



# TF208TH — N-channel Silicon Junction FET

## Electret Condenser Microphone Applications

### 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.

### Specifications

#### Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Gate-to-Drain Voltage	V <sub>GDO</sub>		-20	V
Gate Current	I <sub>G</sub>		10	mA
Drain Current	I <sub>D</sub>		1	mA
Allowable Power Dissipation	P <sub>D</sub>		100	mW
Junction Temperature	T <sub>J</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

#### Electrical Characteristics at Ta=25°C (Value per element)

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gate-to-Drain Breakdown Voltage	V <sub>(BR)GDO</sub>	I <sub>G</sub> =-100μA	-20			V
Cutoff Voltage	V <sub>GSO(off)</sub>	V <sub>DS</sub> =2V, I <sub>D</sub> =1μA	-0.1		-1.0	V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =2V, V <sub>GS</sub> =0V	140*		350*	μA
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =2V, V <sub>GS</sub> =0V, f=1kHz	0.5	1.4		mS
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =2V, V <sub>GS</sub> =0V, f=1MHz		5.0		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =2V, V <sub>GS</sub> =0V, f=1MHz		1.1		pF
[Ta=25°C, V <sub>CC</sub> =2.0V, R <sub>L</sub> =2.2kΩ, C <sub>in</sub> =5pF, See specified Test Circuit.]						
Voltage Gain	G <sub>V</sub>	V <sub>IN</sub> =10mV, f=1kHz		-2.0		dB
Reduced Voltage Characteristic	ΔG <sub>VV</sub>	V <sub>IN</sub> =10mV, f=1kHz, V <sub>CC</sub> =2.0→1.5V		-0.6	-2.0	dB
Frequency Characteristic	ΔG <sub>Vf</sub>	f=1kHz to 110Hz			-1.0	dB

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\* : The TF208TH is classified by I<sub>DSS</sub> as follows : (unit : μA)

Rank	B4	B5
I <sub>DSS</sub>	140 to 240	210 to 350

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# TF208TH

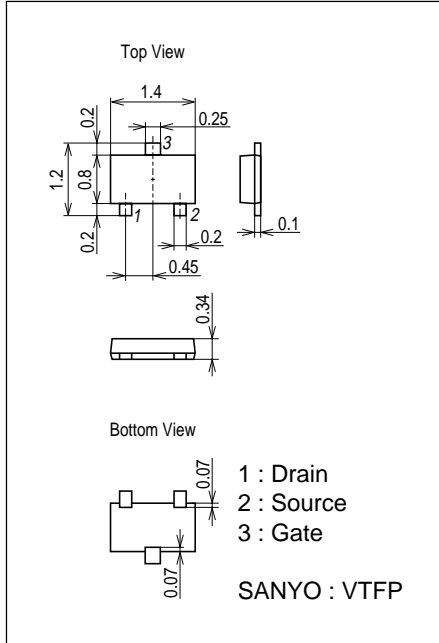
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Harmonic Distortion	THD	$V_{IN}=30mV, f=1kHz$		0.7		%
Output Noise Voltage	VNO	$V_{IN}=0V, A$ curve			-102	dB

## Package Dimensions

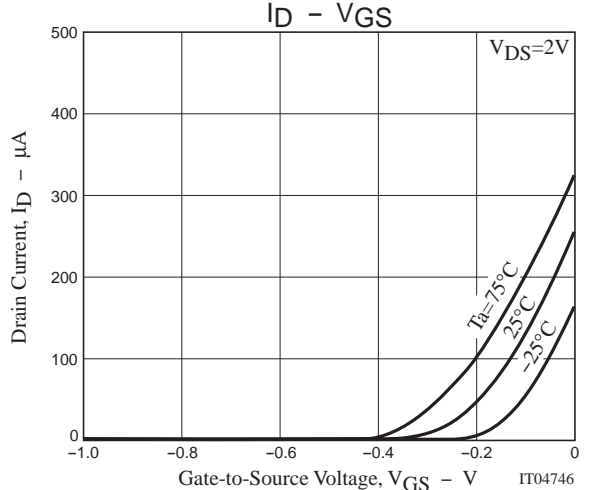
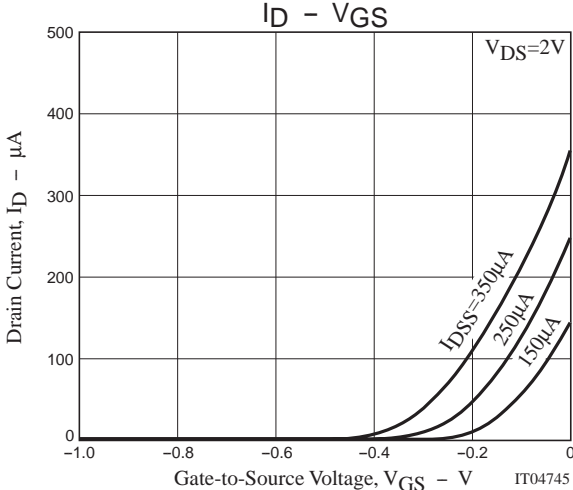
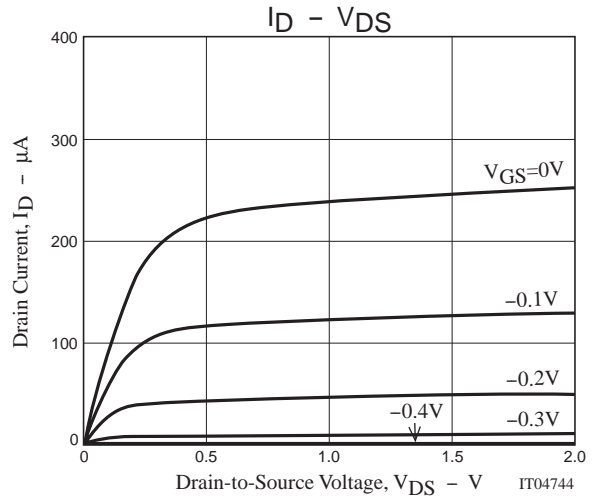
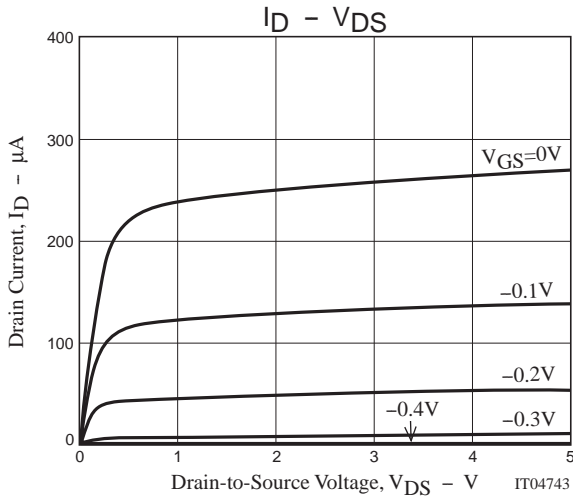
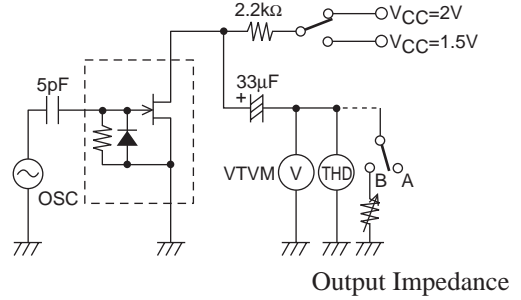
unit : mm

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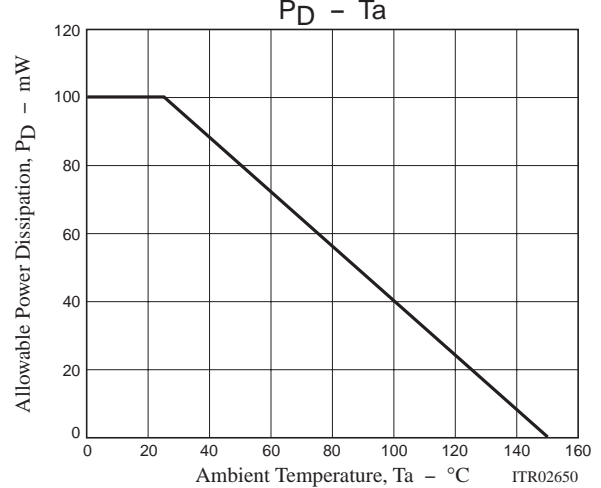
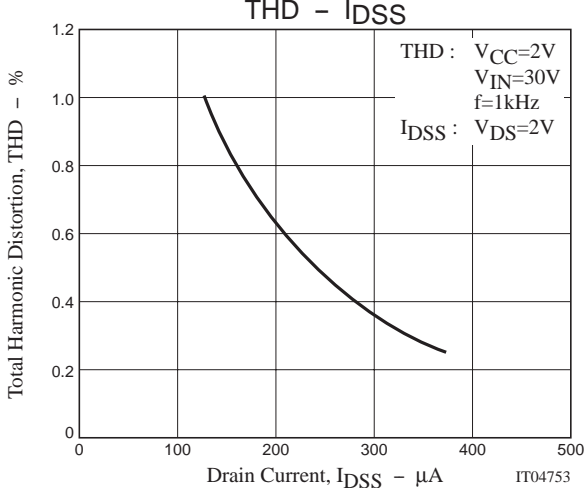
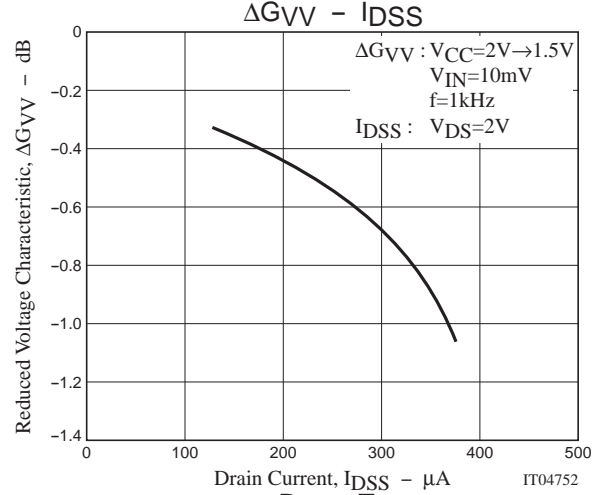
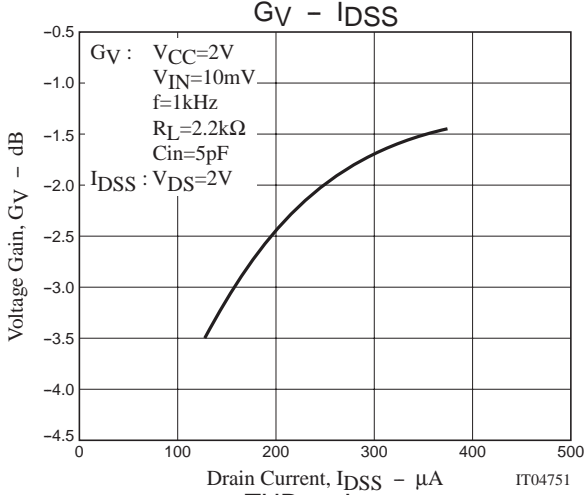
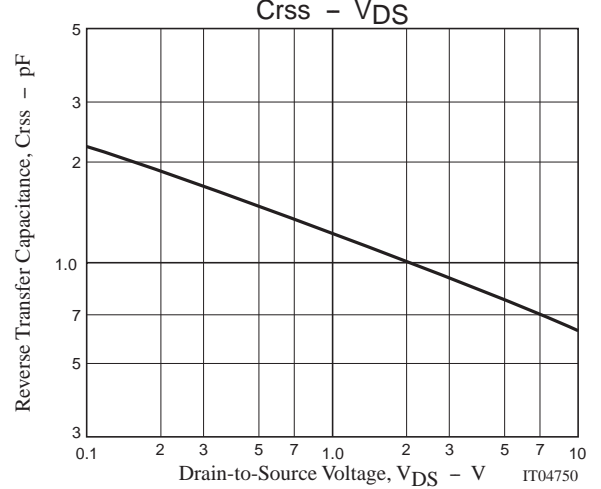
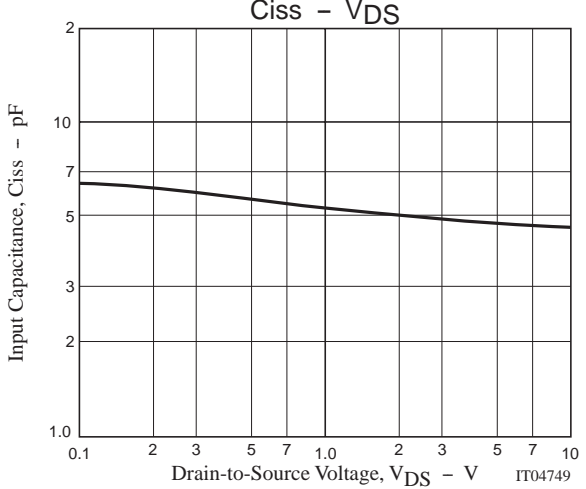
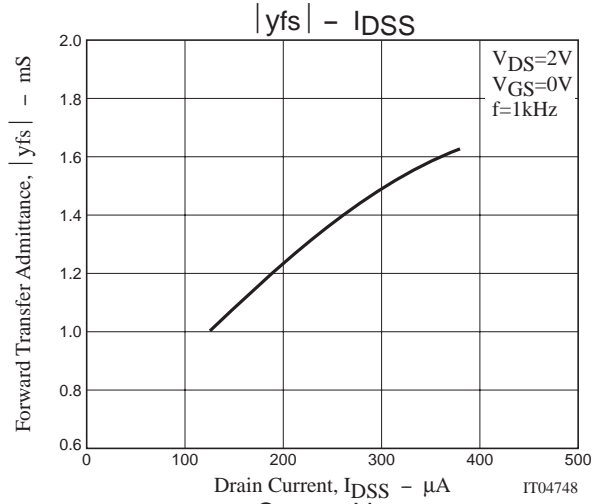
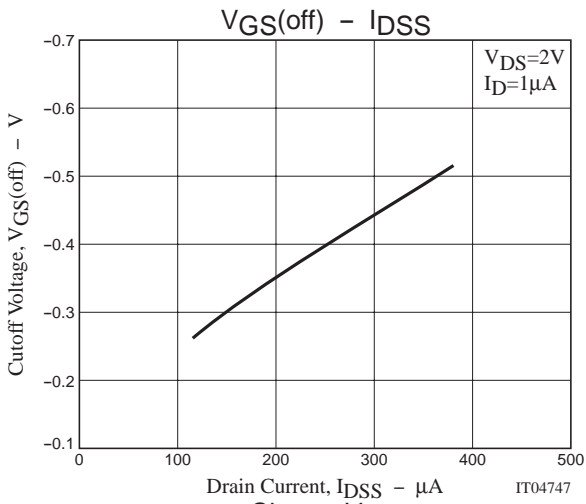


## Test Circuit

Voltage gain  
Frequency Characteristic  
Distortion  
Reduced Voltage Characteristic



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