



# Low Noise JFET 564106

## DESCRIPTION

The 564106 is an N-channel Low Noise Junction Field Effect Transistor for low frequency and audio applications and in PIR sensor applications. The device is offered as an un-sawn wafer, and can be supplied after back-grind and back-side gold..

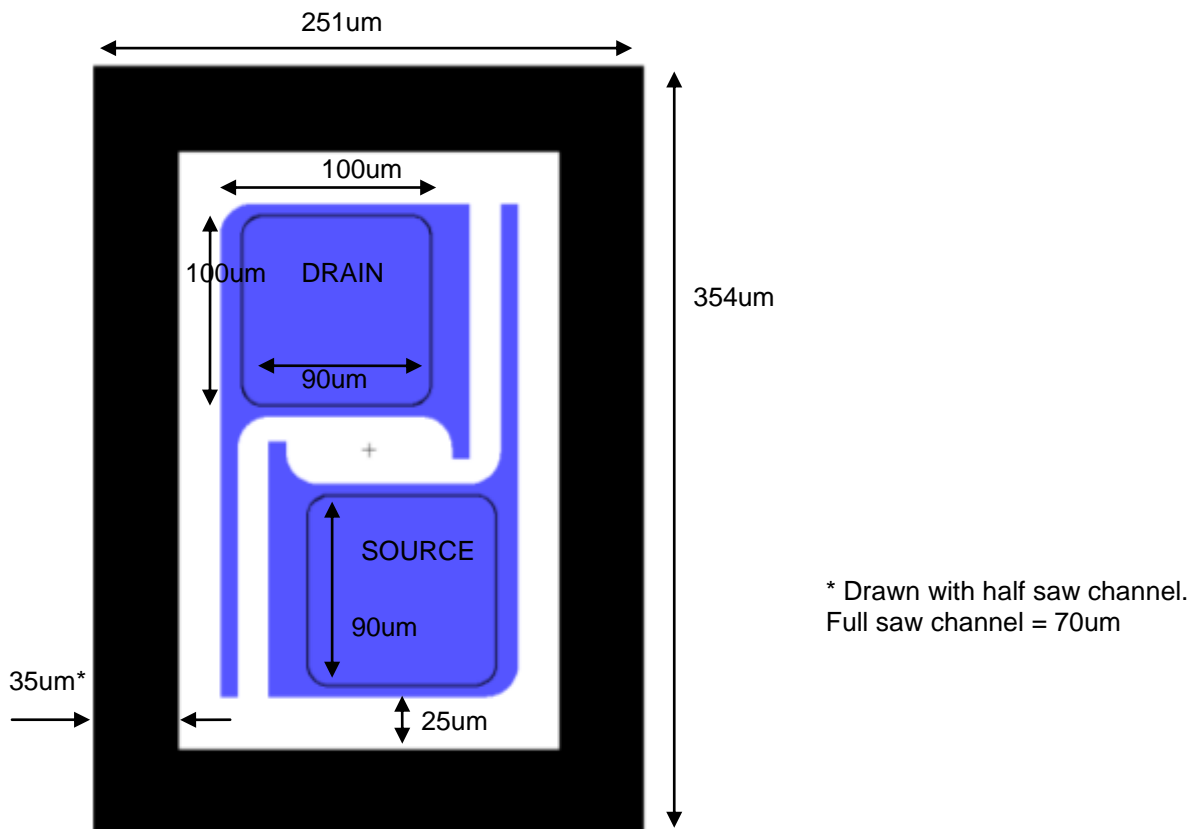
## FEATURES

- Low Noise.
- Low Leakage.
- Low frequency.
- Low power consumption.

## APPLICATIONS

- Low noise amplifier.
- Charge Sensitive amplifier.
- Audio frequency amplifier
- P.I.R. Sensors
- Microphones
- Hearing aids

## 1.0 Dimensions & Pad Assignment



Viewed with major wafer flat at bottom



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## 2.0 ABSOLUTE MAXIMUM RATINGS

PARAMETER	RATING	UNITS
Drain Supply voltage	25	V
Drain Supply current	5	mA
Operating Temperature, $T_O$	0 to 85	°C
Storage Temperature, $T_S$	-40 - +105	°C

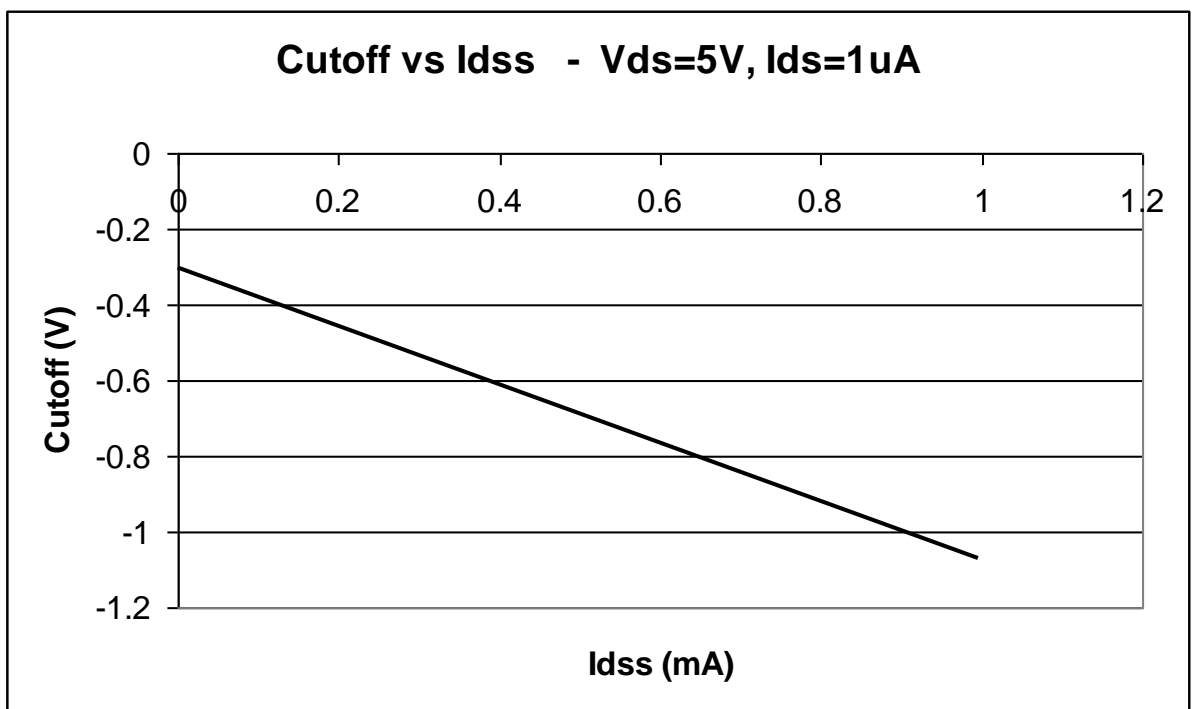
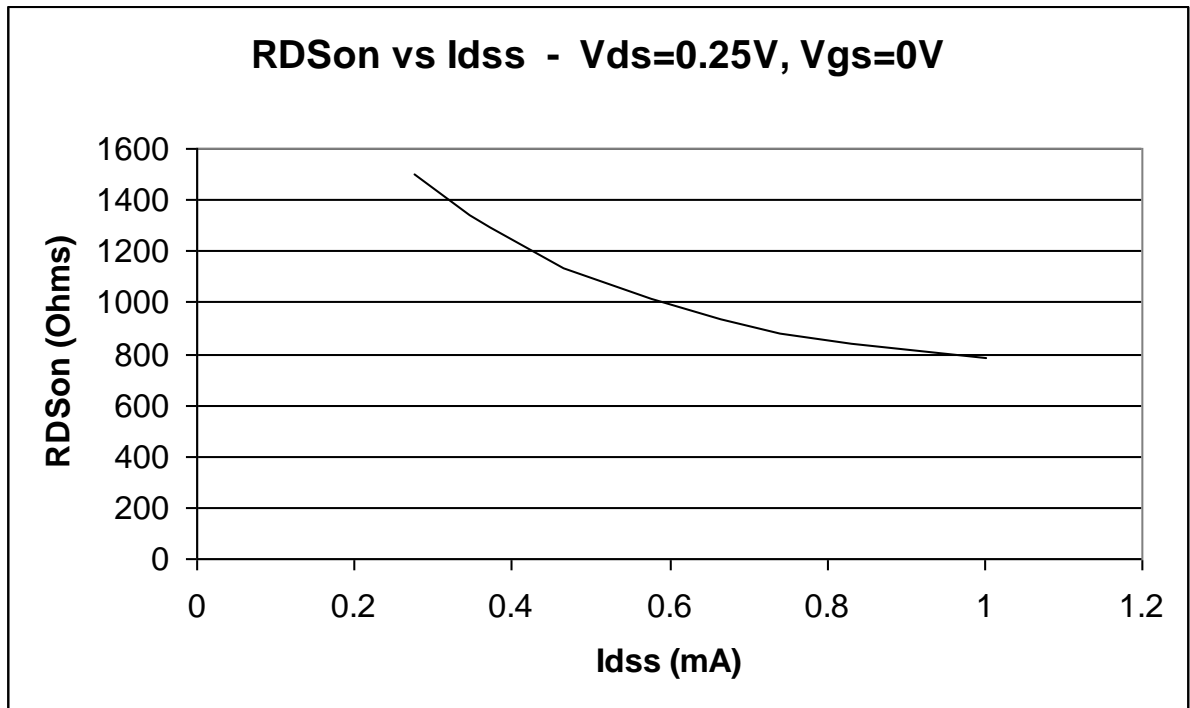
## 3.0 MECHANICAL SPECIFICATION

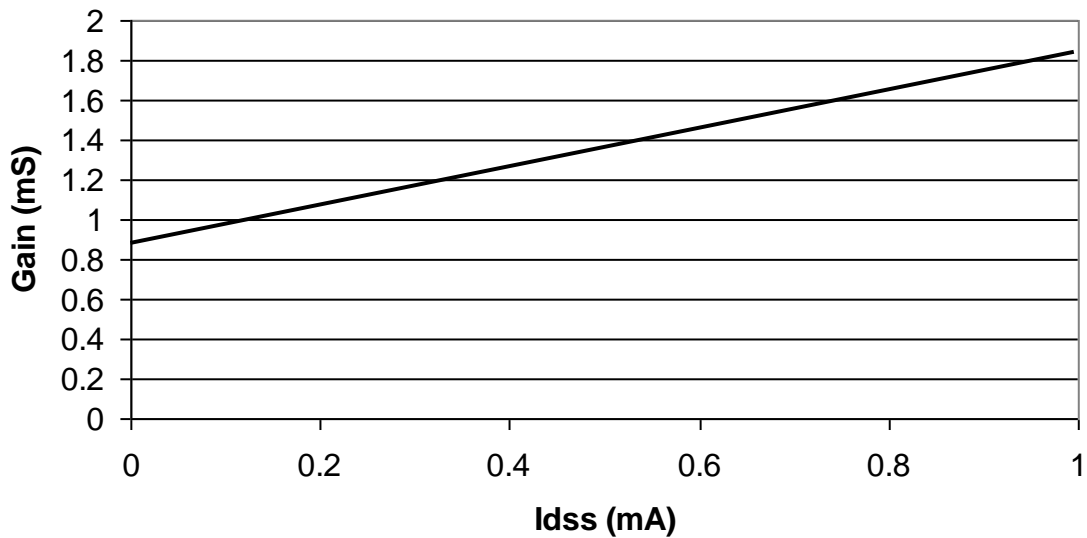
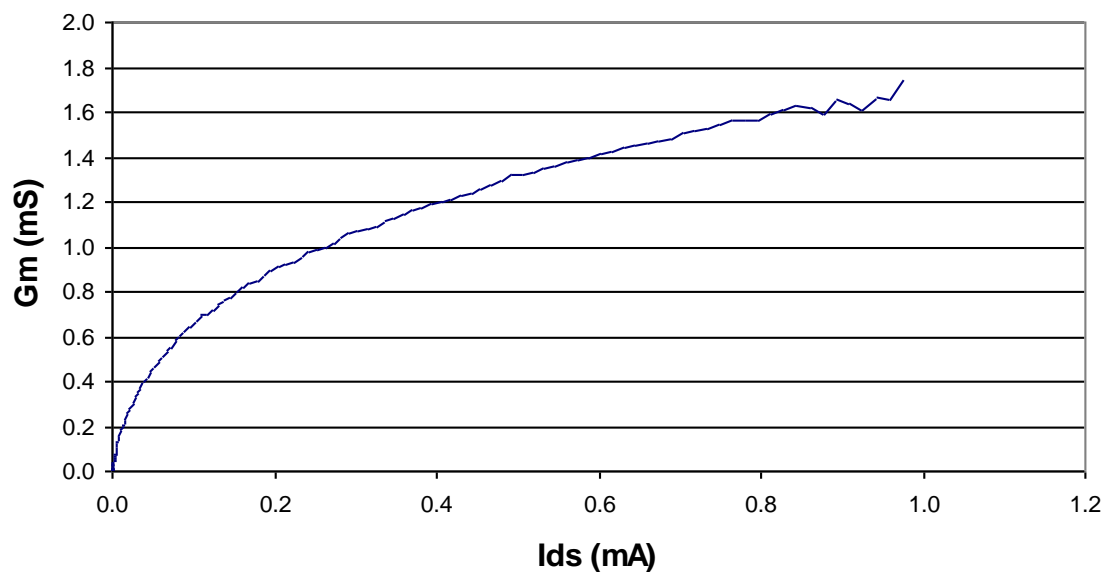
PARAMETER	RATING	UNITS
Chip size (+/- 0.02mm) LxWxH	0.354 x 0.251 x 0.525	mm
Gate contact	On back-side	
Bond pad size	90 x 90	microns
Ink dot size	5	mils
Ink dot appearance	Opaque, black matt	

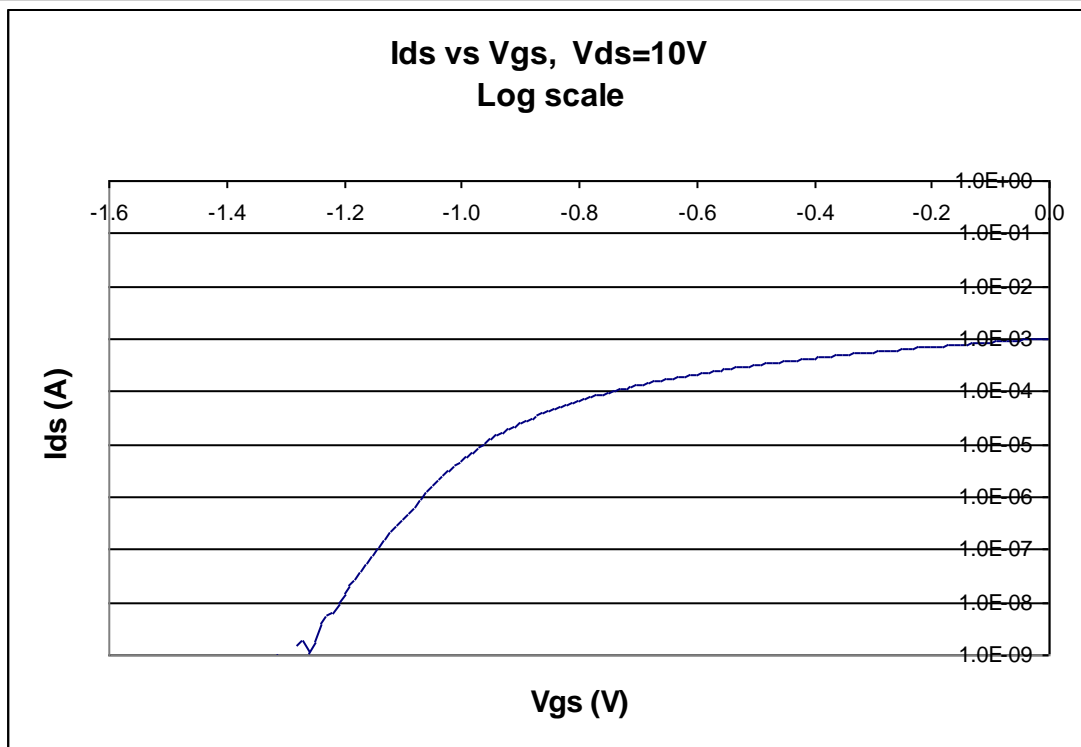
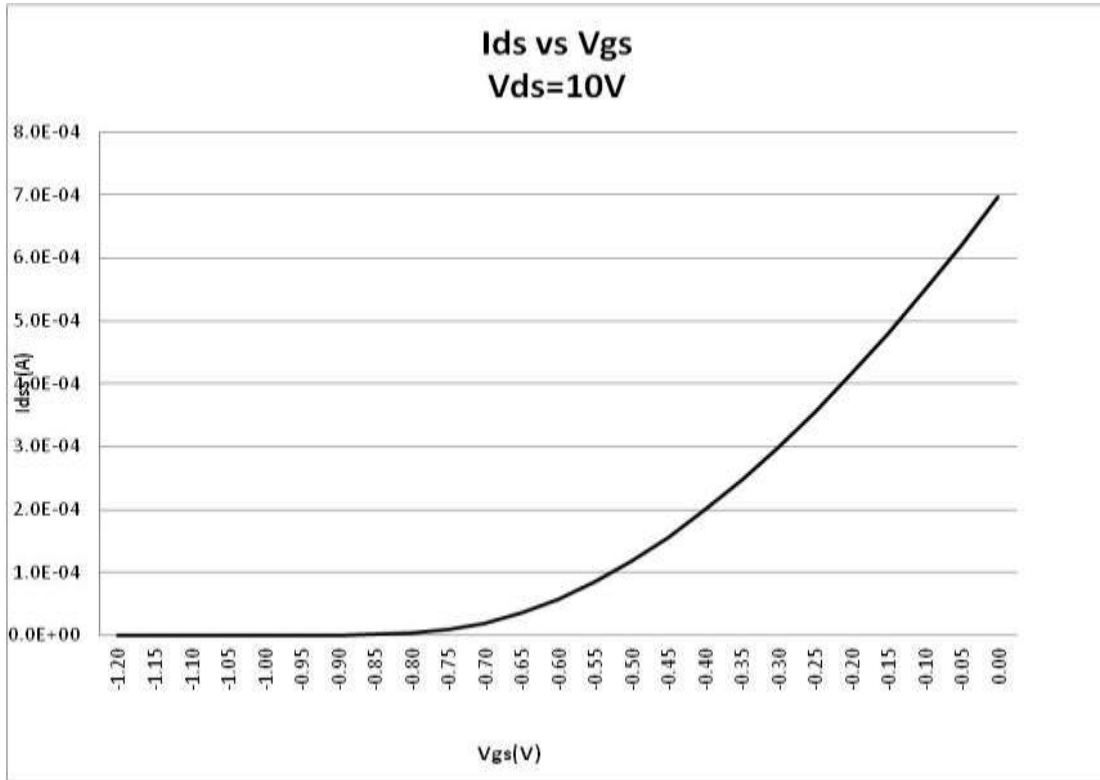
## 4.0 ELECTRICAL SPECIFICATION

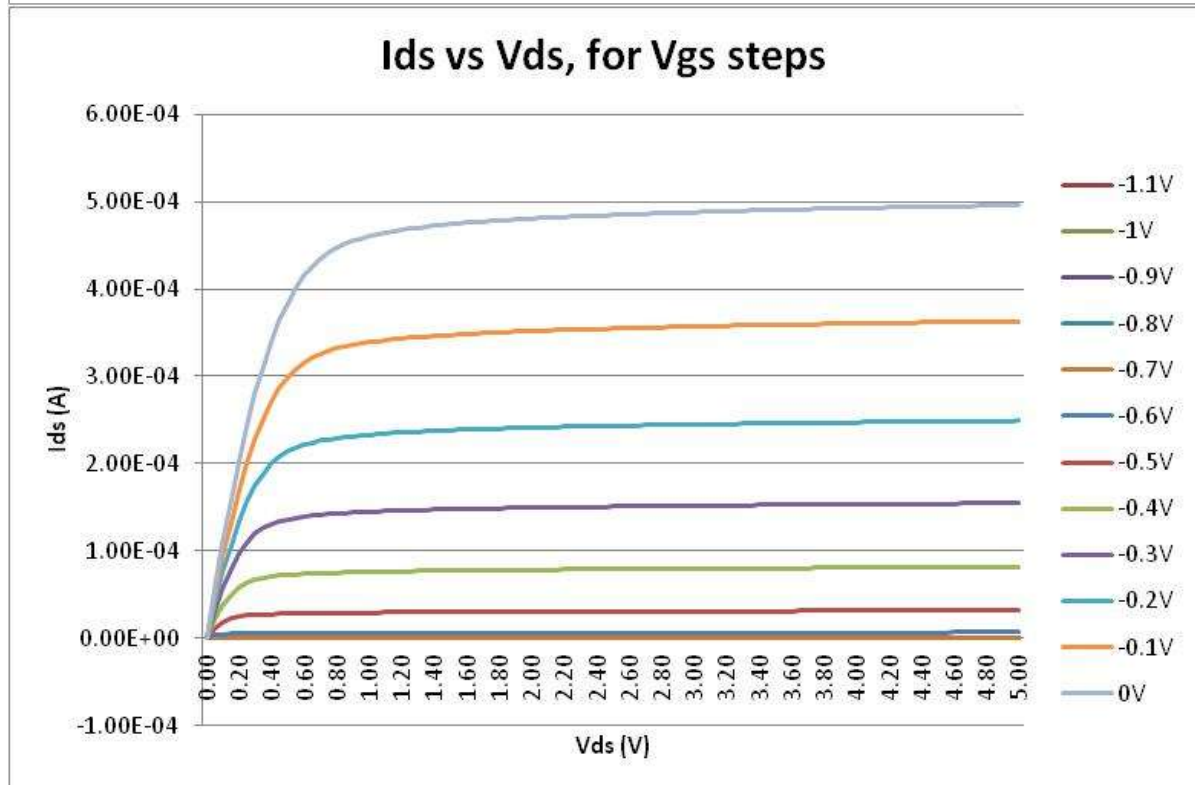
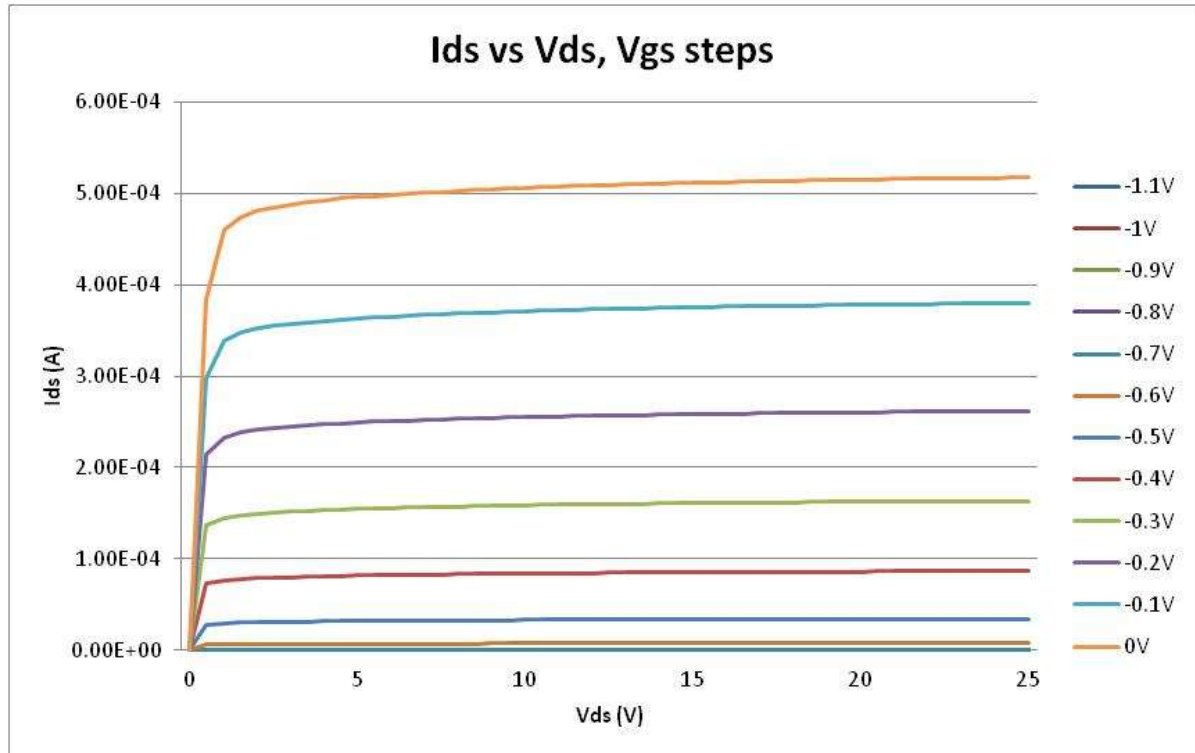
PARAMETER	SYMBOL	TEST CONDITIONS	SPEC	UNIT
Common-source forward trans-conductance.	gfs	$V_{gs} = 0V,$ $V_{ds} = 5$	> 1	mS
Gate-source cut-off voltage	Vcutoff	$V_{ds} = 5V$ $I_{ds} = 1\mu A$	-0.5 to -0.85	V
Drain Current	$I_{dss}$	$V_{ds}=5V$ $V_{gs}=0V$	0.25 to 1.2	mA
Drain source resistance	$R_{ds(on)}$	$V_{ds} = 0.25V,$ $V_{gs} = 0V$	500 - 1600	$\Omega$
Gate input resistance	$R_{in}$	$V_{gs} = -15V$ $V_{ds} = 0$	1,000 to 80,000	Gig- $\Omega$

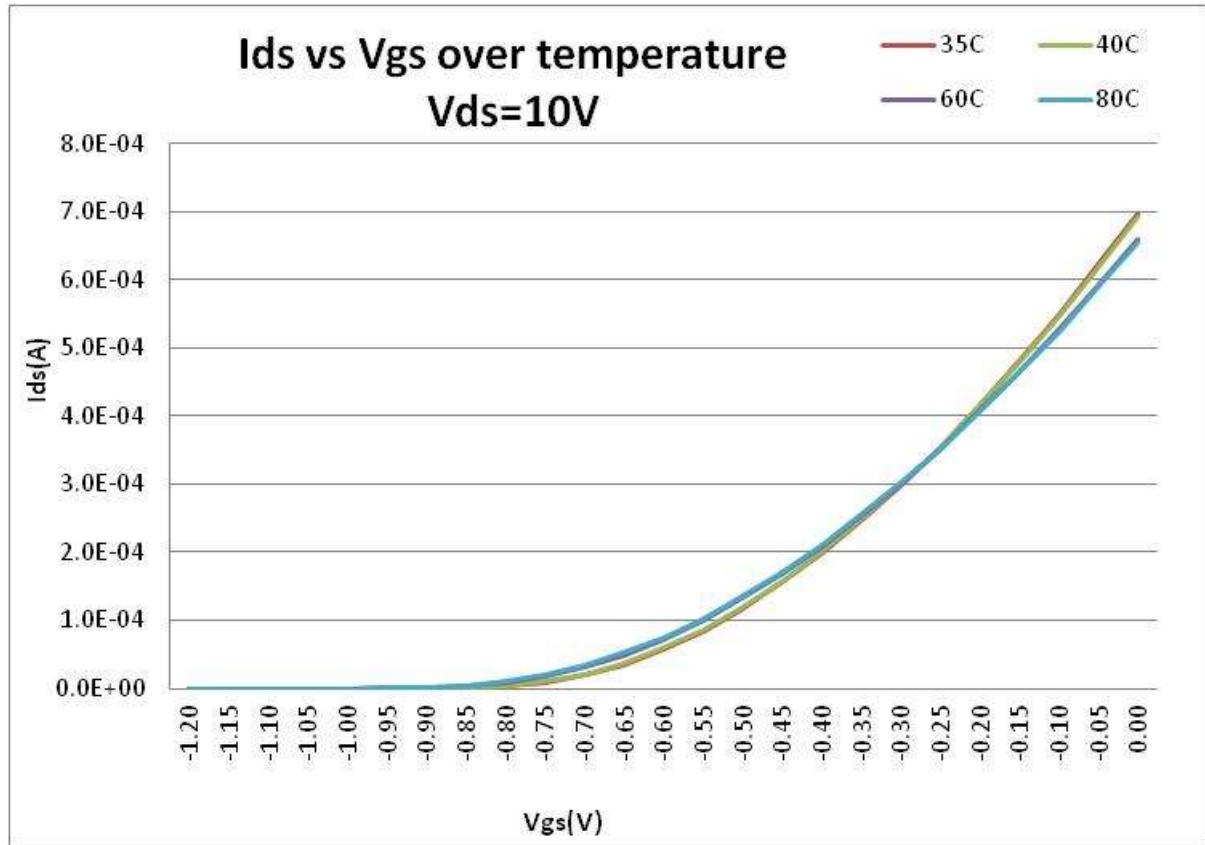
#### 4.1 Electrical Curves



**Gain vs  $I_{dss}$  -  $V_{ds}=5V$** **Gm vs  $I_{ds}$ ,  $V_{ds}=10V$   
 $I_{dss}=1mA$** 







#### 4.2 Noise Characteristics

Ids mA	Vgs V	Noise @		
		1KHz	10KHz	100KHz
0.5	0.43	3.67	3.36	2.75
0.9	0.17	3.74	3.08	2.44
1.3	0.08	4.15	2.96	2.26



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