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SANYO Semiconductors DATA SHEET

TF208TH — Electret Condenser Microphone Applications

N-channel Silicon Junction FET

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 _{GDO}		-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

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

Parameter	Symbol	Conditions	Ratings			Unit	
			min	typ	max	Unit	
Gate-to-Drain Breakdown Voltage	V(BR)GDO	IG=-100μA	-20			V	
Cutoff Voltage	VGS(off)	V _{DS} =2V, I _D =1μA	-0.1		-1.0	V	
Zero-Gate Voltage Drain Current	IDSS	V _{DS} =2V, V _{GS} =0V	140*		350*	μΑ	
Forward Transfer Admittance	yfs	VDS=2V, VGS=0V, f=1kHz	0.5	1.4		mS	
Input Capacitance	Ciss	V _{DS} =2V, V _{GS} =0V, f=1MHz		5.0		pF	
Reverse Transfer Capacitance	Crss	V _{DS} =2V, V _{GS} =0V, f=1MHz		1.1		pF	
[Ta=25°C, VCC=2.0V, RL=2.2kΩ, Cin=5pF, See specified Test Circuit.]							
Voltage Gain	GV	V _{IN} =10mV, f=1kHz		-2.0		dB	
Reduced Voltage Characteristic	ΔG _{VV}	V _{IN} =10mV, f=1kHz, V _{CC} =2.0→1.5V		-0.6	-2.0	dB	
Frequency Characteristic	∆GVf	f=1kHz to 110Hz			-1.0	dB	

Continued on next page.

 \ast : The TF208TH is classified by IDSS as follows : (unit : $\mu A)$

Rank	B4	B5
IDSS	140 to 240	210 to 350

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TF208TH

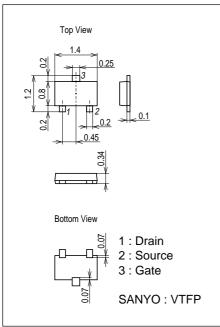
Continued from preceding page.

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

Package Dimensions

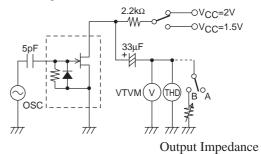
unit: mm 7031-001

300



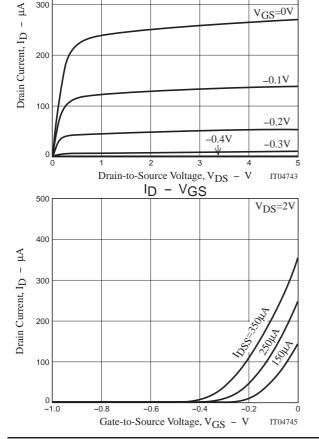
Test Circuit

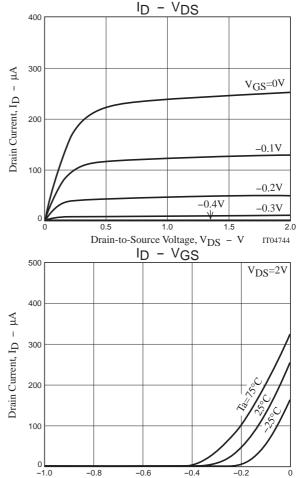
Voltage gain Frequency Characteristic Distortion Reduced Voltage Characteristic





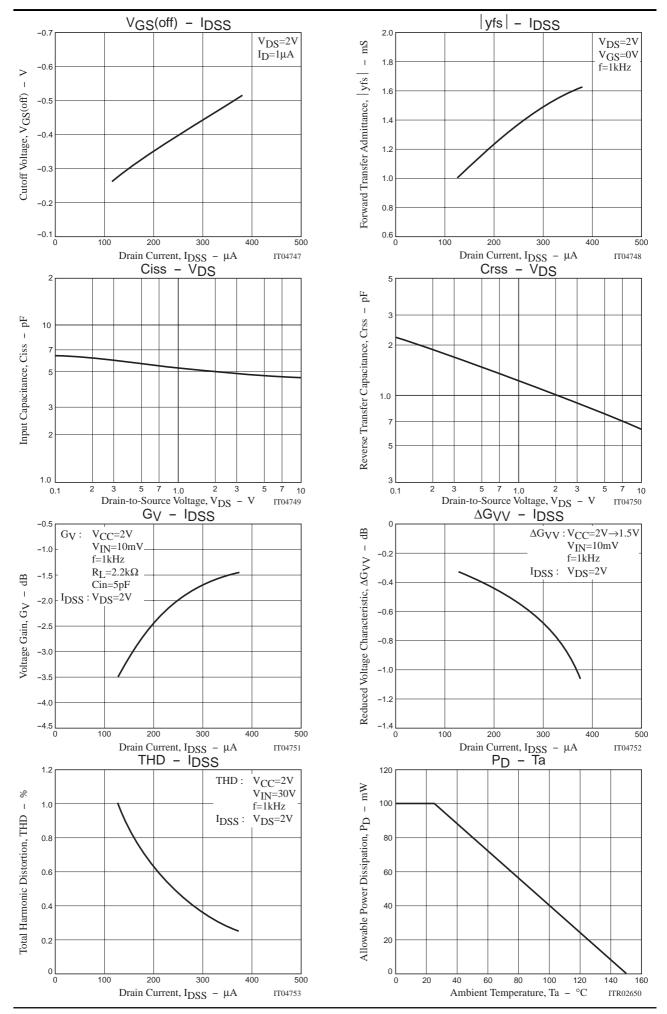
 $v_{GS}=0V$





 $\label{eq:control} \textit{Gate-to-Source Voltage}, \textit{V}_{GS} \; - \; \textit{V}$

IT04746



TF208TH

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