

# LOW NOISE JFET 564103



## DESCRIPTION

The 564103 is an N-channel Low Noise Junction Field Effect Transistor for low frequency and audio applications and in PIR sensor applications. The device can be offered as an un-sawn wafer, a sawn wafer or as die mounted in a customer specified package such as a T092 or a SOT package.

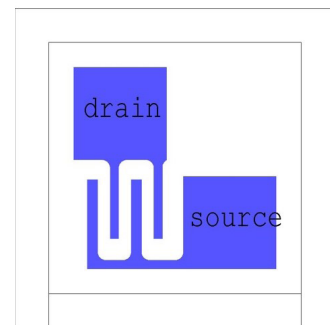
## FEATURES

- 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 Pad Assignment



This view is with the major flat at the bottom.

## 1.0 ABSOLUTE MAXIMUM RATINGS

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

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## 2.0 MECHANICAL SPECIFICATION

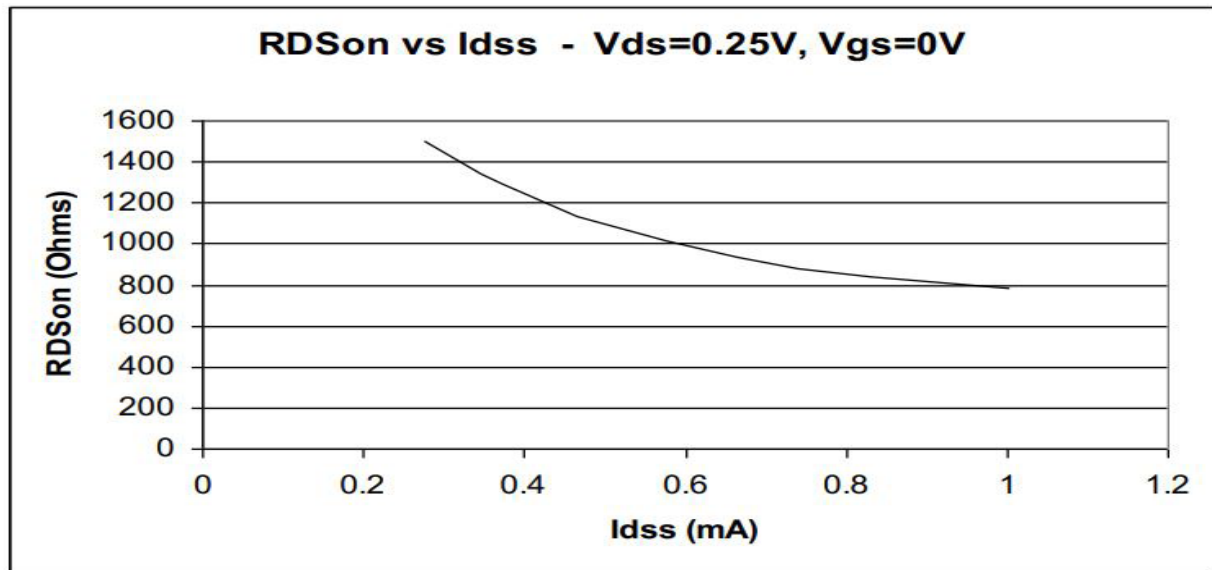
PARAMETER	RATING	UNITS
Chip size (+/- 0.02mm) LxBxH	14x14x12	mils
Chip off	£ 0.05 mm (LxBxH), £ 0.1 mm (corners)	
Linearity of edge (Din 7184)	0.005	mm
Gate contact	On back-side	
Bond pad size	4x4	mils
Ink dot size	Customer Specified	
Ink dot appearance	Opaque, black matt	

## 3.0 ELECTRICAL SPECIFICATION

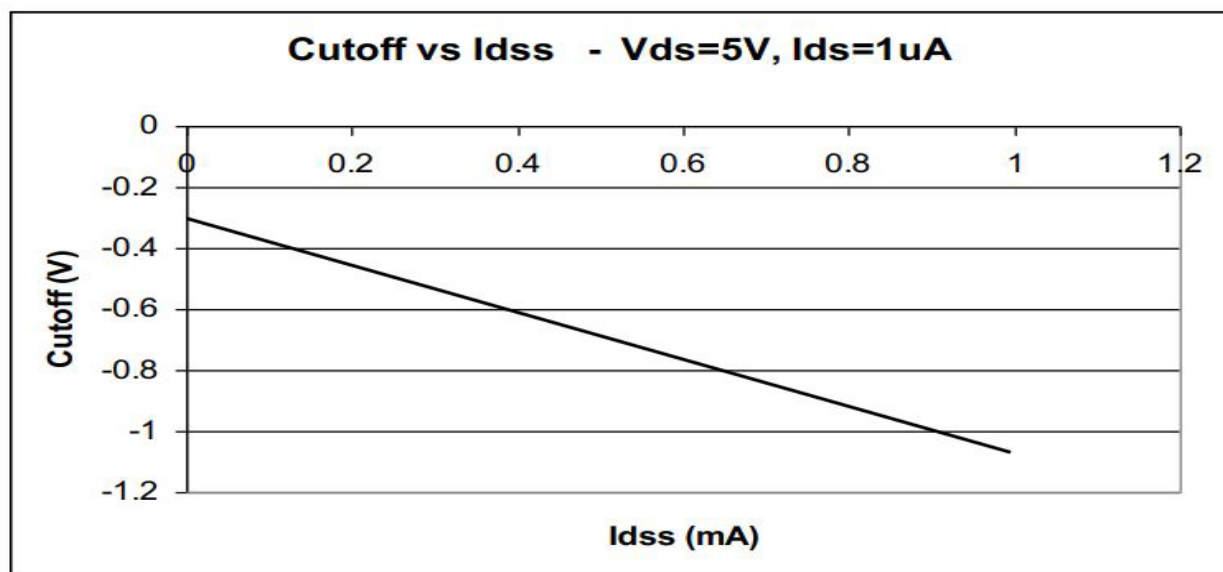
PARAMETER	SYMBOL	TEST CONDITIONS	SPEC	UNIT
Common-source forward transconductance.	gfs	Vgs = 0V, Vds = 5	> 1	mS
Gate-source cut-off voltage	Vcutoff	Vds = 5V Ids = 1uA	-0.5 to -1.0	V
Drain Current	Idss	Vds=5V Vgs=0V	0.25 to 1.2	mA
Drain source resistance	Rds(on)	Vds = 0.25V, Vgs = 0V	500 - 1600	Ω
Gate input resistance	Rin	Vgs = -15V Vds= 0	1,000 to 80,000	Gig-w

## 3.1 Electrical Curves

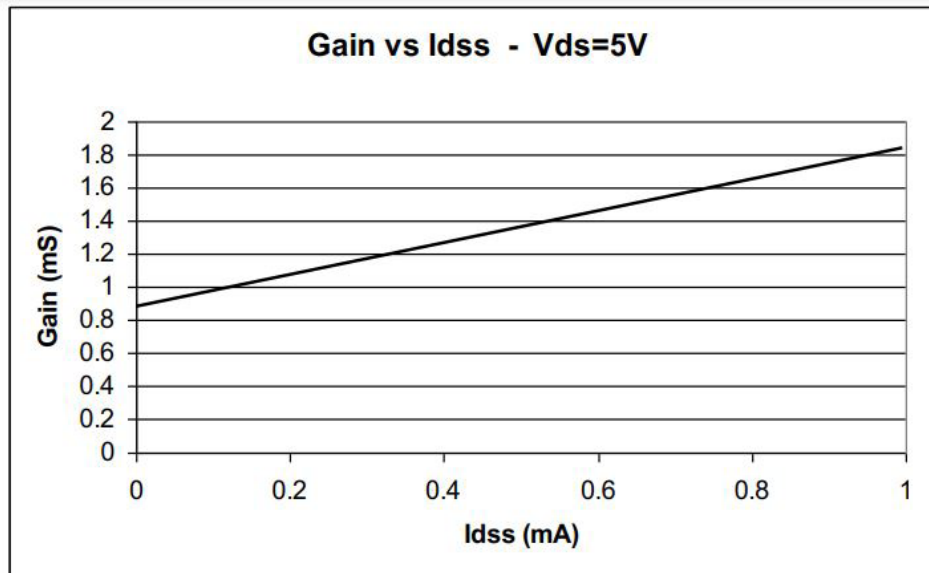
### RDSon vs Idss - Vds=0.25V, Vgs=0V



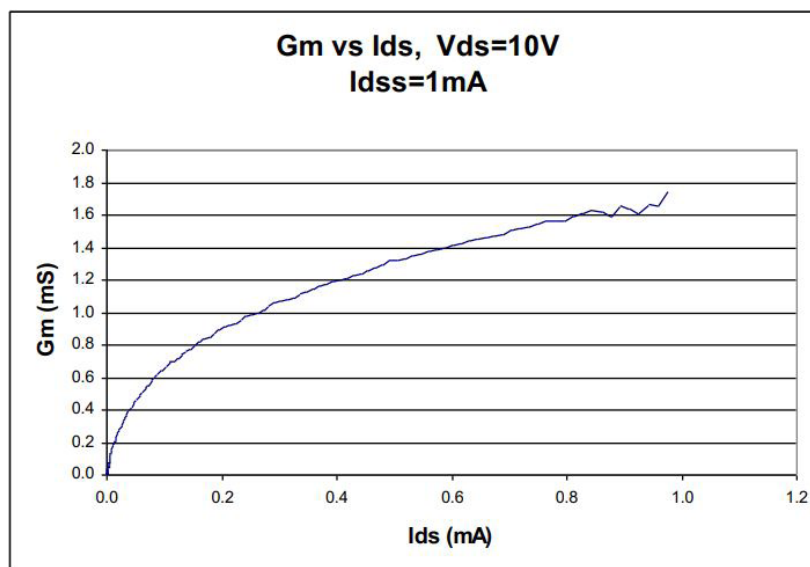
### Cutoff vs Idss - Vds=5V, Ids=1uA



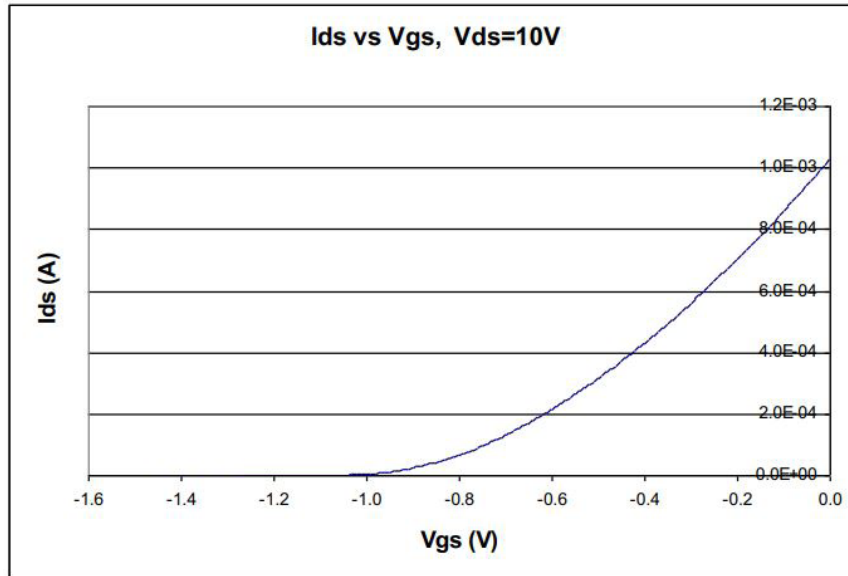
## Typical Characteristics



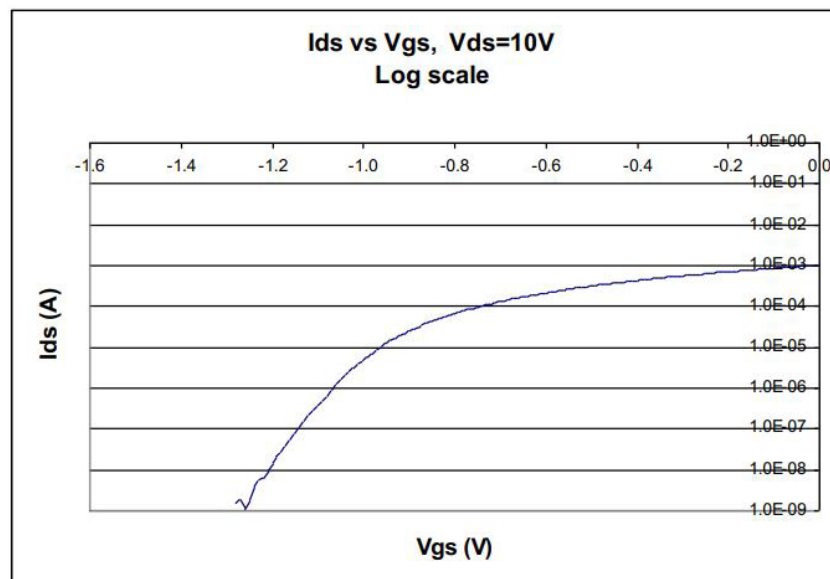
## Typical Characteristics



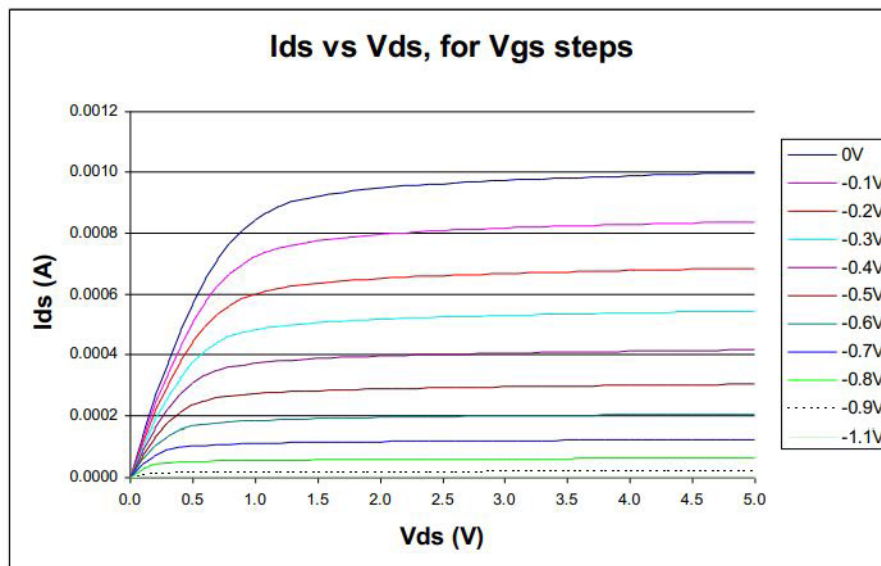
## Typical Characteristics



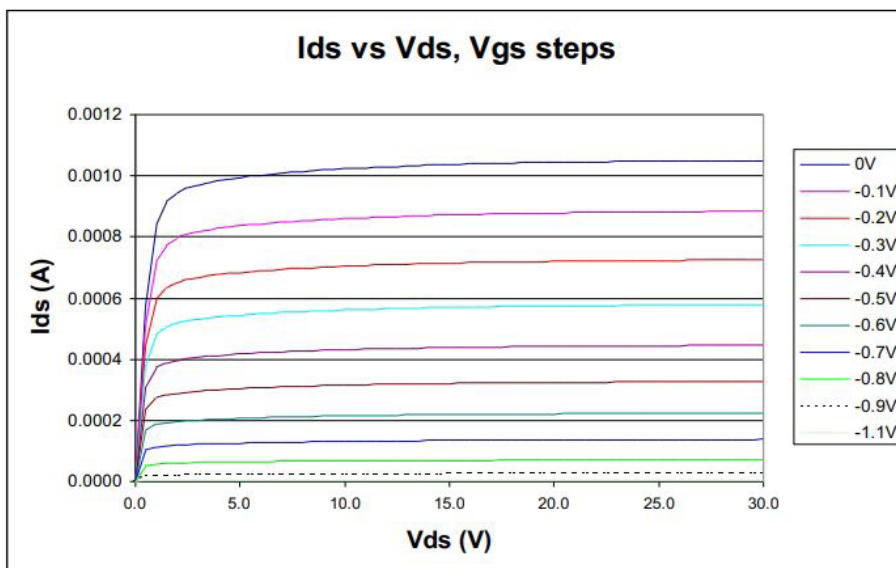
## Typical Characteristics



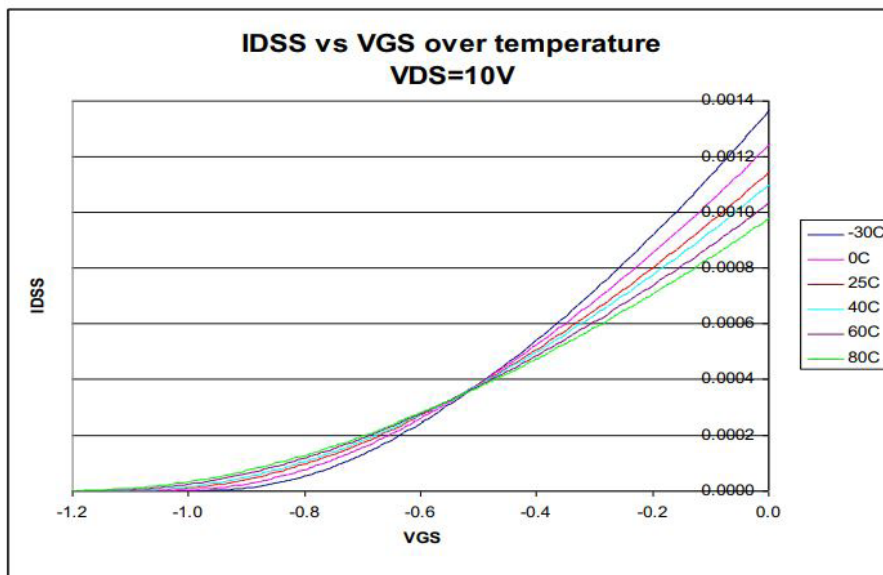
## Typical Characteristics



## Typical Characteristics



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### 3.2 Noise Characteristics

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

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## **LIFE SUPPORT APPLICATIONS**

This product is not designed for use in life support appliances, devices, or systems where malfunction of these products can be reasonably expected to result in personal injury. Queensland Semiconductor Technologies Ltd customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Semefab for any damages resulting from such improper use or sale.