



Over 150 million die shipped per year

## Low Noise JFET 564102

### DESCRIPTION

The 564102 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.

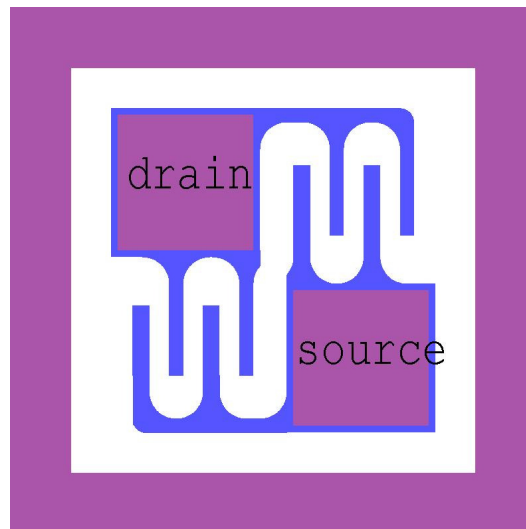
### FEATURES

- 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.



564102  
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## 1.0 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

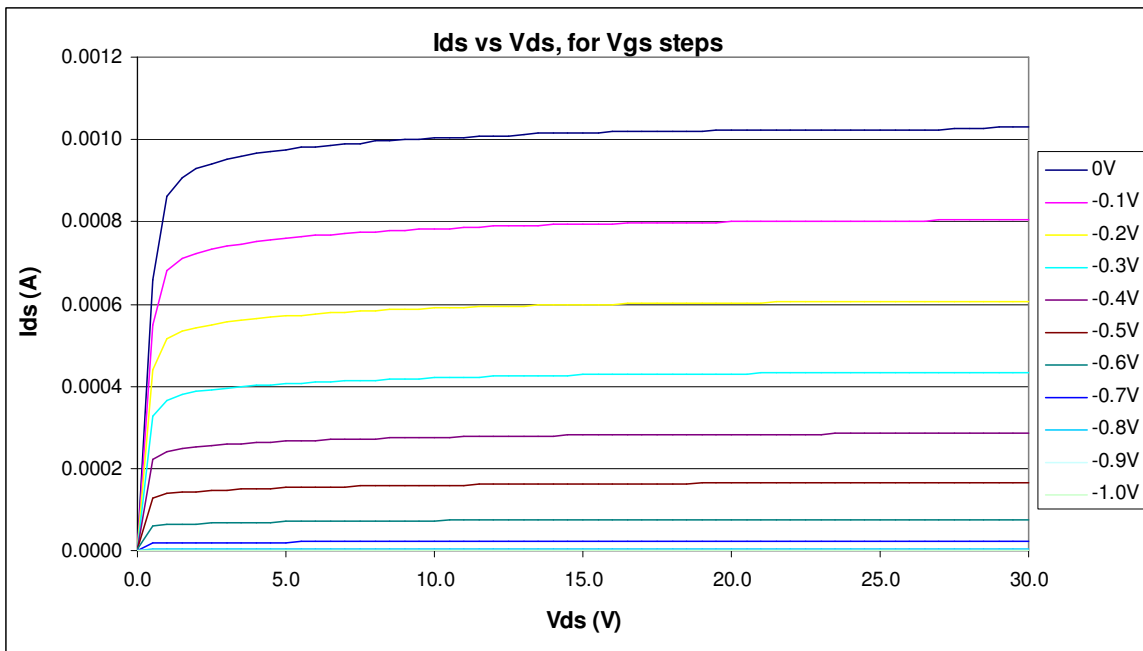
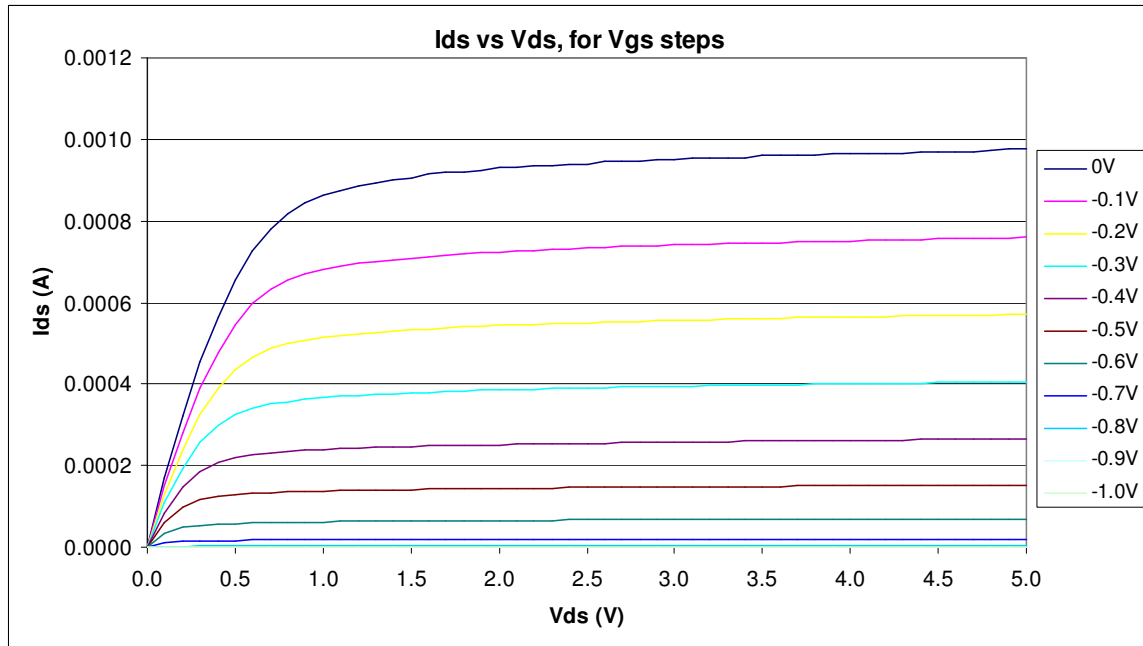
## 2.0 MECHANICAL SPECIFICATION

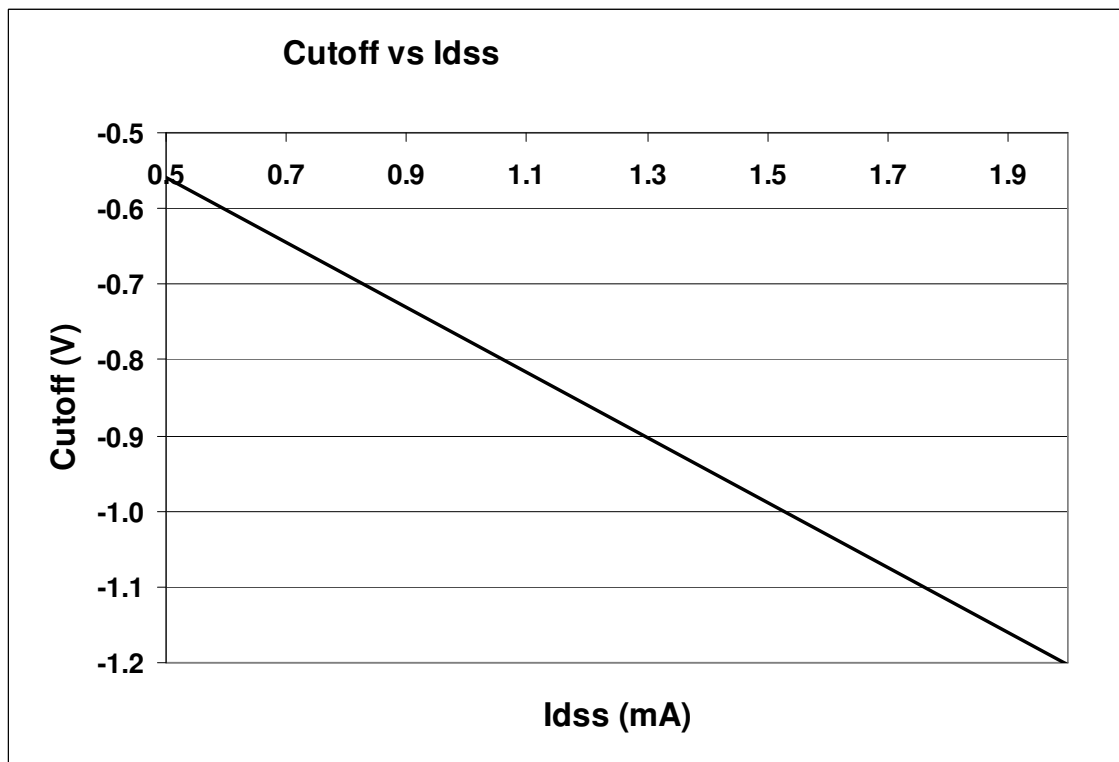
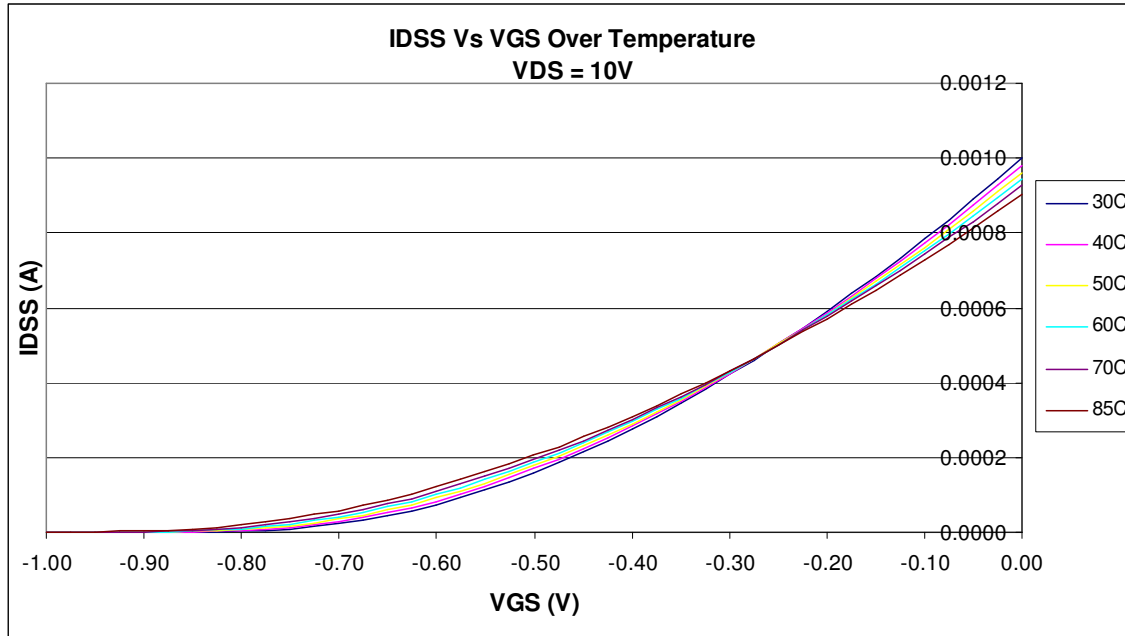
PARAMETER	RATING	UNITS
Chip size (+/- 0.02mm) LxBxH	0.38 x 0.38 x 0.22 (15x15x8.7) unsawn	mm (mils)
Chip off	$\leq 0.05$ mm (LxBxH), $\leq 0.1$ mm (corners)	
Linearity of edge (Din 7184)	0.005	mm
Gate contact	On back-side (with 1 micron thick gold)	
Bond pad size	0.1 x 0.1 (4 x 4)	mm (mils)
Ink dot diameter (typical)	0.25	mm
Ink dot appearance	Opaque, black matt	

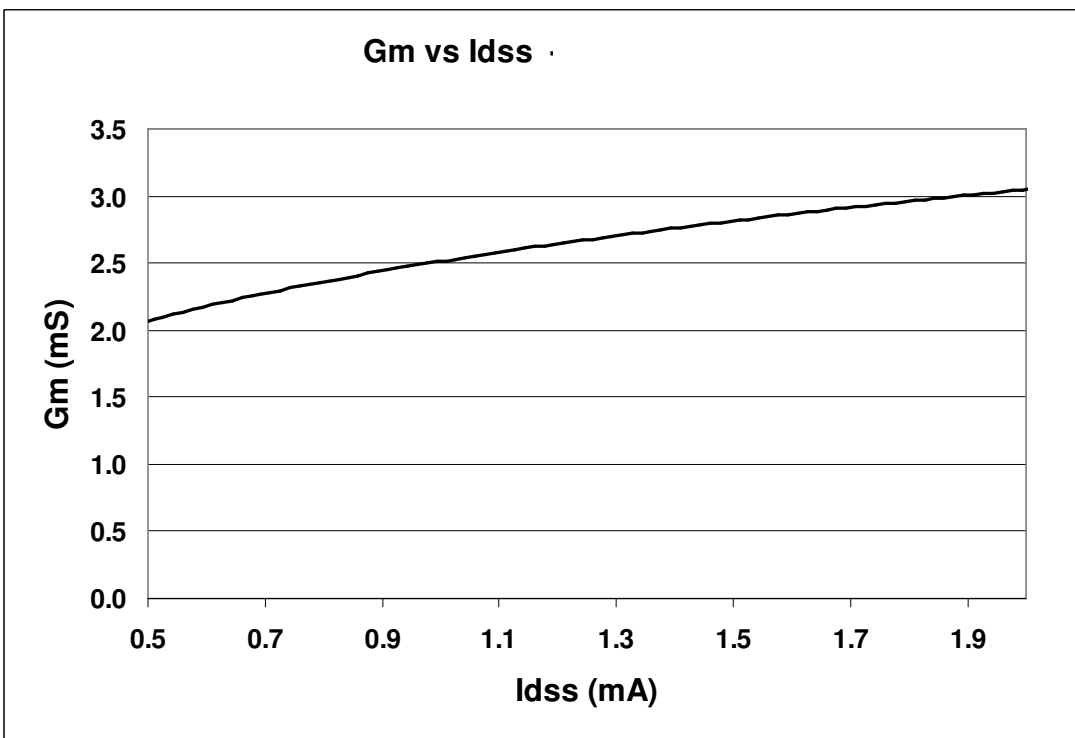
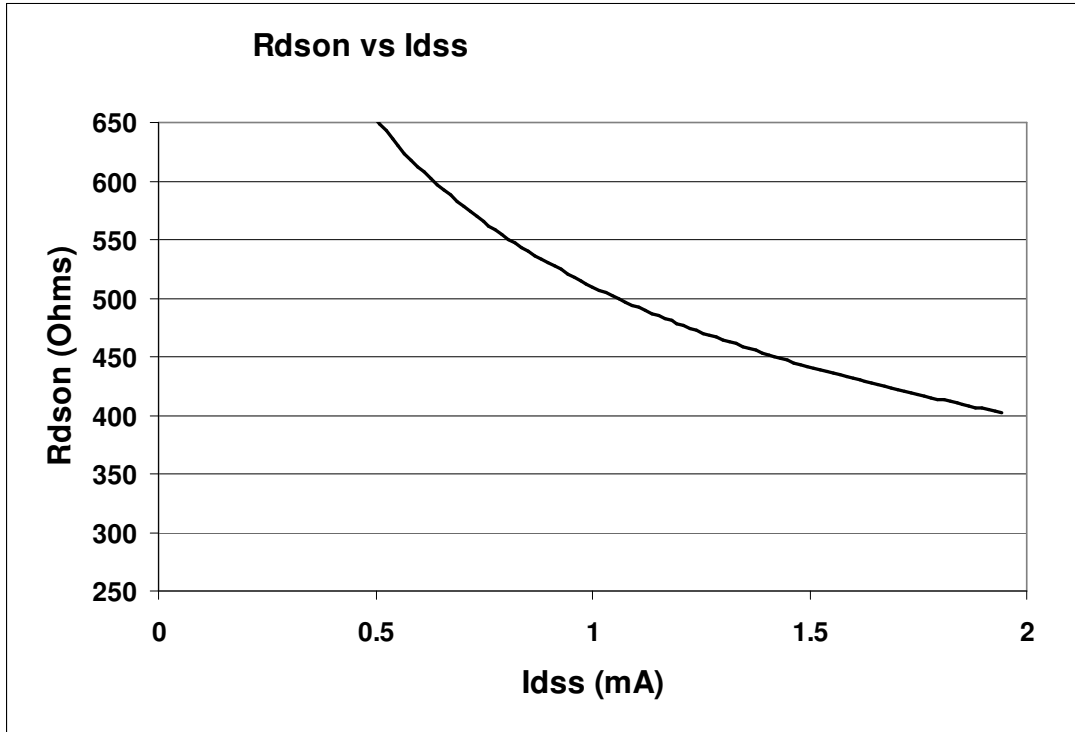
## 3.0 ELECTRICAL SPECIFICATION

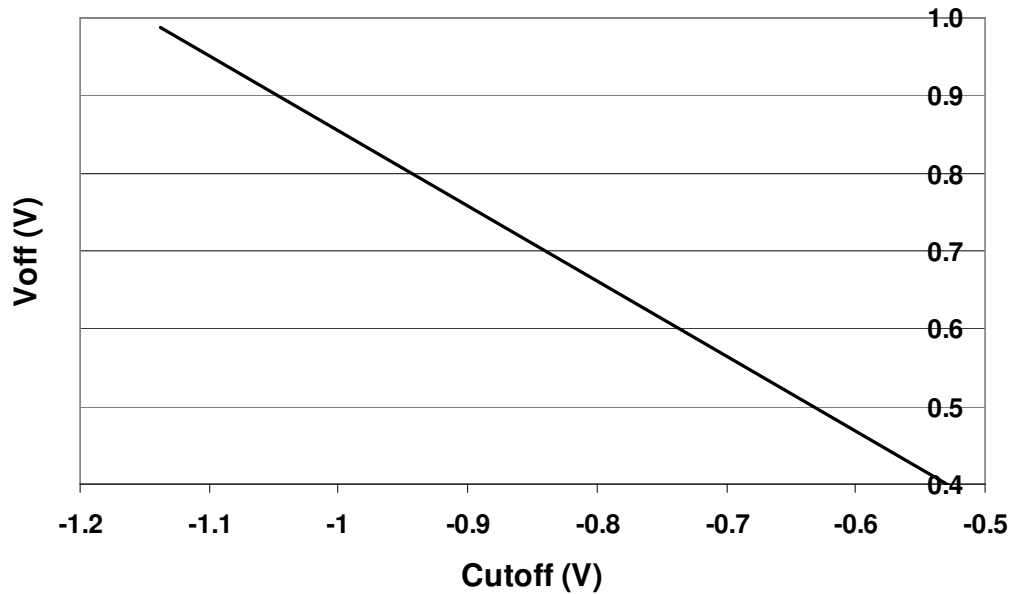
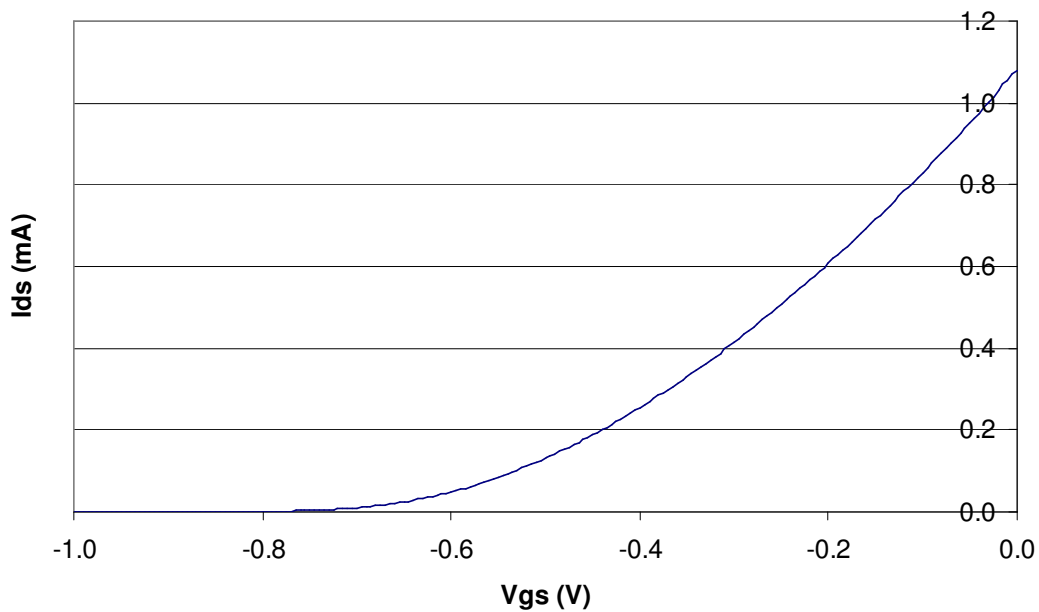
PARAMETER	SYMBOL	TEST CONDITIONS	SPEC	UNIT
Breakdown voltage between gate and drain, source open	BVgdo	Igd = 10uA	>40	V
Gate-source cut-off voltage	Vcutoff	Vds = 10V Ids = 1uA	-0.9 to -0.5	V
Drain Current	Idss	Vds=10V Vgs=0V	0.6 to 1.8	mA
Drain source resistance	Rdson	Vds = 0.01V, Vgs = 0V	250 to 650	$\Omega$
Gate reverse leakage current	Igss	Vgs = -15V Vds= 0	<2	pA
Offset Voltage (See diagram in 4.0)	Voff	Vds = 10V Vgs = 0V	0.45 to 0.8	V

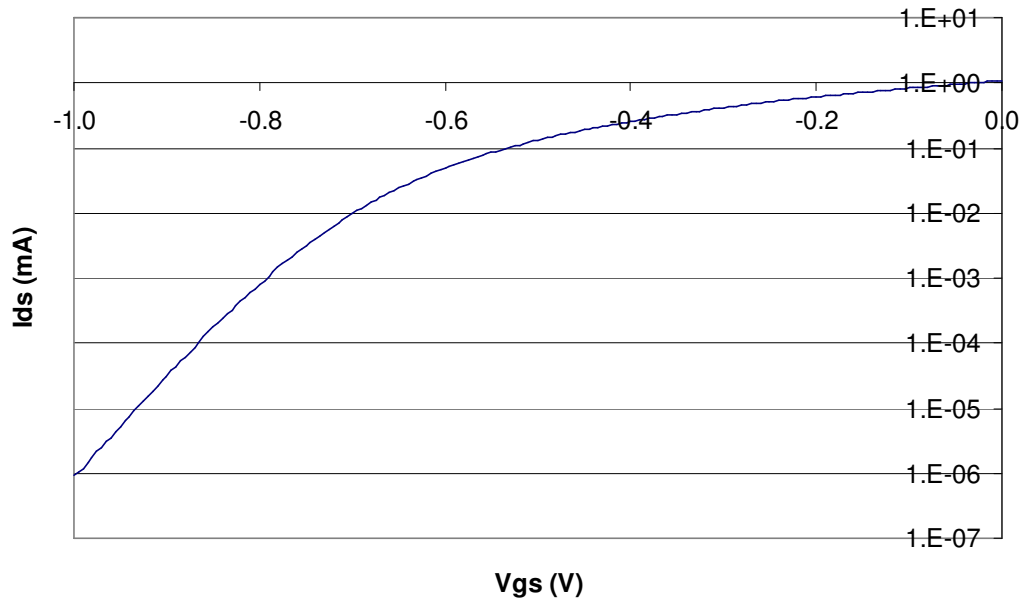
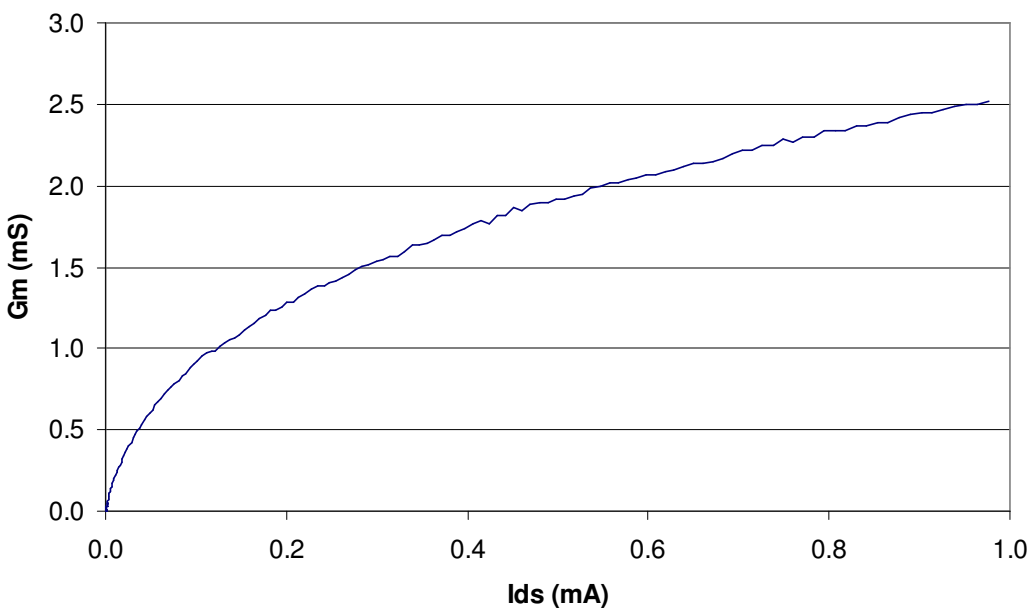
### 3.1 Electrical Curves





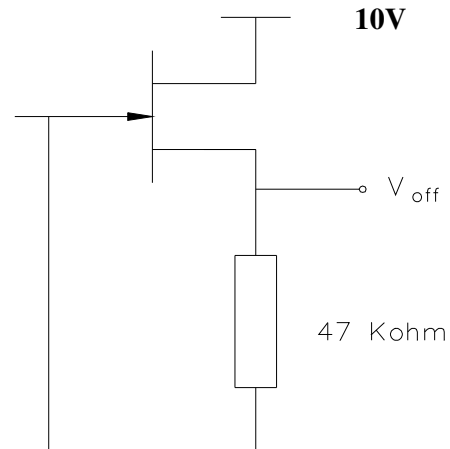


**V<sub>off</sub> vs V<sub>cutoff</sub>****I<sub>ds</sub> vs V<sub>gs</sub>, V<sub>ds</sub>=10V**

**Ids vs Vgs, Vds=10V Log scale****Gm vs Ids, Vds=10V**

## 4.0 Voff Diagram

### 1.1





564102

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## 5.0 ORDERING INFORMATION

Order products using the following product codes

564102 Die (Die in sawn wafer form).  
564102 Wafer (Un-sawn wafers).

Other packages available on request.

Semefab (Scotland) Ltd. may change this specification at any time without notification.

Supply of products conforms to Semefab (Scotland) Ltd.'s Terms and Conditions

### 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.

Semefab (Scotland) 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.

Semefab (Scotland) Ltd  
Newark Road South  
Eastfield Industrial Estate  
Glenrothes, Fife KY7 4NS  
Telephone: +44 (0) 1592 630 630  
Fax: +44 (0) 1592 775 265  
Email [sales@semefab.co.uk](mailto:sales@semefab.co.uk)

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