



TF202THC

N-Channel JFET 20V, 140 to 350 μ A, 1.0mS, VTFP

ON Semiconductor®

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Features

- Ultrasmall package facilitates miniaturization in end products
- Especially suited for use in electret condenser microphone for audio equipments and telephones
- Excellent voltage characteristics
- Excellent transient characteristics
- Adoption of FBET process
- Halogen free compliance

Specifications

Absolute Maximum Ratings at Ta=25°C

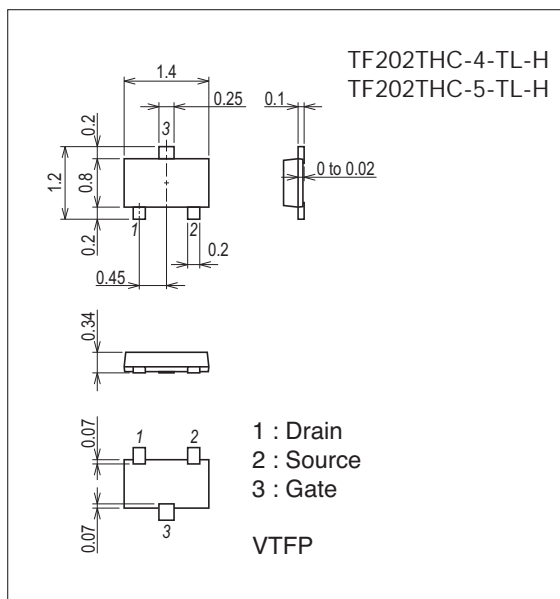
| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|--------|------------|-------------|------|
| Gate to Drain Voltage | VGDO | | -20 | V |
| Gate Current | IG | | 10 | mA |
| Drain Current | ID | | 1 | mA |
| Allowable Power Dissipation | PD | | 100 | mW |
| Junction Temperature | Tj | | 150 | °C |
| Storage Temperature | Tstg | | -55 to +150 | °C |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

Package Dimensions

unit : mm (typ)

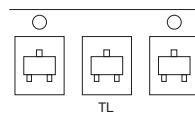
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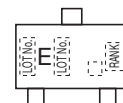
Product & Package Information

- Package : VTFP
- JEITA, JEDEC : SC-106A
- Minimum Packing Quantity : 8,000 pcs./reel

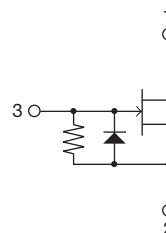
Packing Type: TL



Marking



Electrical Connection



TF202THC

Electrical Characteristics at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|----------------------|---|---------|------|------|------|
| | | | min | typ | max | |
| Gate to Drain Breakdown Voltage | V(BR)GDO | I _G =-100μA | -20 | | | V |
| Cutoff Voltage | V _{GS(off)} | V _{DS} =5V, I _D =1μA | -0.2 | -0.6 | -1.0 | V |
| Drain Current | I _{DSS} | V _{DS} =5V, V _{GS} =0V | 140* | | 350* | μA |
| Forward Transfer Admittance | y _{fs} | V _{DS} =5V, V _{GS} =0V, f=1kHz | 0.5 | 1.0 | | mS |
| Input Capacitance | C _{iss} | V _{DS} =5V, V _{GS} =0V, f=1MHz | | 3.5 | | pF |
| Reverse Transfer Capacitance | C _{rss} | V _{DS} =5V, V _{GS} =0V, f=1MHz | | 0.65 | | pF |
| [Ta=25°C, V _{CC} =4.5V, R _L =1kΩ, C _{in} =15pF, See specified Test Circuit.] | | | | | | |
| Voltage Gain | GV | V _{IN} =10mV, f=1kHz | | -3.0 | | dB |
| Reduced Voltage Characteristic | ΔGV | V _{IN} =10mV, f=1kHz, V _{CC} =4.5V → 1.5V | | -1.2 | -3.5 | dB |
| Frequency Characteristic | ΔGvf | f=1kHz to 110Hz | | | -1.0 | dB |
| Input Impedance | Z _{IN} | f=1kHz | 25 | | | MΩ |
| Output Impedance | Z _O | f=1kHz | | 1000 | | Ω |
| Total Harmonic Distortion | THD | V _{IN} =30mV, f=1kHz | | 1.2 | | % |
| Output Noise Voltage | V _{NO} | V _{IN} =0V, A Curve | | | -110 | dB |

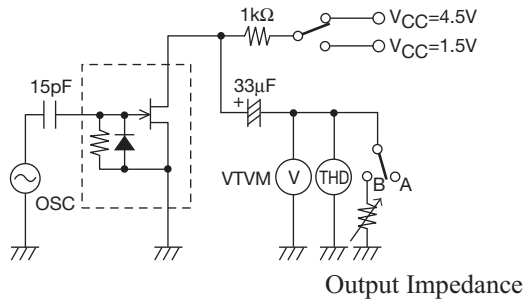
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

* : The TF202THC is classified by I_{DSS} as follows : (unit : μA)

| Rank | 4 | 5 |
|------------------|------------|------------|
| I _{DSS} | 140 to 240 | 210 to 350 |

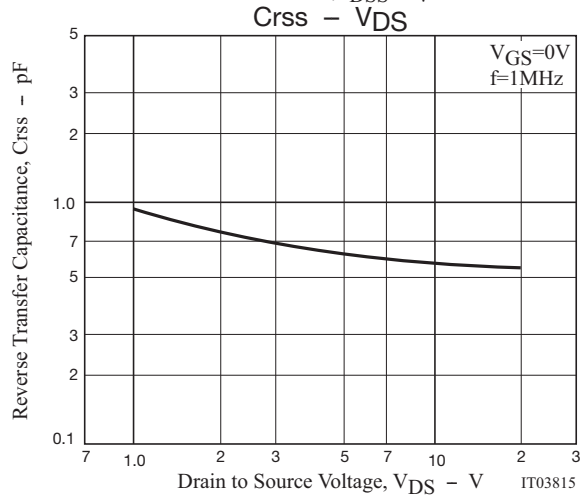
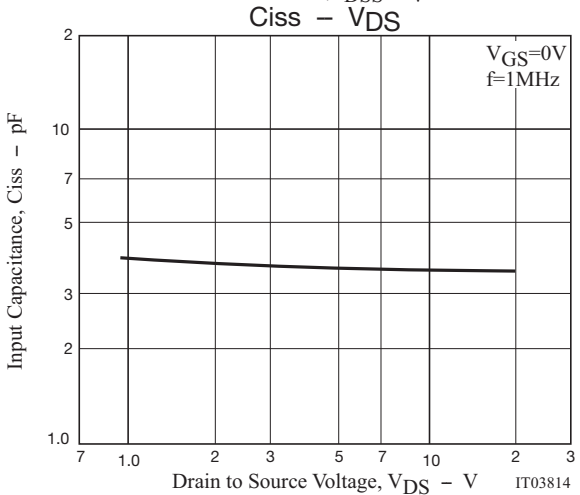
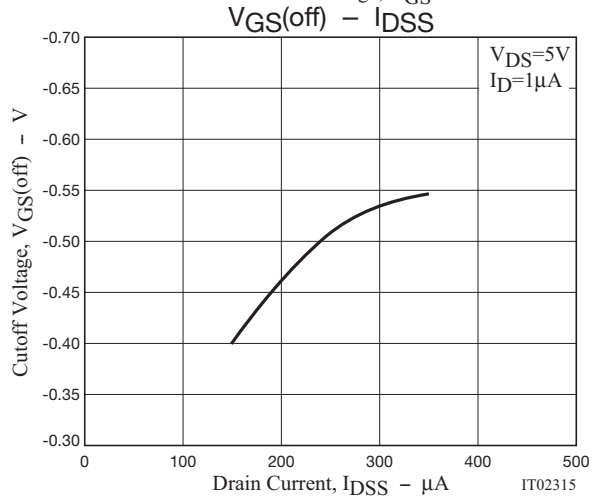
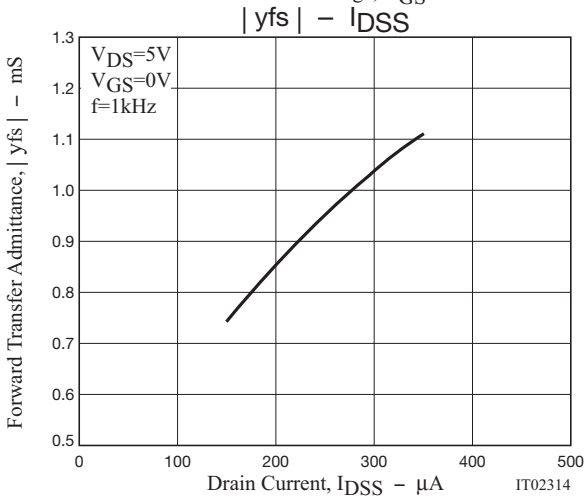
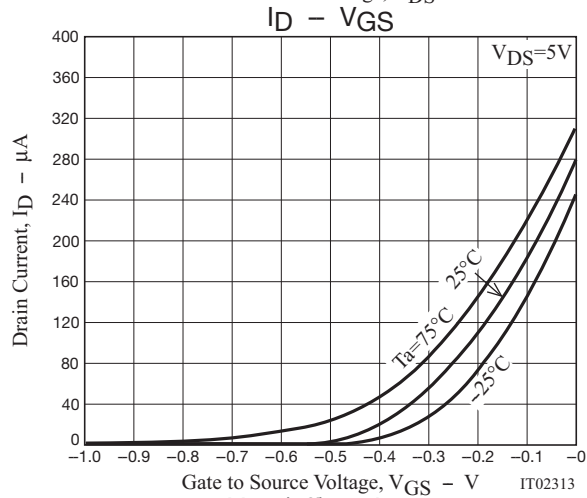
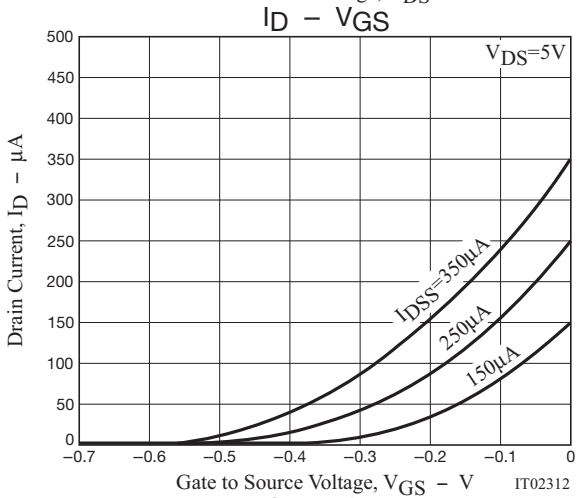
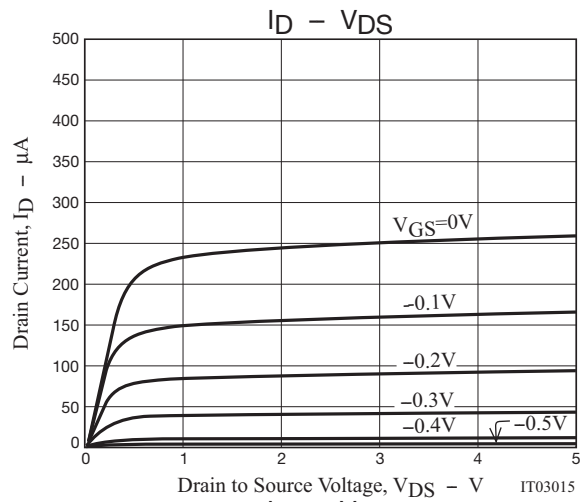
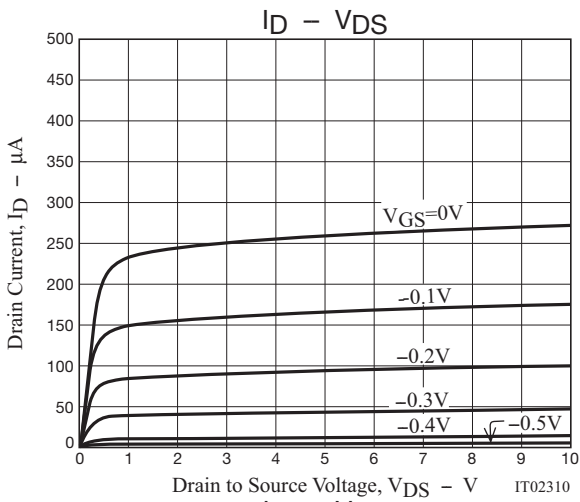
Test Circuit

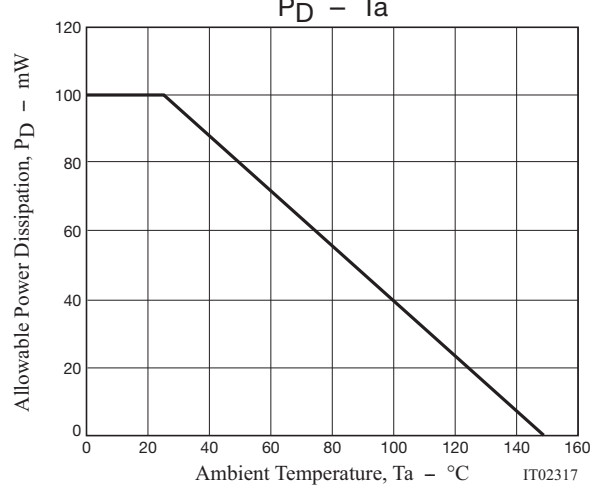
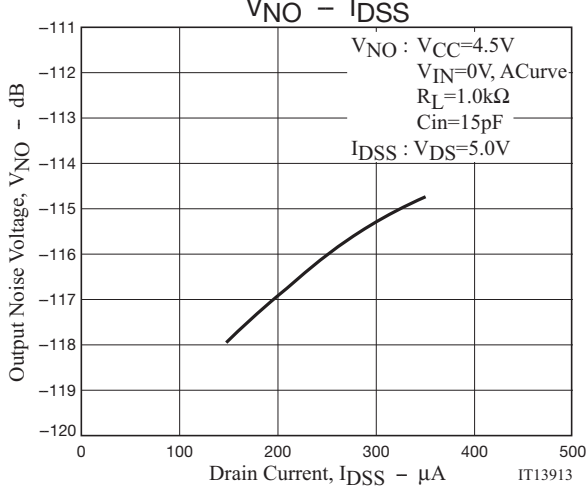
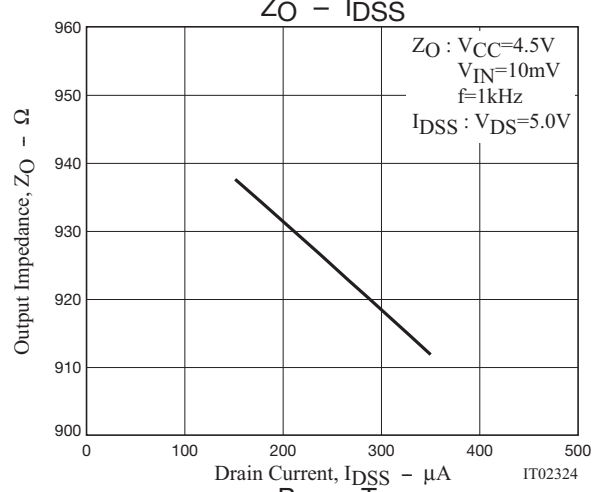
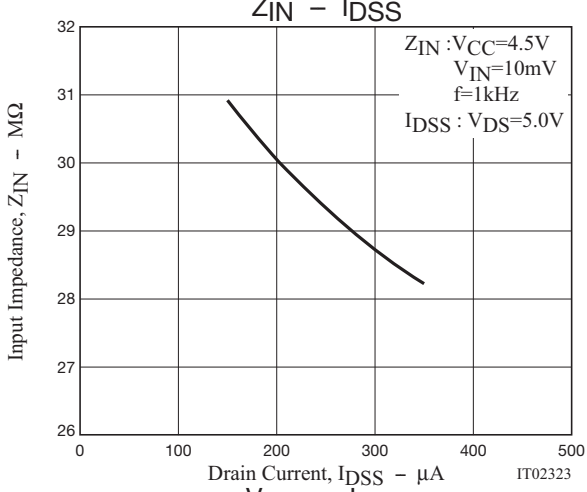
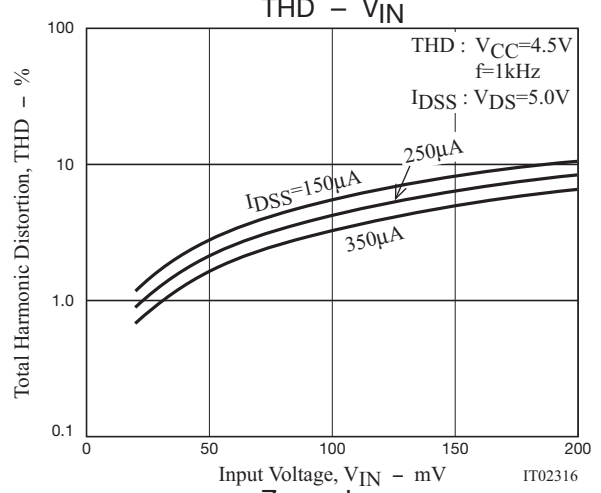
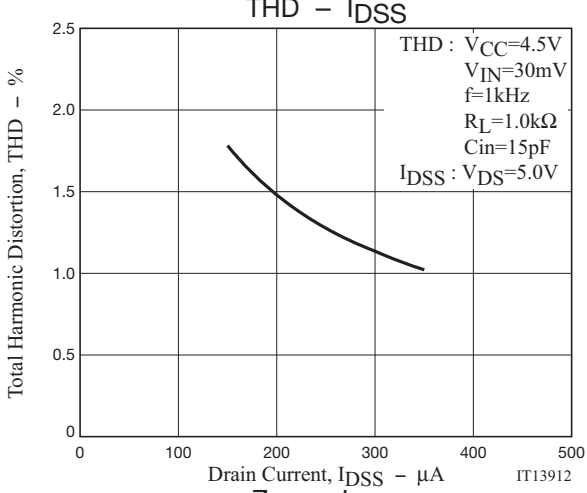
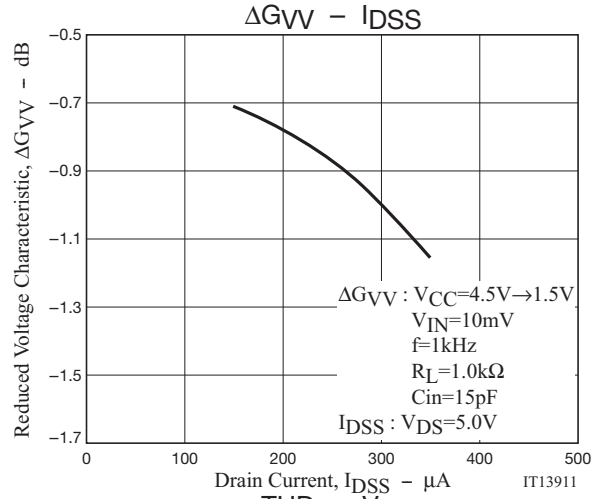
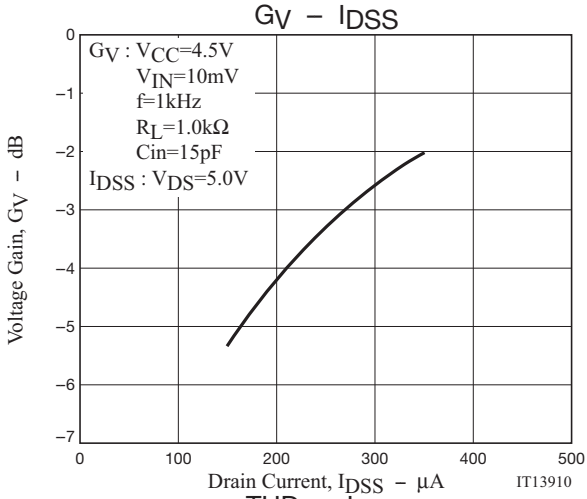
- Voltage gain
- Frequency Characteristic
- Distortion
- Reduced Voltage Characteristic



Ordering Information

| Device | Package | Shipping | memo |
|-----------------|---------|----------------|--------------------------|
| TF202THC-4-TL-H | VTFP | 8,000pcs./reel | Pb Free and Halogen Free |
| TF202THC-5-TL-H | VTFP | 8,000pcs./reel | |

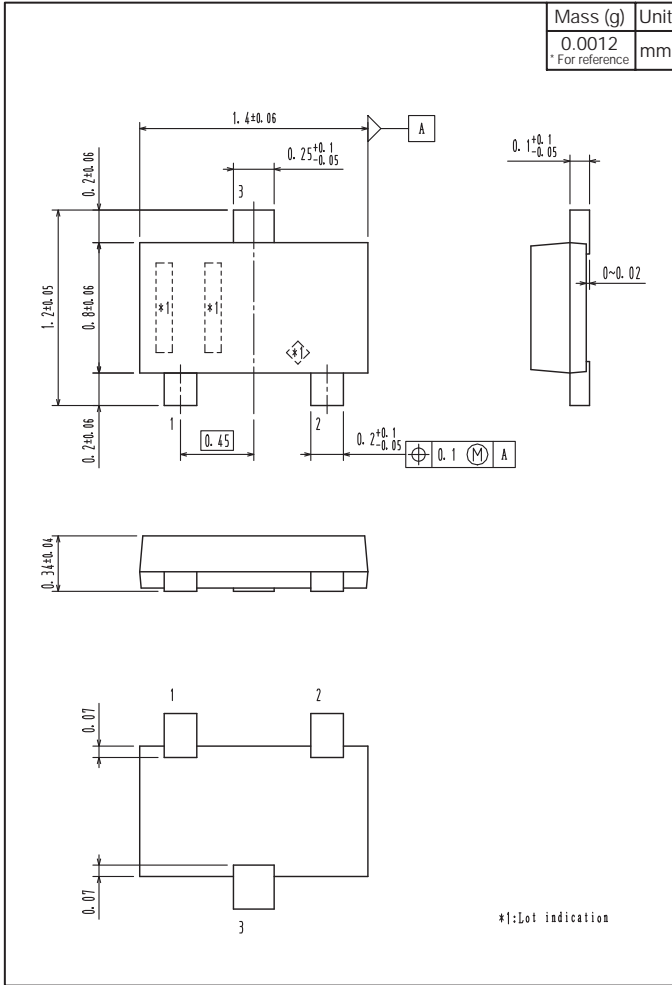




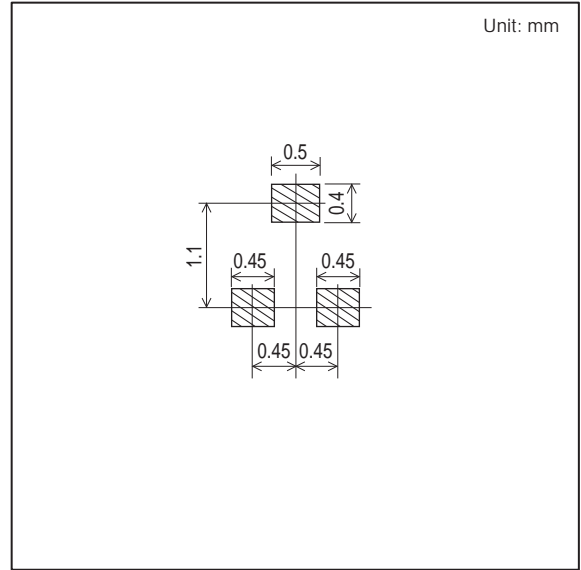
TF202THC

Outline Drawing

TF202THC-4-TL-H, TF202THC-5-TL-H



Land Pattern Example



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