



SANYO Semiconductors

## DATA SHEET

An ON Semiconductor Company

N-Channel Silicon Junction FET

# TF408 — Low-Frequency General-Purpose Amplifier, Impedance Converter Applications

## Applications

- Low-Frequency general-purpose amplifier, impedance conversion, infrared sensor applications

## Features

- Ultrasmall package facilitates miniaturization in end products : 1.0mm×0.6mm×0.27mm (max 0.3mm)
- Small  $I_{GSS}$  : max -1.0nA ( $V_{GS} = -20V$ ,  $V_{DS} = 0V$ )
- Small  $C_{iss}$  : typ 4pF ( $V_{DS} = 10V$ ,  $V_{GS} = 0V$ ,  $f = 1MHz$ )
- Halogen free compliance

## Specifications

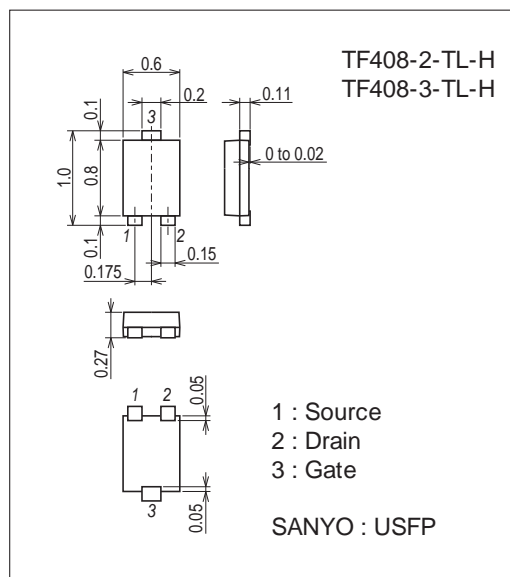
Absolute Maximum Ratings at  $T_a = 25^\circ C$ 

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSX}$		30	V
Gate-to-Drain Voltage	$V_{GDS}$		-30	V
Gate Current	$I_G$		10	mA
Drain Current	$I_D$		10	mA
Allowable Power Dissipation	$P_D$		30	mW
Junction Temperature	$T_j$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$

## Package Dimensions

unit : mm (typ)

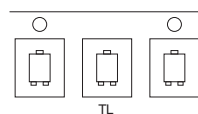
7055-003



## Product & Package Information

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

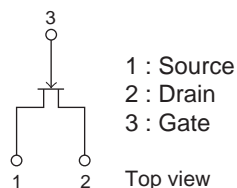
## Packing Type: TL



## Marking



## Electrical Connection



# TF408

## Electrical Characteristics at Ta=25°C

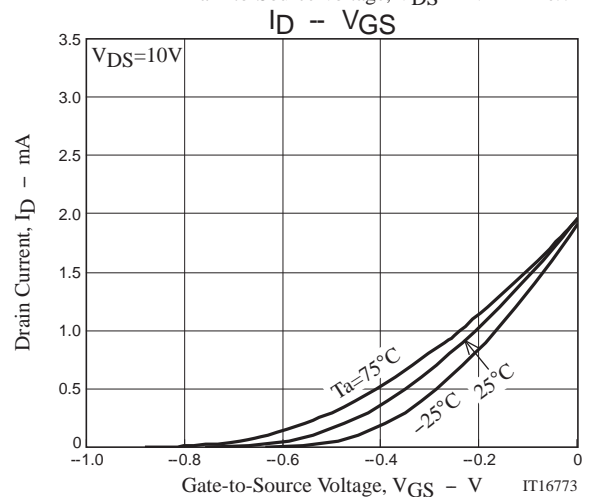
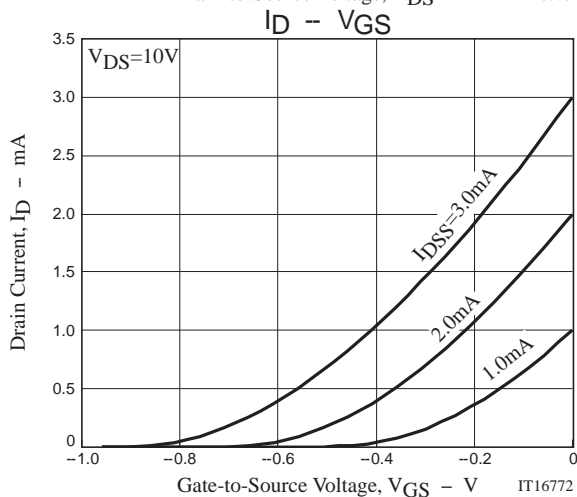
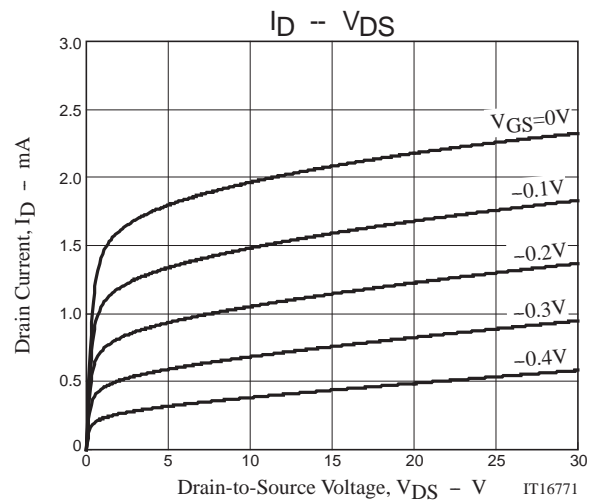
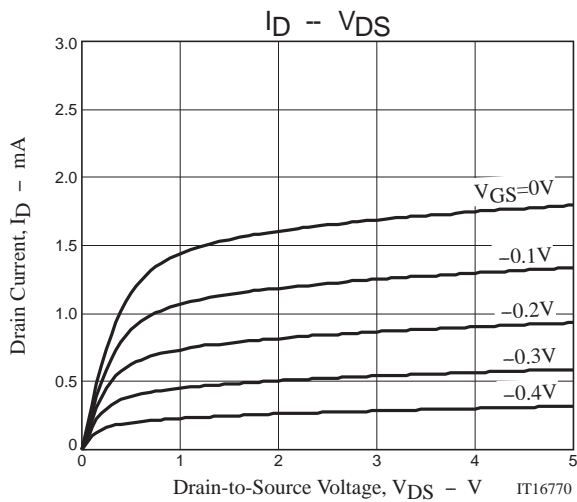
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gate-to-Drain Breakdown Voltage	$V_{(BR)GDS}$	$I_G = -10\mu A, V_{DS} = 0V$	-30			V
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = -20V, V_{DS} = 0V$			-1.0	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10V, I_D = 1\mu A$	-0.18	-0.60	-1.5	V
Drain Current	$I_{DSS}$	$V_{DS} = 10V, V_{GS} = 0V$	0.6*		3.0*	mA
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10V, V_{GS} = 0V, f = 1kHz$	3.0	5.0		mS
Input Capacitance	$C_{iss}$	$V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$		4		pF
Reverse Transfer Capacitance	$C_{rss}$			1.1		pF

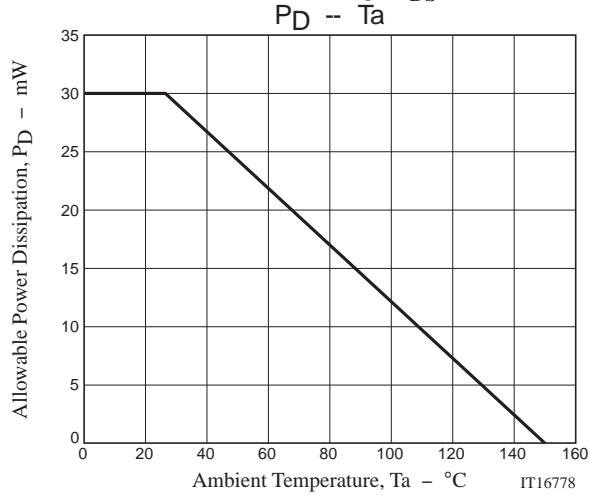
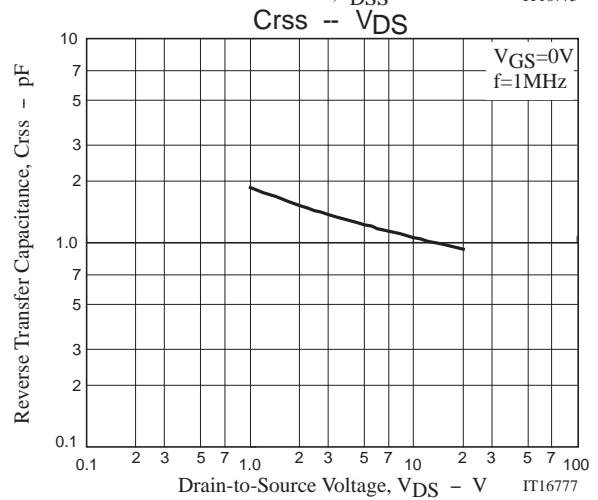
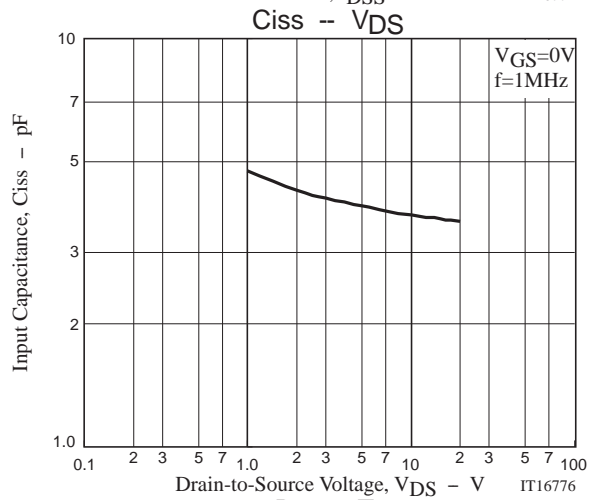
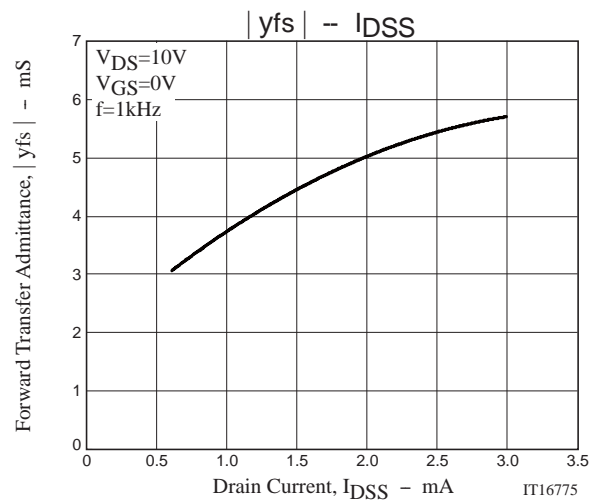
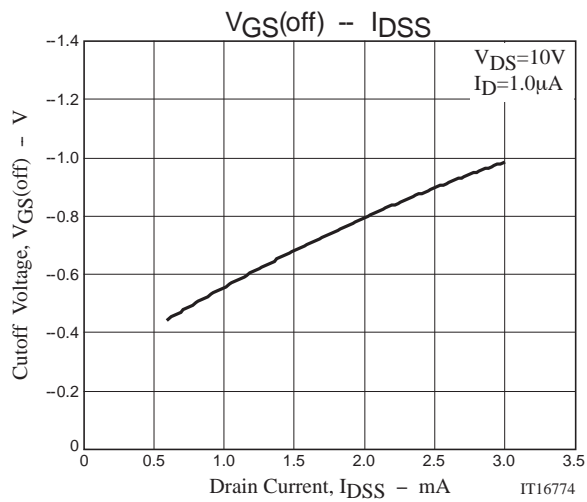
\* : The TF408 is classified by  $I_{DSS}$  as follows : (unit : mA)

Rank	2	3
$I_{DSS}$	0.6 to 1.5	1.2 to 3.0

## Ordering Information

Device	Package	Shipping	memo
TF408-2-TL-H	USFP	10,000pcs./reel	Pb Free and Halogen Free
TF408-3-TL-H	USFP	10,000pcs./reel	





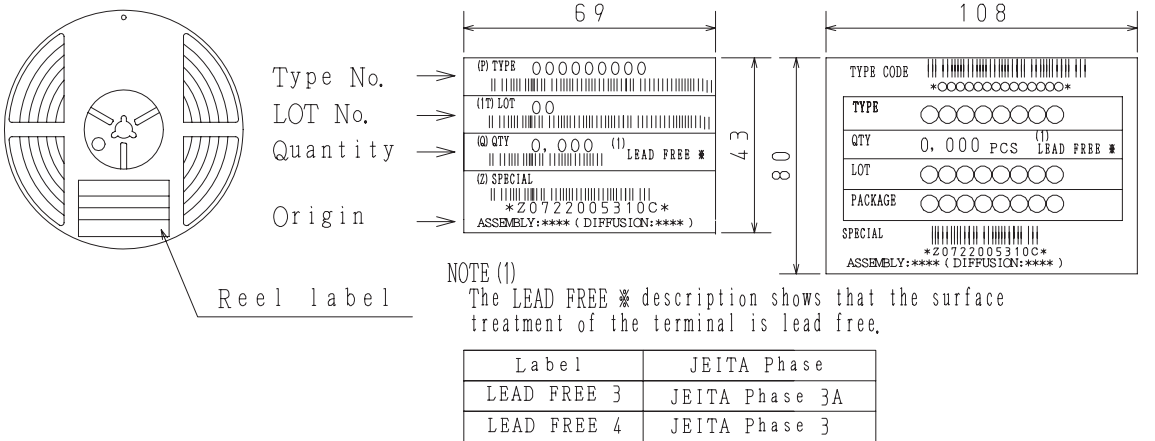
## Taping Specification

TF408-2-TL-H, TF408-3-TL-H

## 1. Packing Format

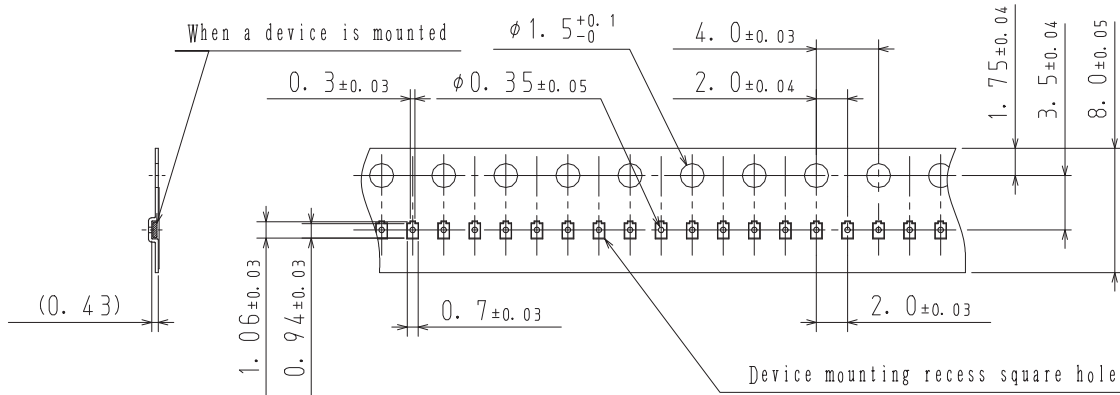
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
USFP	USFP	10,000	50,000	300,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

## Packing method

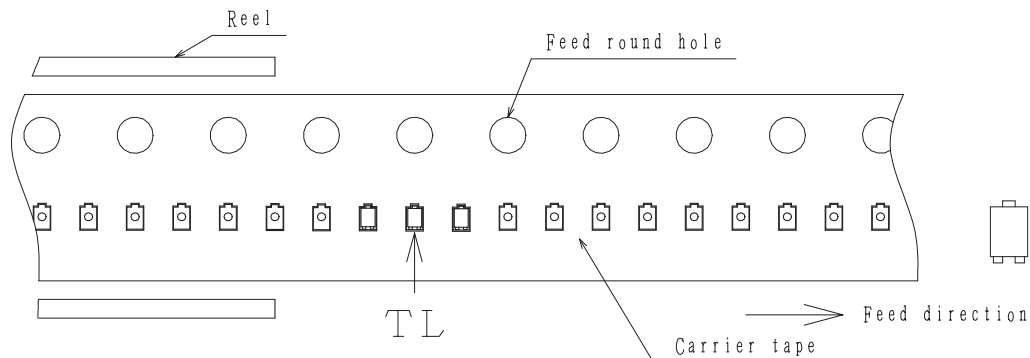


## 2. Taping configuration

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

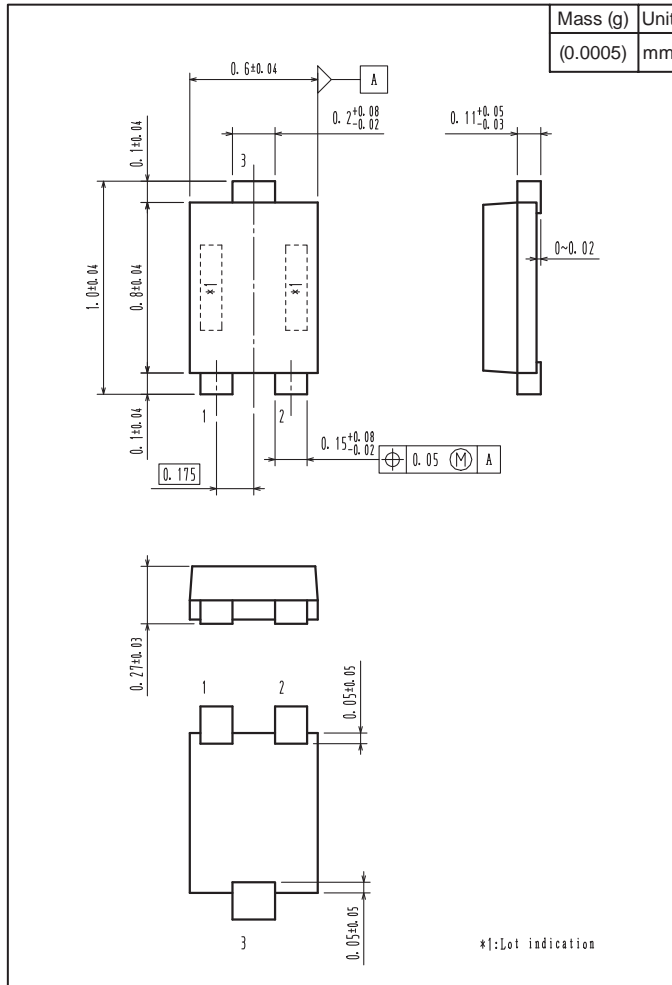


## 2-2. Device placement direction

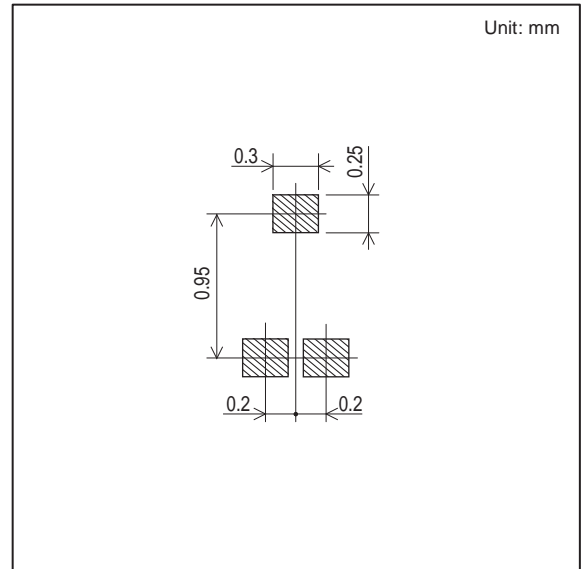


# Outline Drawing

TF408-2-TL-H, TF408-3-TL-H



# Land Pattern Example



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