



# TF202THC

## N-Channel JFET 20V, 140 to 350 $\mu$ A, 1.0mS, VTFP

ON Semiconductor®

<http://onsemi.com>

### 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

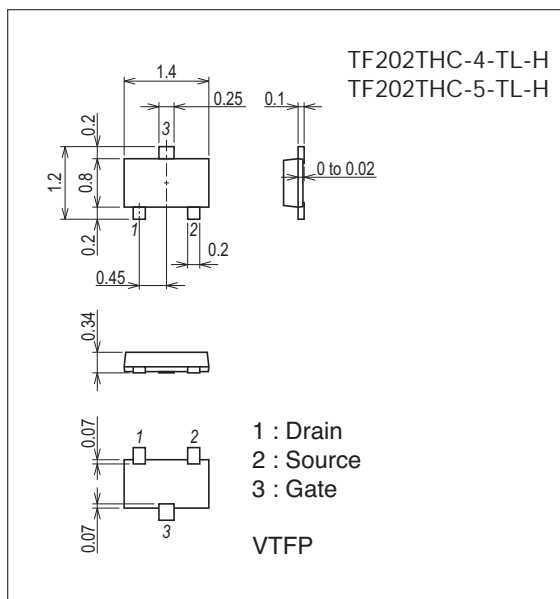
Parameter	Symbol	Conditions	Ratings	Unit
Gate to Drain Voltage	VGDO		-20	V
Gate Current	IG		10	mA
Drain Current	ID		1	mA
Allowable Power Dissipation	PD		100	mW
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

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)

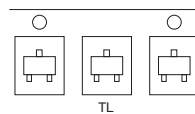
7031A-001



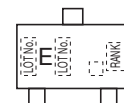
### Product & Package Information

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

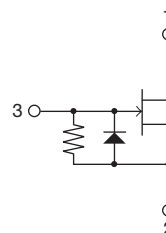
### Packing Type: TL



### 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 <sub>G</sub> =-100μA	-20			V
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =1μA	-0.2	-0.6	-1.0	V
Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =5V, V <sub>GS</sub> =0V	140*		350*	μA
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =5V, V <sub>GS</sub> =0V, f=1kHz	0.5	1.0		mS
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =5V, V <sub>GS</sub> =0V, f=1MHz		3.5		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =5V, V <sub>GS</sub> =0V, f=1MHz		0.65		pF
[Ta=25°C, V <sub>CC</sub> =4.5V, R <sub>L</sub> =1kΩ, C <sub>in</sub> =15pF, See specified Test Circuit.]						
Voltage Gain	GV	V <sub>IN</sub> =10mV, f=1kHz		-3.0		dB
Reduced Voltage Characteristic	ΔGV	V <sub>IN</sub> =10mV, f=1kHz, V <sub>CC</sub> =4.5V → 1.5V		-1.2	-3.5	dB
Frequency Characteristic	ΔGv <sub>f</sub>	f=1kHz to 110Hz			-1.0	dB
Input Impedance	Z <sub>IN</sub>	f=1kHz	25			MΩ
Output Impedance	Z <sub>O</sub>	f=1kHz		1000		Ω
Total Harmonic Distortion	THD	V <sub>IN</sub> =30mV, f=1kHz		1.2		%
Output Noise Voltage	V <sub>NO</sub>	V <sub>IN</sub> =0V, A Curve			-110	dB

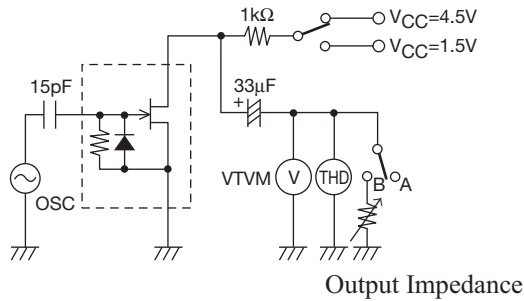
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

\* : The TF202THC is classified by I<sub>DSS</sub> as follows : (unit : μA)

Rank	4	5
I <sub>DSS</sub>	140 to 240	210 to 350

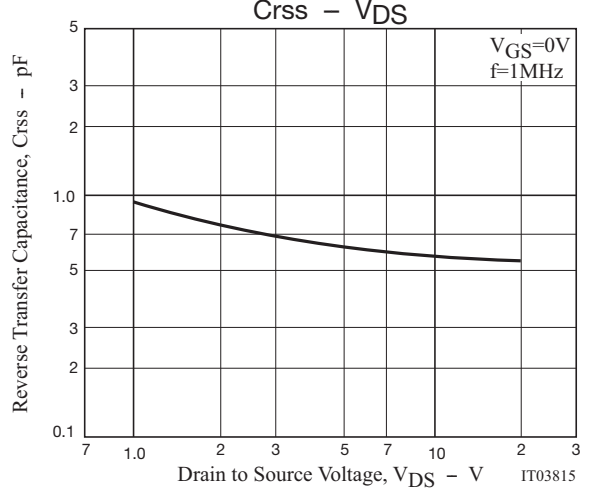
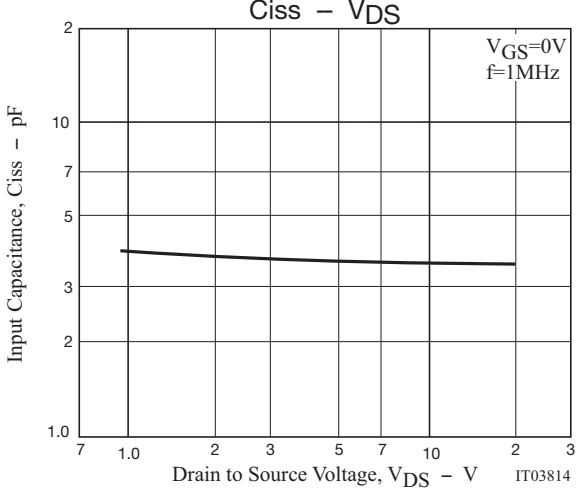
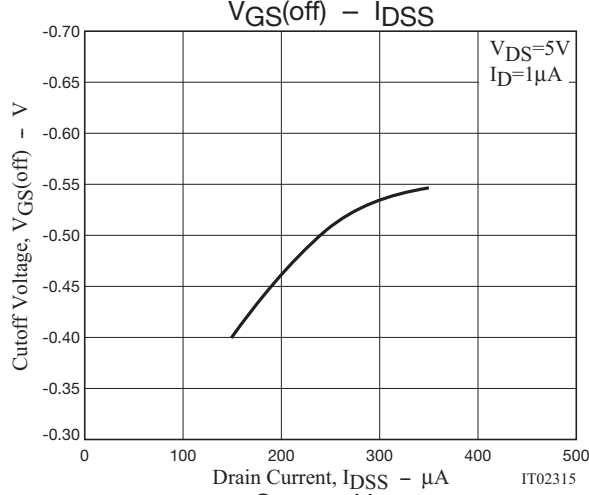
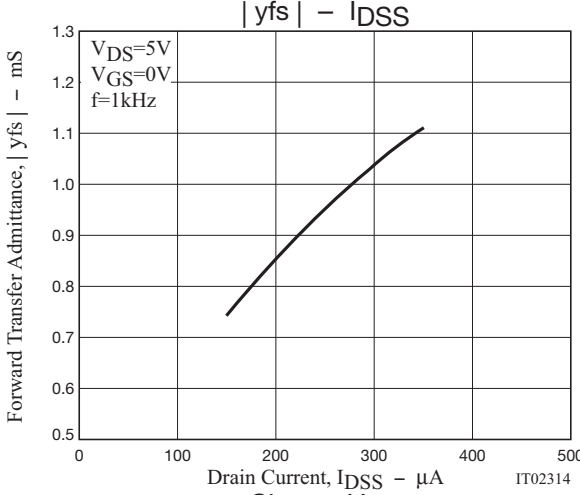
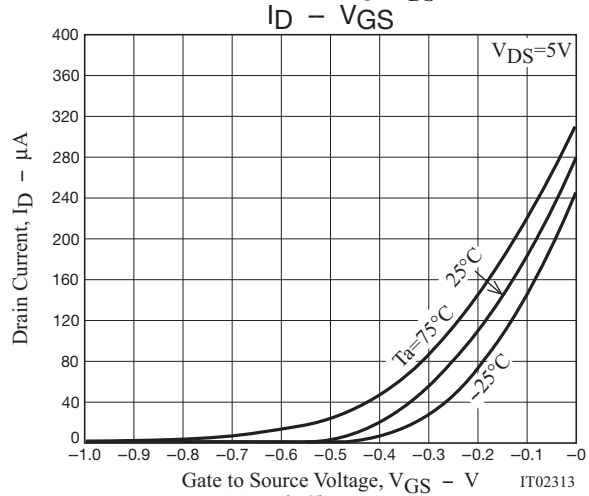
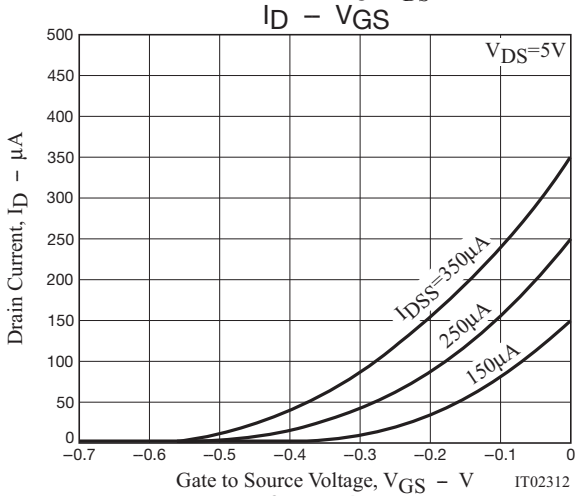
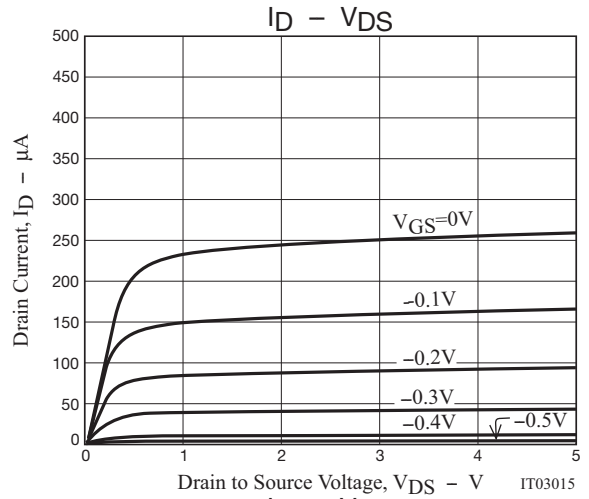
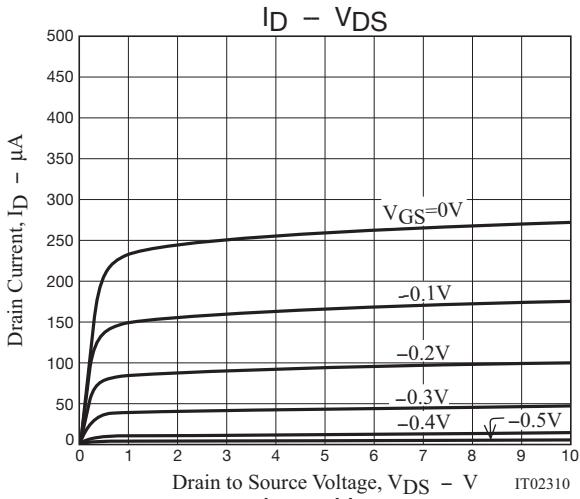
### Test Circuit

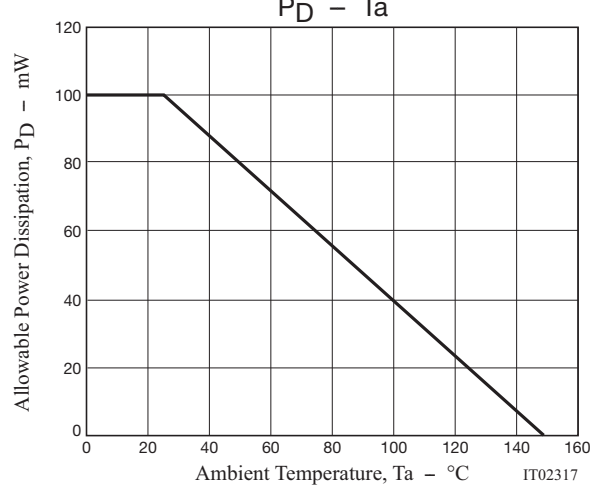
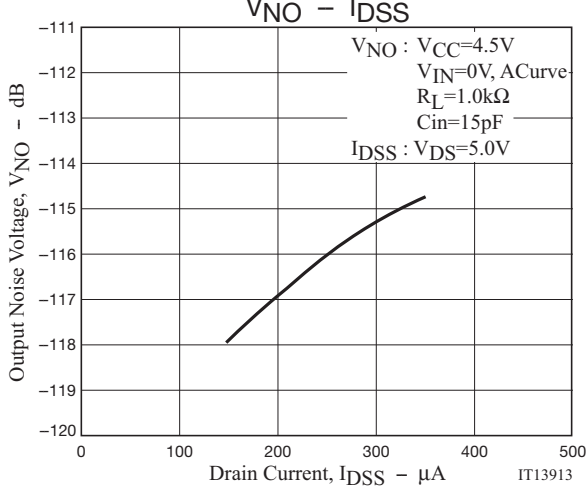
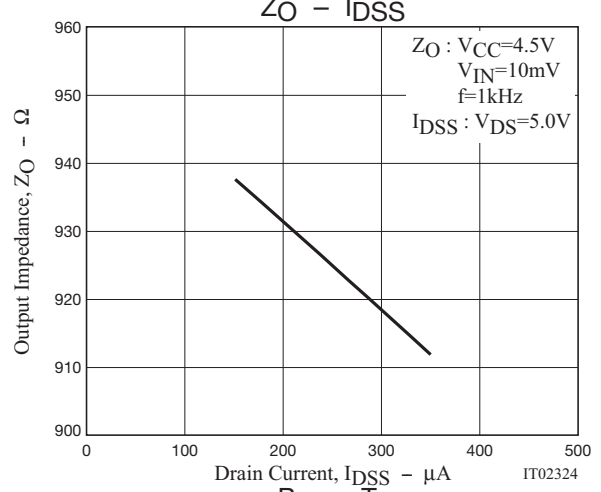
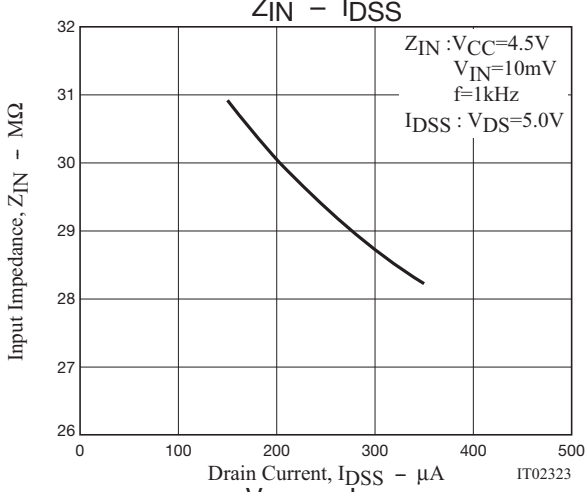
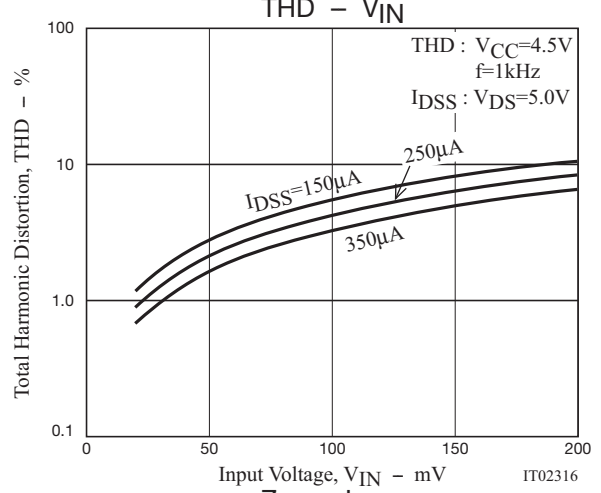
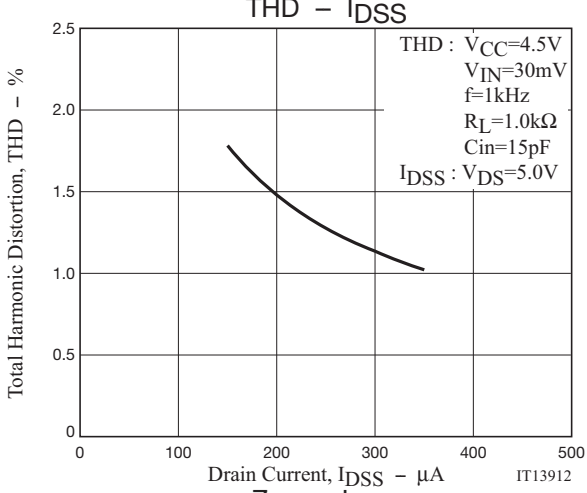
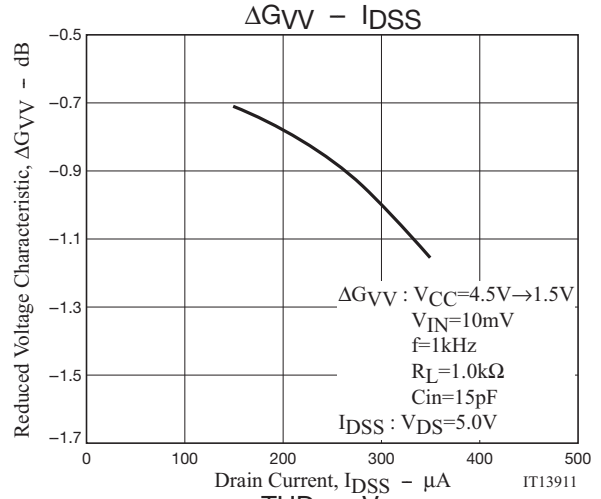
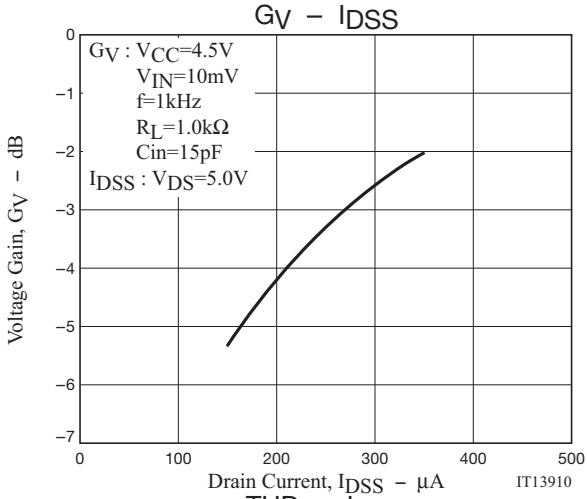
- Voltage gain
- Frequency Characteristic
- Distortion
- Reduced Voltage Characteristic



### 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	

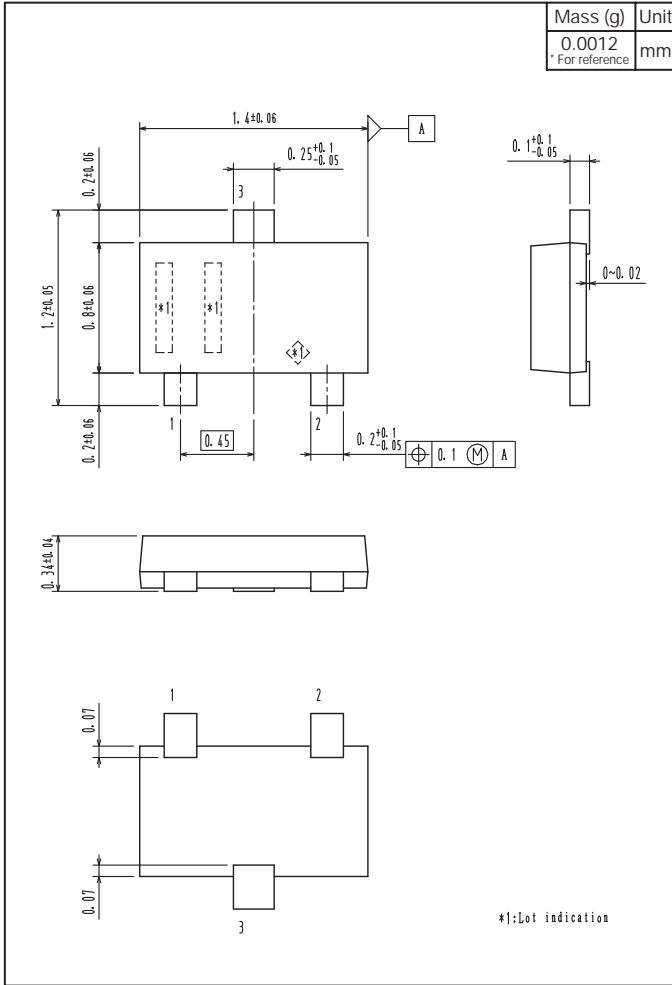




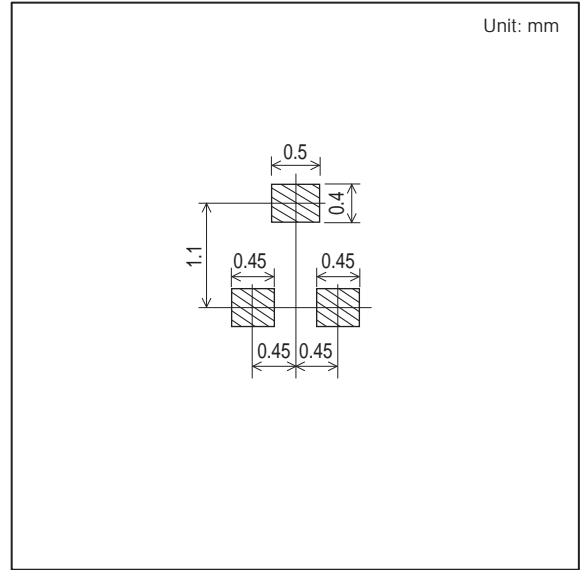
# TF202THC

## Outline Drawing

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



## Land Pattern Example



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