

# TF262TH



## N-Channel JFET -20V, 140 to 350 $\mu$ A, 0.95mS

ON Semiconductor®

www.onsemi.com

### Features

- Low Output Noise Voltage :  $V_{NO} = -112\text{dB typ.}$  ( $V_{CC}=2\text{V}$ ,  $R_L=2.2\text{k}\Omega$ ,  $C_{in}=5\text{pF}$ )
- Ultrasmall Package Facilitates Miniaturization in End Products :  $1.4\text{mm} \times 1.2\text{mm} \times 0.34\text{mm}$
- Especially Suited for use in electret condenser microphone for audio equipments and telephones
- Adoption of FBET process
- Halogen Free compliance

### Specifications

Absolute Maximum Ratings at  $T_a=25^\circ\text{C}$

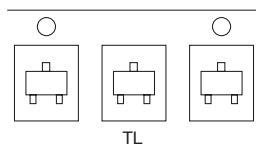
| Parameter                   | Symbol    | Conditions | Ratings     | Unit             |
|-----------------------------|-----------|------------|-------------|------------------|
| Gate to Drain Voltage       | $V_{GDO}$ |            | -20         | V                |
| Gate Current                | $I_G$     |            | 10          | mA               |
| Drain Current               | $I_D$     |            | 1           | mA               |
| Allowable Power Dissipation | $P_D$     |            | 100         | mW               |
| Junction Temperature        | $T_J$     |            | 150         | $^\circ\text{C}$ |
| Storage Temperature         | $T_{stg}$ |            | -55 to +150 | $^\circ\text{C}$ |

This product is designed to "ESD immunity < 200V\*\*", so please take care when handling.

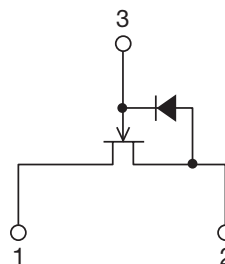
\* Machine Model

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.

### Packing Type : TL



### Electrical Connection

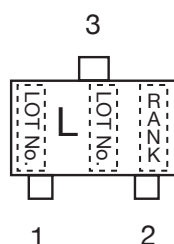


TF262TH-4-TL-H  
TF262TH-5-TL-H

1 : Drain  
2 : Source  
3 : Gate

SOT-623 / VTFP

### Marking



### ORDERING INFORMATION

See detailed ordering and shipping information on page 6 of this data sheet.

# TF262TH

## Electrical Characteristics at Ta=25°C

| Parameter  | Symbol        | Conditions  | Ratings |      |      | Unit    |
|--|---------------|---|---------|------|------|---------|
|  |               |   | min     | typ  | max  |         |
| Gate to Drain Breakdown Voltage  | $V_{(BR)GDO}$ | $I_G = -100\mu A$                                   | -20     |      |      | V       |
| Cutoff Voltage   | $V_{GS(off)}$ | $V_{DS}=2V, I_D=1\mu A$                             | -0.2    | -0.5 | -1.0 | V       |
| Drain Current  | $I_{DSS}$     | $V_{DS}=2V, V_{GS}=0V$                              | 140*    |      | 350* | $\mu A$ |
| Forward Transfer Admittance  | $ y_{fs} $    | $V_{DS}=2V, V_{GS}=0V, f=1kHz$                      | 0.5     | 0.95 |      | mS      |
| Input Capacitance  | $C_{iss}$     | $V_{DS}=2V, V_{GS}=0V, f=1MHz$                      |         | 3.5  |      | pF      |
| Reverse Transfer Capacitance   | $C_{rss}$     | $V_{DS}=2V, V_{GS}=0V, f=1MHz$                      |         | 0.65 |      | pF      |
| [Ta=25°C, $V_{CC}=2.0V, R_L=2.2k\Omega, C_{in}=5pF$ , See specified Test Circuit.] |               |   |         |      |      |         |
| Voltage Gain   | GV            | $V_{IN}=10mV, f=1kHz$                               |         | -1.5 |      | dB      |
| Reduced Voltage Characteristic   | $\Delta GW$   | $V_{IN}=10mV, f=1kHz, V_{CC}=2.0V \rightarrow 1.5V$ |         | -0.8 | -2.0 | dB      |
| Frequency Characteristic   | $\Delta Gvf$  | $f=1kHz$ to 110Hz                                   |         |      | -1.0 | dB      |
| Total Harmonic Distortion  | THD           | $V_{IN}=30mV, f=1kHz$                               |         | 0.5  |      | %       |
| Output Noise Voltage   | $V_{NO}$      | $V_{IN}=0V, A$ Curve                                |         | -112 |      | dB      |

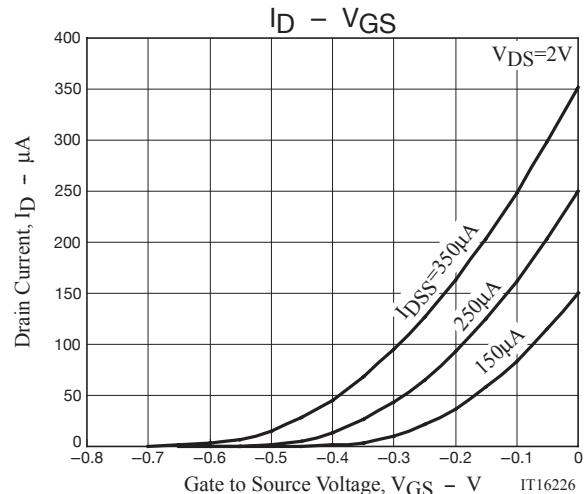
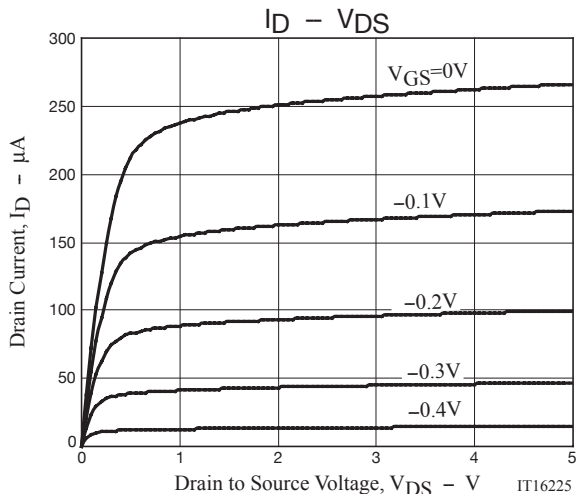
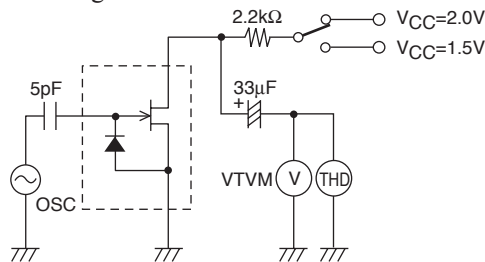
\* : The TF262TH is classified by  $I_{DSS}$  as follows : (unit :  $\mu A$ )

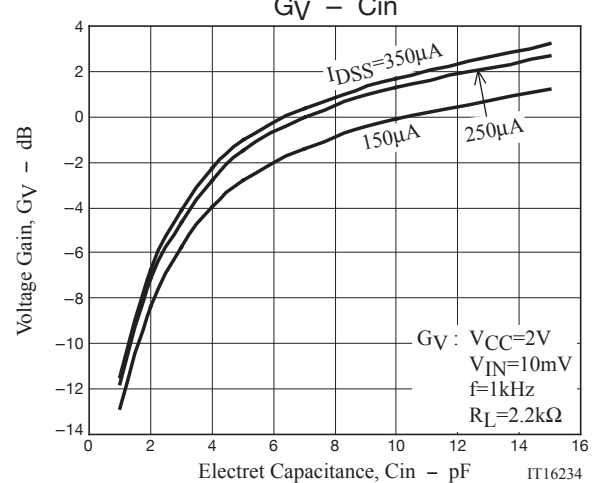
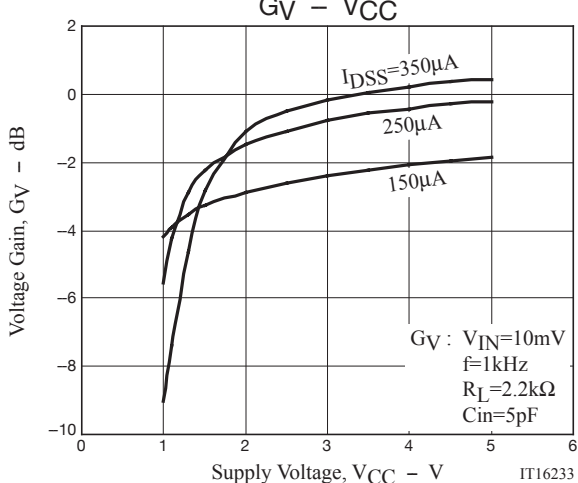
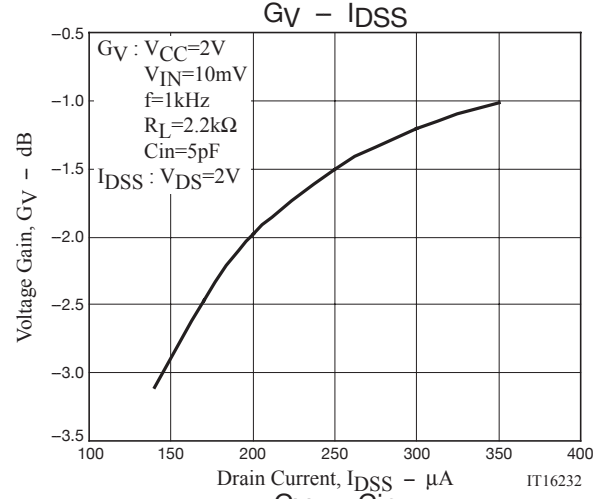
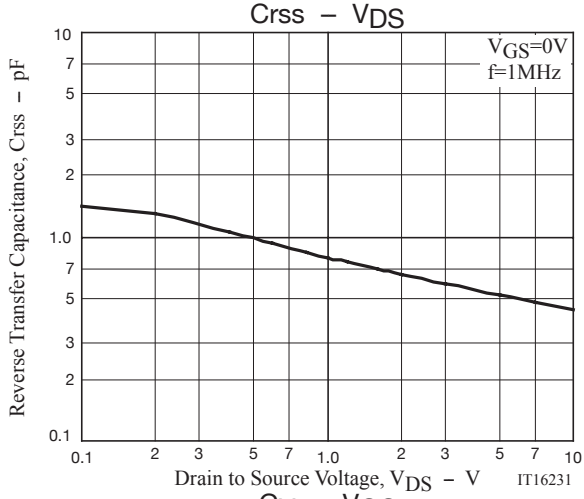
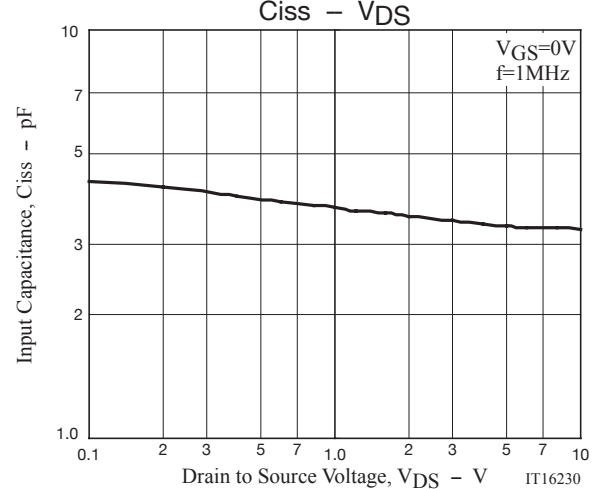
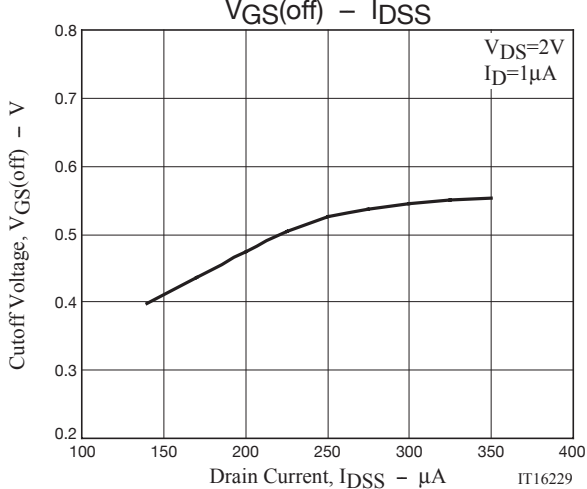
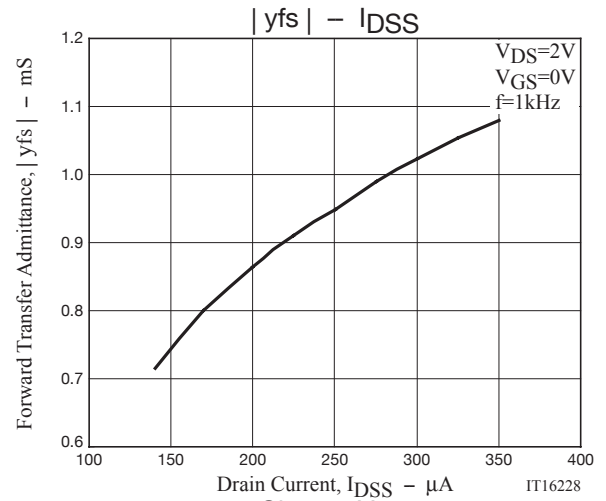
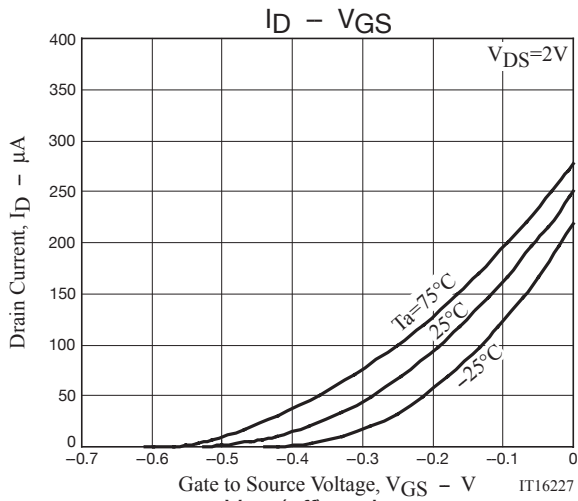
|           |            |            |
|-----------|------------|------------|
| Marking   | L4         | L5         |
| Rank      | 4          | 5          |
| $I_{DSS}$ | 140 to 240 | 210 to 350 |

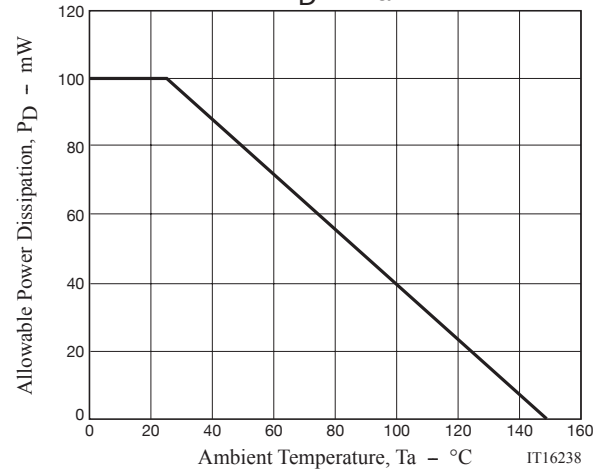
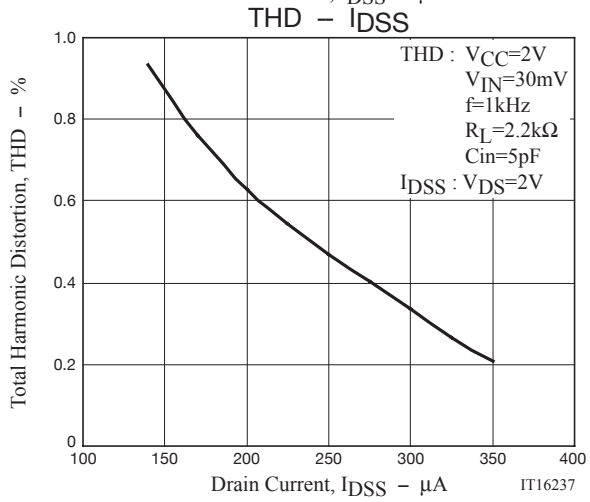
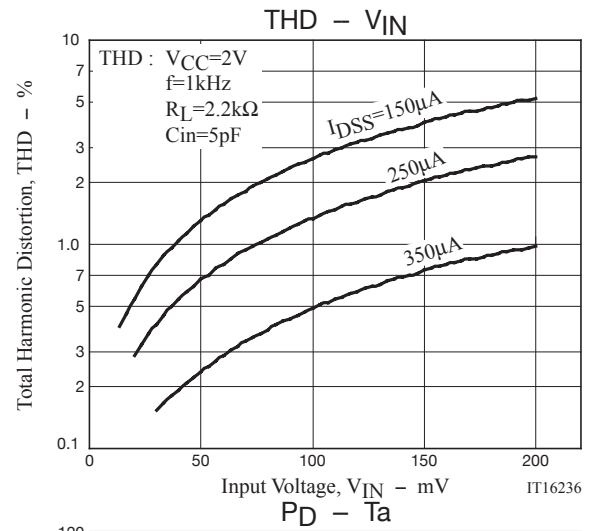
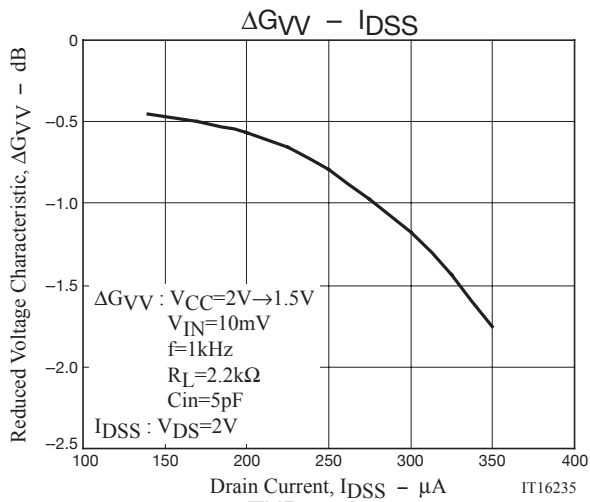
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

## Test Circuit

Voltage gain  
Frequency Characteristic  
Distortion  
Reduced Voltage Characteristic







## Package Dimensions

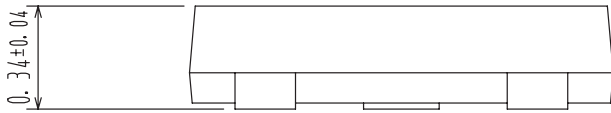
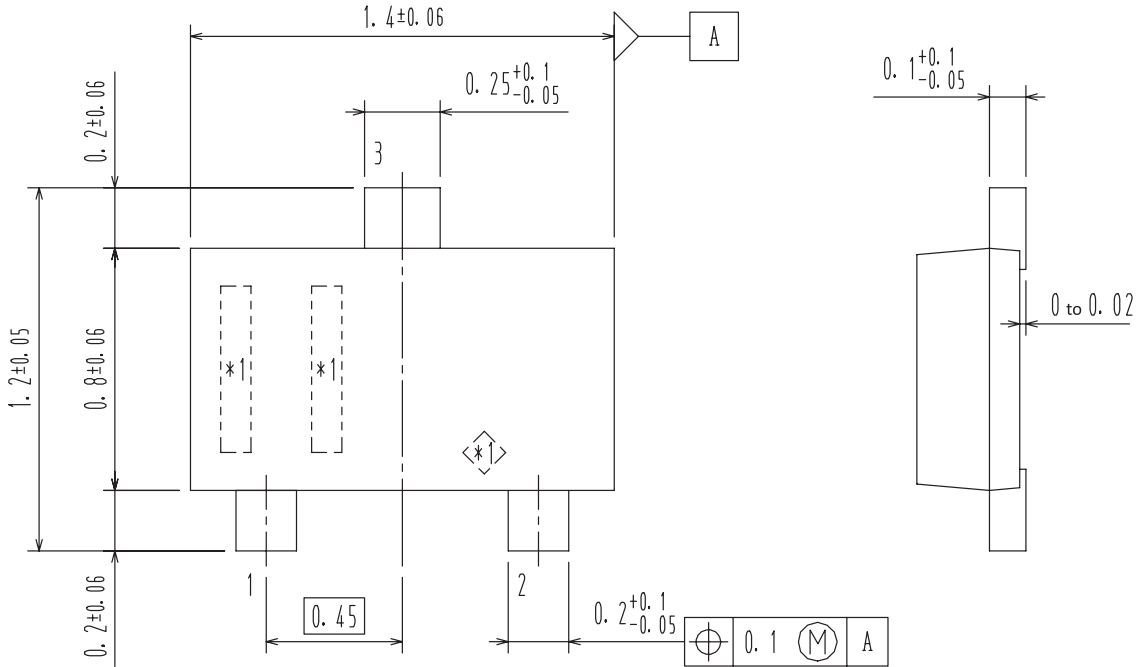
unit : mm

TF262TH-4-TL-H, TF262TH-5-TL-H

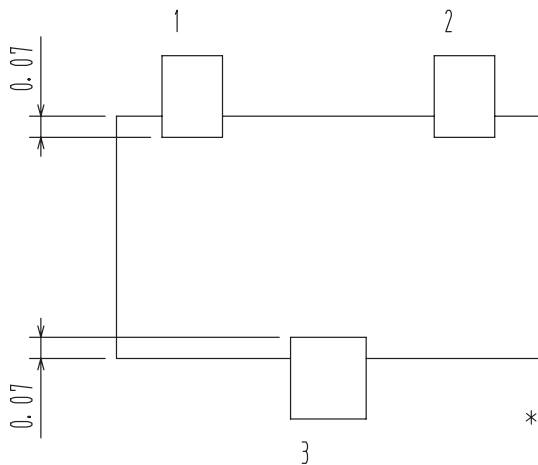
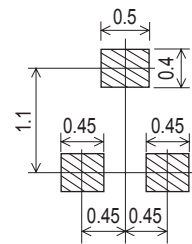
### SOT-623 / VTFP

CASE 631AD

ISSUE O



### Recommended Soldering Footprint



\*1: Lot indication

## ORDERING INFORMATION

| Device         | Package        | Shipping                  | memo                     |
|----------------|----------------|---------------------------|--------------------------|
| TF262TH-4-TL-H | SOT-623 / VTFP | 8,000pcs. / Tape and Reel | Pb-Free and Halogen Free |
| TF262TH-5-TL-H |                |                           |                          |

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