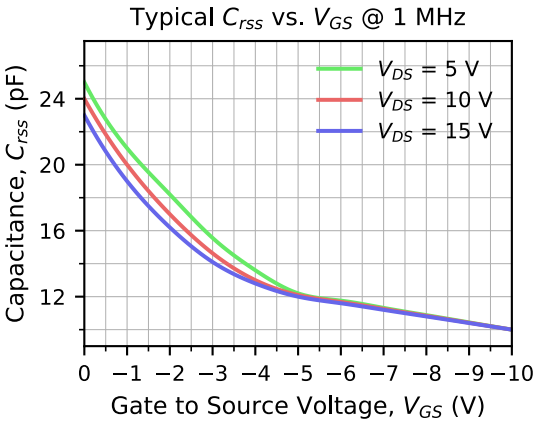


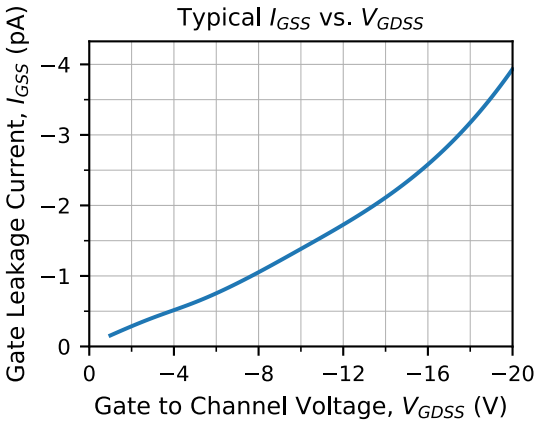
Typical 2N6550 Characteristics (Continued)





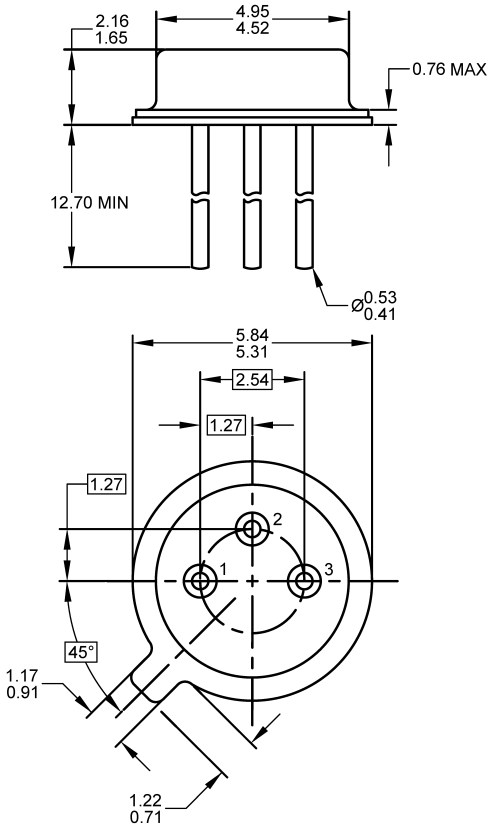






TO-46 Mechanical and Layout Data

Package Outline Data



1. All linear dimensions are in millimeters.
2. Package weight approximately 0.23 grams
3. Bulk product is shipped in standard ESD shipping material
4. Refer to JEDEC standards for additional information.

Compliance and Legal

Environment

InterFET parts follow the latest RoHS Compliance, REACH Compliance, Proposition 65 Statement, TSCA Statement, and Chemical Disposal and Waste Mitigation requirement and guidelines. For more on InterFET's Environmental Commitment please visit www.InterFET.com/environmental/.

Package materials

Parameters				Metal Case
Alloy				Kovar
Cu				
Fe				53%
Zn				
P				
Pb				
Ni				29%
Co				17%
Mn				0.3%
Si				0.2%
C				<0.01%
Au				Plating

Package tests

Parameters				Metal Case
MSL				N/A
ESD				Class M4 Machine Model Class 3A HBM

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