



# TF410

## N-Channel JFET 40V, 50 to 130 $\mu$ A, 0.11mS, USFP

ON Semiconductor®

<http://onsemi.com>

### Applications

- Impedance conversion, infrared sensor applications

### Features

- Ultrasmall package facilities miniaturization in end products : 1.0mm×0.6mm×0.27mm (max 0.3mm)
- Small IGSS : max -500pA (VGSS= -20V, VDS=0V)
- Small Ciss : typ. 0.7pF (VDS= 10V, VGS=0V, f=1MHz)
- Halogen free compliance

### Specifications

Absolute Maximum Ratings at Ta=25°C

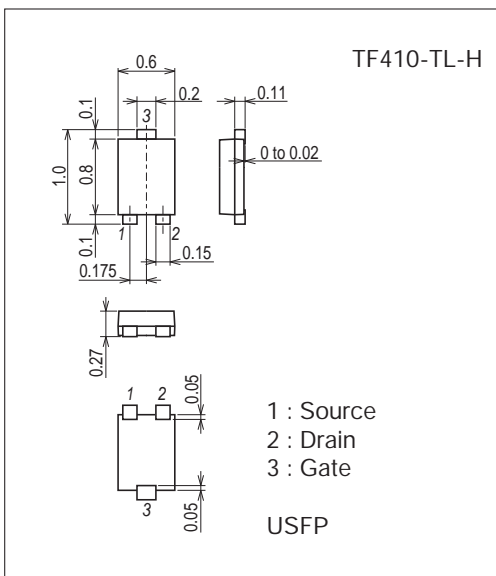
| Parameter                   | Symbol           | Conditions | Ratings     | Unit |
|-----------------------------|------------------|------------|-------------|------|
| Drain-to-Source Voltage     | V <sub>DSS</sub> |            | 40          | V    |
| Gate-to-Drain Voltage       | V <sub>GDS</sub> |            | -40         | V    |
| Gate Current                | I <sub>G</sub>   |            | 10          | mA   |
| Drain Current               | I <sub>D</sub>   |            | 1           | mA   |
| Allowable Power Dissipation | P <sub>D</sub>   |            | 30          | mW   |
| Junction Temperature        | T <sub>j</sub>   |            | 150         | °C   |
| Storage Temperature         | T <sub>stg</sub> |            | -55 to +150 | °C   |

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

### Package Dimensions

unit : mm (typ)

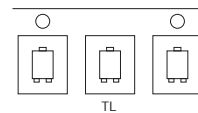
7055-003



### Product & Package Information

- Package : USFP
- JEITA, JEDEC : -
- Minimum Packing Quantity : 10,000 pcs./reel

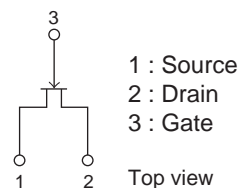
### Packing Type: TL



### Marking



### Electrical Connection



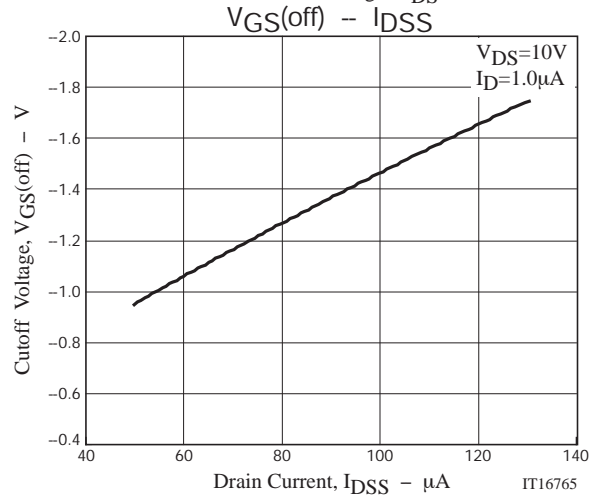
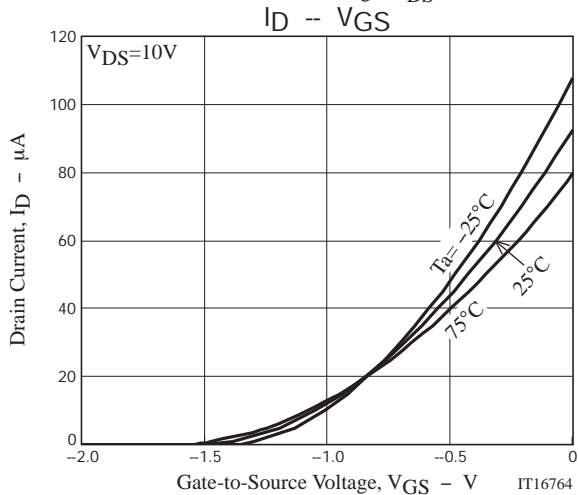
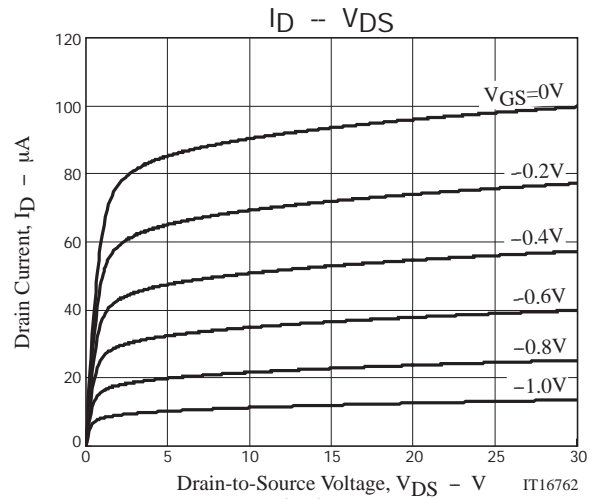
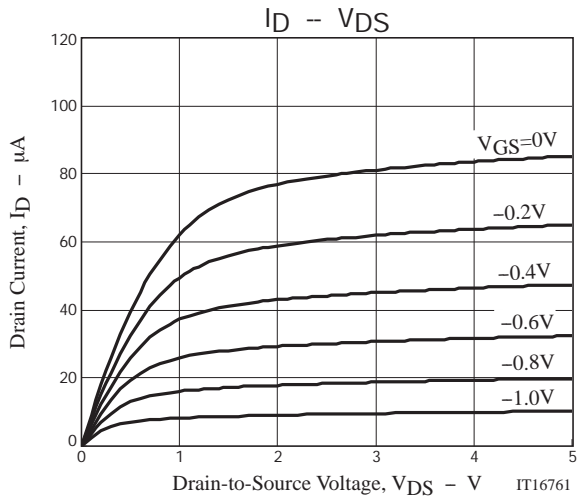
# TF410

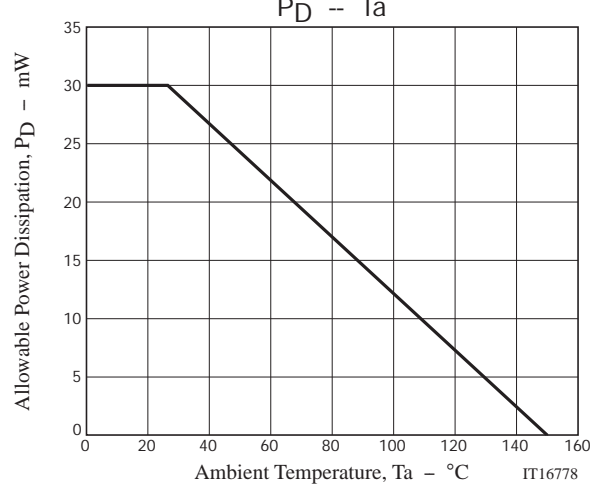
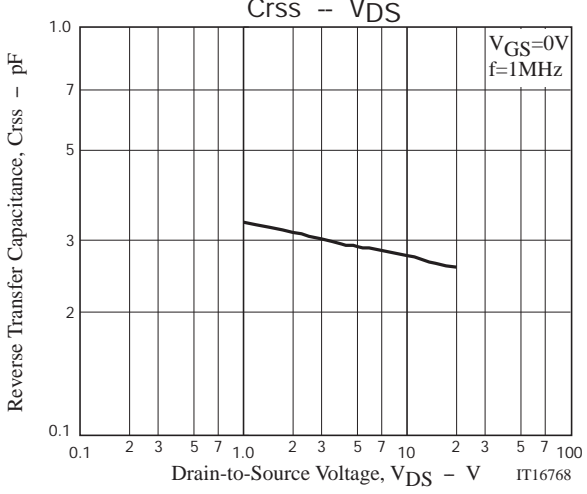
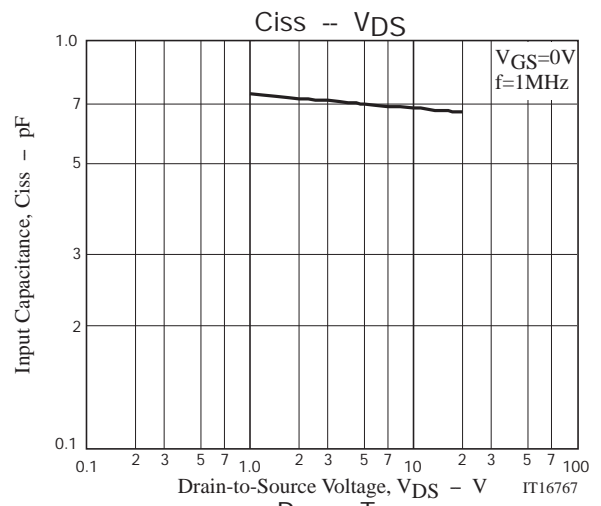
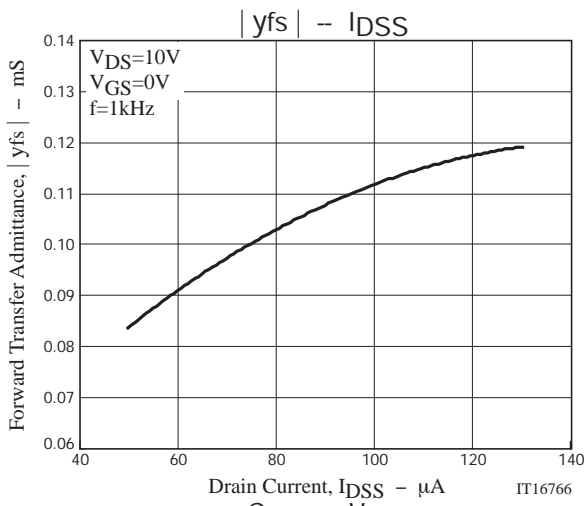
## Electrical Characteristics at Ta=25°C

| Parameter                       | Symbol               | Conditions  | Ratings |      |      | Unit |
|---------------------------------|----------------------|---|---------|------|------|------|
|                                 |                      |   | min     | typ  | max  |      |
| Gate-to-Drain Breakdown Voltage | V(BR)GDS             | I <sub>G</sub> =-10μA, V <sub>DS</sub> =0V        | -40     |      |      | V    |
| Gate-to-Source Leakage Current  | I <sub>GSS</sub>     | V <sub>GS</sub> =-20V, V <sub>DS</sub> =0V        |         |      | -500 | pA   |
| Cutoff Voltage                  | V <sub>GS(off)</sub> | V <sub>DS</sub> =10V, I <sub>D</sub> =1μA         |         | -1.4 | -4.0 | V    |
| Drain Current                   | I <sub>DSS</sub>     | V <sub>DS</sub> =10V, V <sub>GS</sub> =0V         | 50      |      | 130  | μA   |
| Forward Transfer Admittance     | y <sub>fs</sub>      | V <sub>DS</sub> =10V, V <sub>GS</sub> =0V, f=1kHz | 0.05    | 0.11 |      | mS   |
| Input Capacitance               | C <sub>iss</sub>     | V <sub>DS</sub> =10V, V <sub>GS</sub> =0V, f=1MHz |         | 0.7  |      | pF   |
| Reverse Transfer Capacitance    | C <sub>rss</sub>     |   |         | 0.3  |      | pF   |

## Ordering Information

| Device     | Package | Shipping        | memo                     |
|------------|---------|-----------------|--------------------------|
| TF410-TL-H | USFP    | 10,000pcs./reel | Pb Free and Halogen Free |





Taping Specification

TF410-TL-H

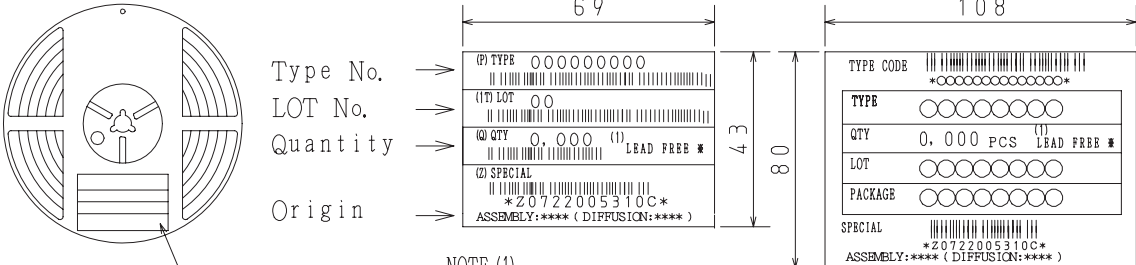
1. Packing Format

| Package Name | Carrier Tape Type | Maximum Number of devices contained (pcs) |           |           | Packing format  |  |
|--------------|-------------------|---|-----------|-----------|---|--|
|              |                   | Reel                                      | Inner box | Outer box | Inner BOX (C-1)   | Outer BOX (A-7)  |
| USFP         | USFP              | 10,000                                    | 50,000    | 300,000   | 5 reels contained<br>Dimensions:mm (external)<br>183×72×185 | 6 inner boxes contained<br>Dimensions:mm (external)<br>440×195×210 |

Packing method

Reel label, Inner box label (unit:mm)      Outer box label

It is a label at the time of factory shipments. The form of a label may change in physical distribution process.

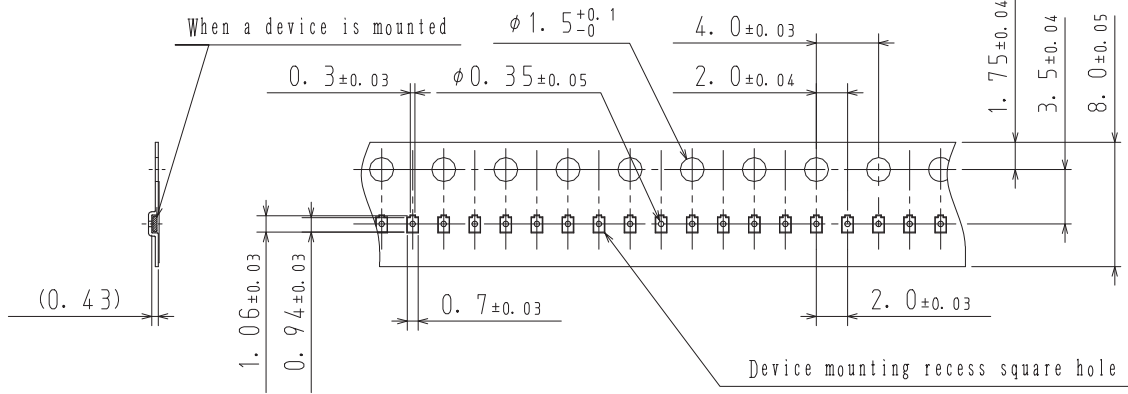


NOTE (1)  
The LEAD FREE \* description shows that the surface treatment of the terminal is lead free.

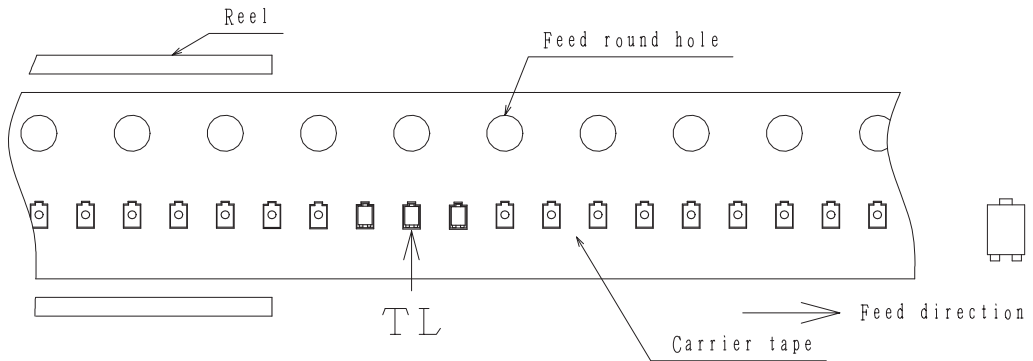
| Label       | JEITA Phase    |
|-------------|----------------|
| LEAD FREE 3 | JEITA Phase 3A |
| LEAD FREE 4 | JEITA Phase 3  |

2. Taping configuration

2-1. Carrier tape size (unit:mm)



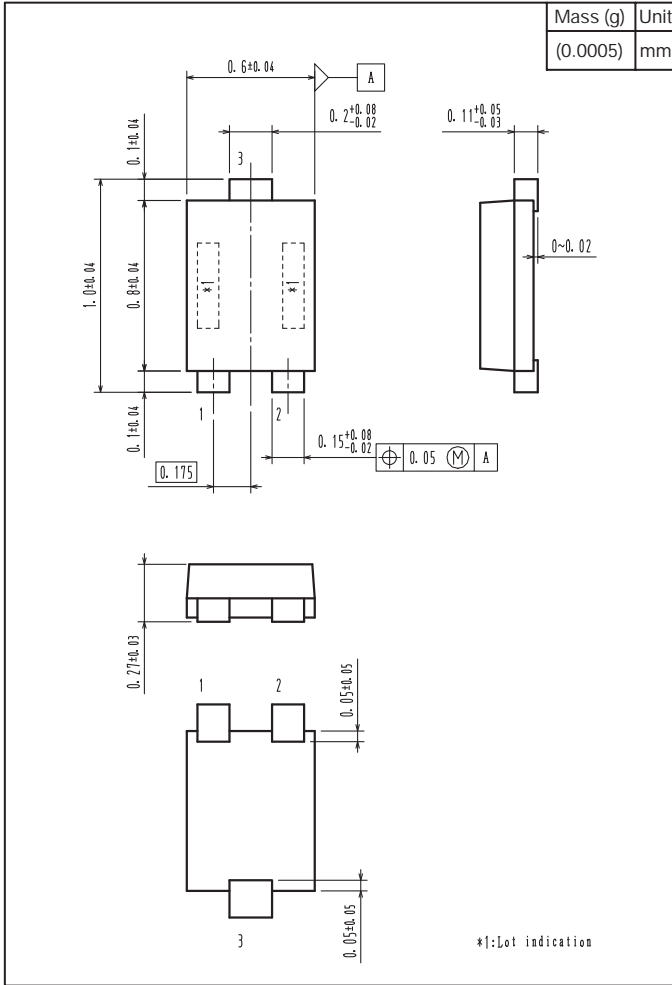
2-2. Device placement direction



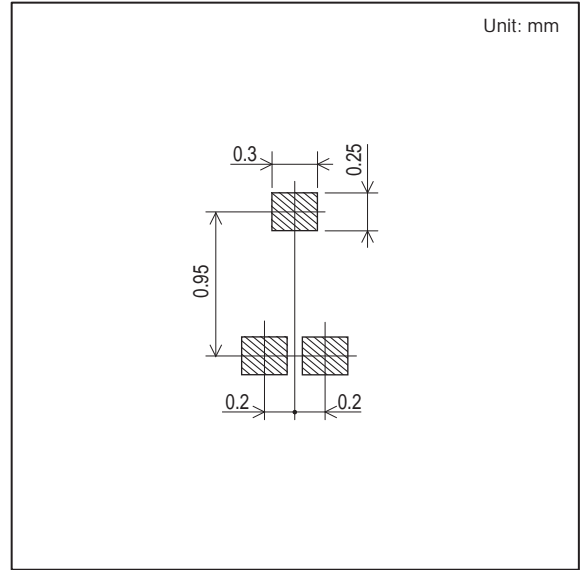
Those with one electrode terminal on the feed hole side.....TL

Outline Drawing

TF410-TL-H



Land Pattern Example



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