FH101

High Dynamic Range FET

The Communications Edge™

Advanced Product Information

Product Features

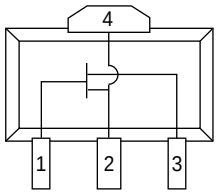
- 36 dBm Output IP3
- 2.0 dB Noise Figure
- 18 dB Gain
- 18 dBm P1dB
- DC-3 GHz Bandwidth
- MTTF >100 Years
- SOT-89 Surface Mount Package

Product Description

The FH101 is a high dynamic range FET packaged in a low cost surface mount package. The combination of low noise figure and high output IP3 at the same bias point makes it ideal for receiver and transmitter applications. The FH101 achieves +36 dBm IP3 at a mounting temperature of 85˚C with an associated MTTF of >100 years. The package is a SOT-89. All devices are 100% RF & dc tested on a wafer.

The product is targeted for applications where high linearity is required.

Functional Diagram



Function	Pin No.
Gate	1
Source	2
Drain	3
Source	4

Specifications

DC Electrical Parameter	Units	Minimum	Typical	Maximum	Condition
Saturated Drain Current, Idss	mA	100	140	170	Vgs = 0V
Transconductance, Gm	mS	-	120	-	
Pinch Off Voltage, Vp	V	-3.0	-1.5	-	Ids = 0.6 mA

RF Parameter	Units	Minimum	Typical	Maximum	Condition
Small Signal Gain, Gss	dB	16	18	-	
1 dB Compression Point, P1dB	dBm	-	18	-	
Third Order Output Intercept, OIP3	dBm	32	36	-	
Noise Figure, NF	dB	-	2.0	-	

Notes:
1. DC parameters measured under the following conditions unless otherwise noted.
   25°C with Vds = 5.0 volts
2. RF parameters measured under the following conditions unless otherwise noted.
   25°C with Vds = 5.0 volts, Test frequency = 800 MHz, 50 ohm system.
3. 3OIP Measured with two tones at an output power of 5 dBm/tone separated by 10 MHz. The suppression on the largest IM3 product is used to calculate the 3OIP using a 2:1 slope rule.
4. Device needs appropriate match to become unconditionally stable.

Absolute Maximum Ratings

Parameter	Rating	Units
Drain to Source Voltage	8.0	Volt
Gate to Source Voltage	-6.0	Volt
Gate Current	4.5	mA
Operating Case Temperature	-40 to +85	°C
Storage Temperature	-45 to +125	°C
Junction Temperature	+155	°C
Thermal Resistance (θ_{JC})	85	°C/W
RF Input Power (continuous)	+10	dBm

Operation of this device above any of these parameters may cause permanent damage.

Ordering Information

Part No.	Description
FH101	High Dynamic Range FET (Available in tape and reel)