



TF250TH

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 _{GD0}		-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	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gate-to-Drain Breakdown Voltage	V _{(BR)GD0}	I _G =-100μA	-20			V
Cutoff Voltage	V _{GS(off)}	V _{DS} =2V, I _D =1μA	-0.1	-0.4	-1.0	V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =2V, V _{GS} =0V	140*		350*	μA
Forward Transfer Admittance	y _{fs}	V _{DS} =2V, V _{GS} =0V, f=1kHz	0.7	1.3		mS
Input Capacitance	C _{iss}	V _{DS} =2V, V _{GS} =0V, f=1MHz		2.8		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =2V, V _{GS} =0V, f=1MHz		0.55		pF

Marking: C

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* : The TF250TH is classified by I_{DSS} as follows : (unit : μA)

Rank	4	5
I _{DSS}	140 to 240	210 to 350

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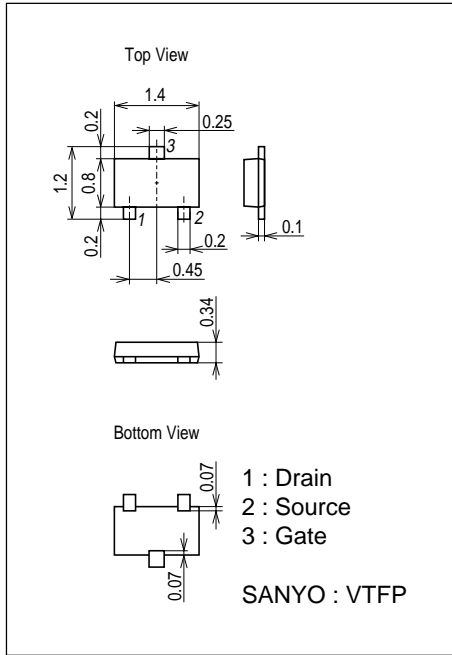
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[Ta=25°C, V _{CC} =2V, R _L =2.2kΩ, C _{in} =5pF, See specified Test Circuit.]						
Voltage Gain	G _V	V _{IN} =10mV, f=1kHz		0.8		dB
Reduced Voltage Characteristic	ΔG _{VV}	V _{IN} =10mV, f=1kHz, V _{CC} =2→1.5V		-0.7	-2.0	dB
Frequency Characteristic	ΔG _{Vf}	f=1kHz to 110Hz			-1.0	dB
Total Harmonic Distortion	THD	V _{IN} =30mV, f=1kHz		0.6		%
Output Noise Voltage	V _{NO}	V _{IN} =0V, A curve			-100	dB

Package Dimensions

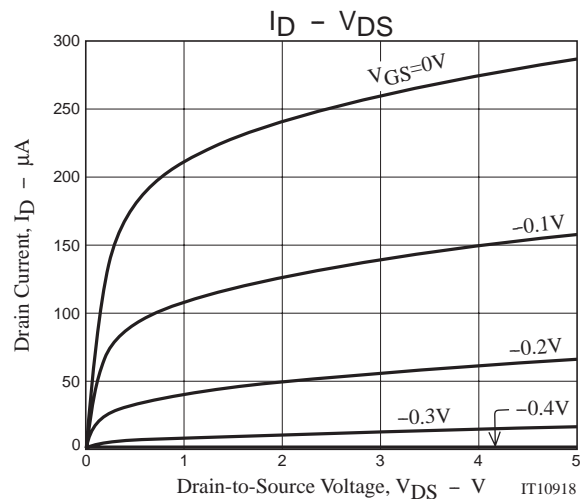
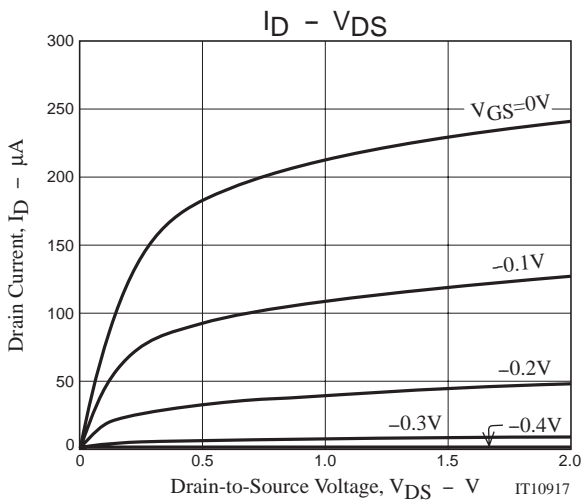
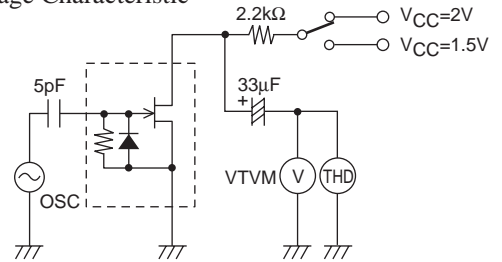
unit : mm (typ)

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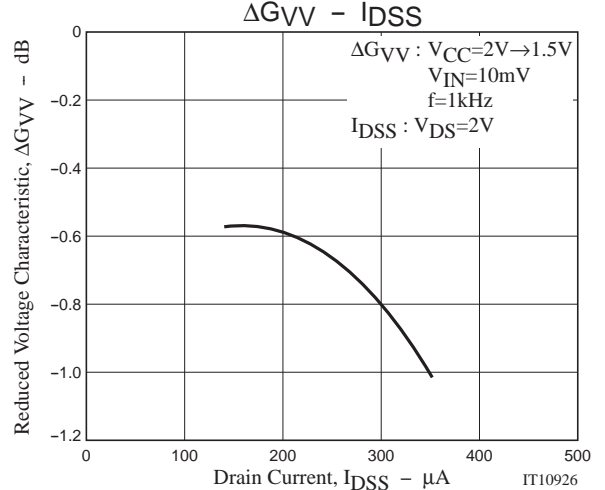
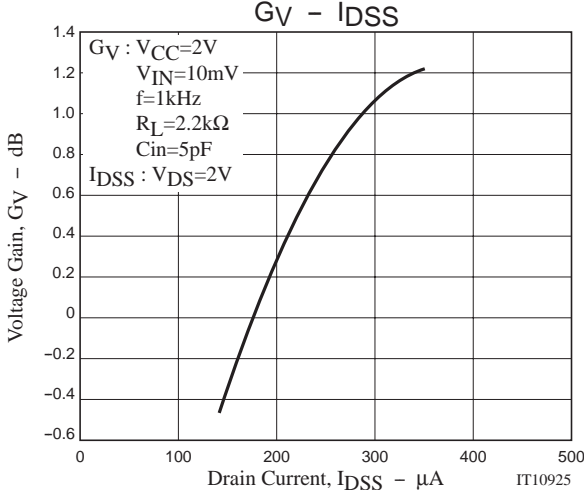
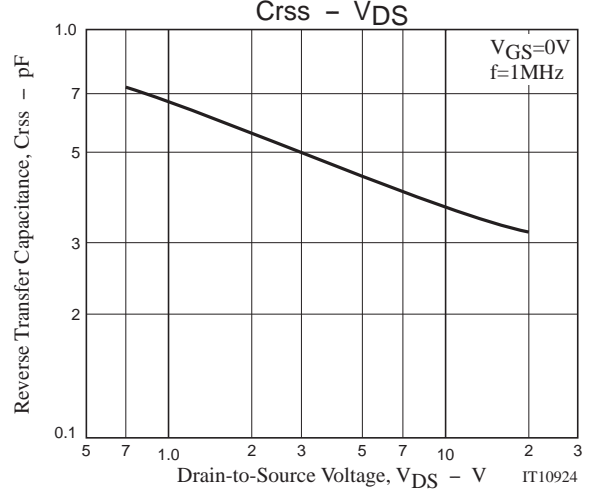
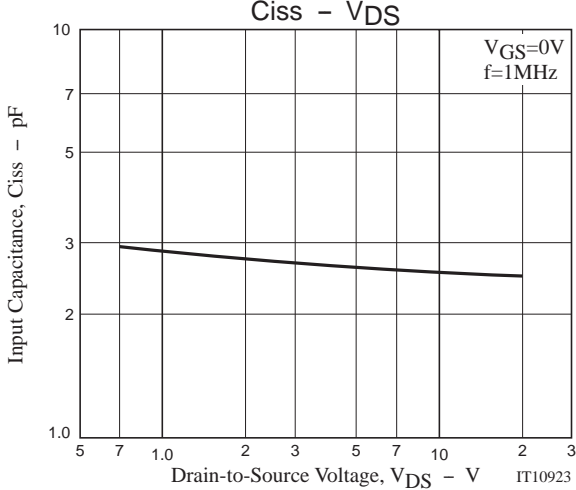
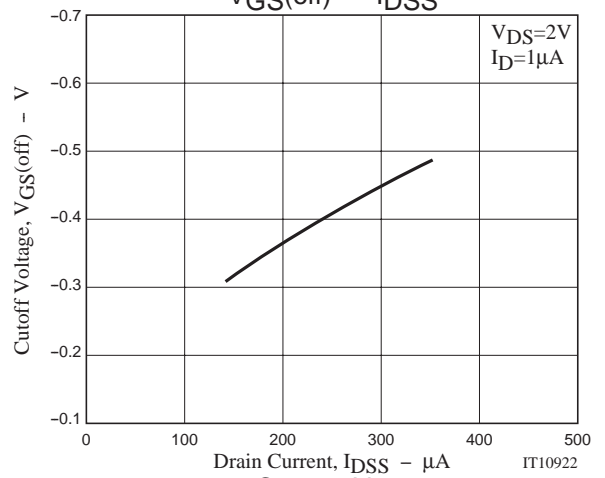
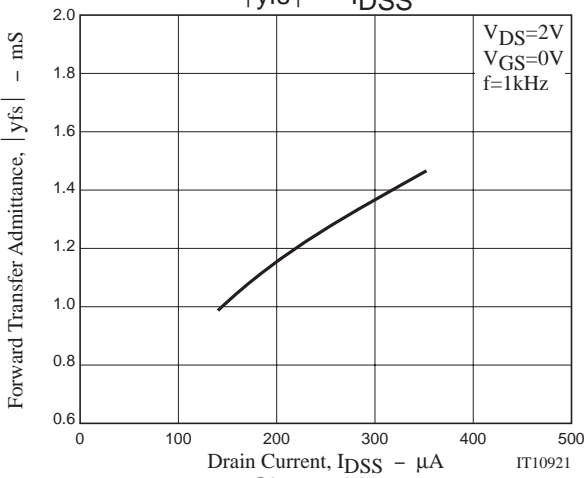
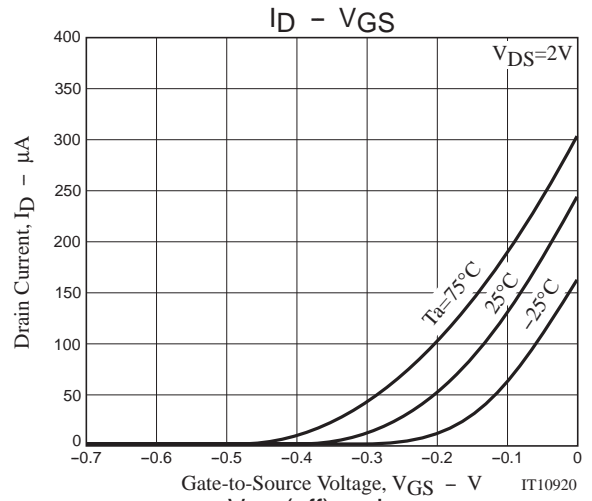
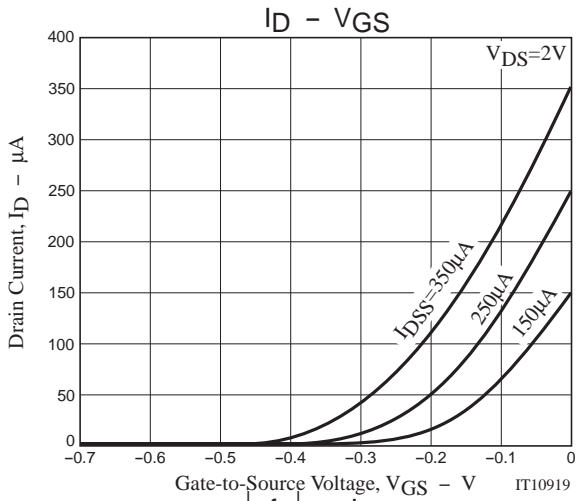


Test Circuit

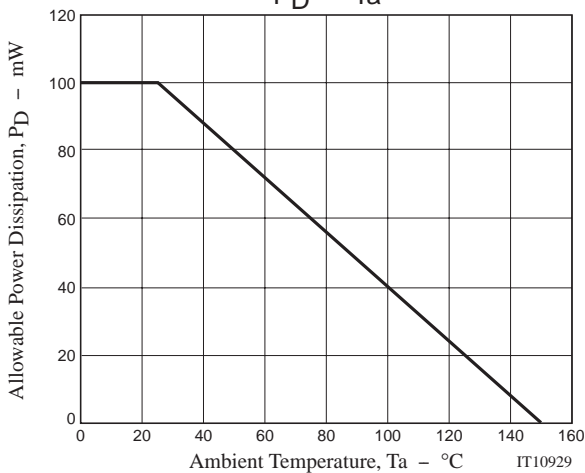
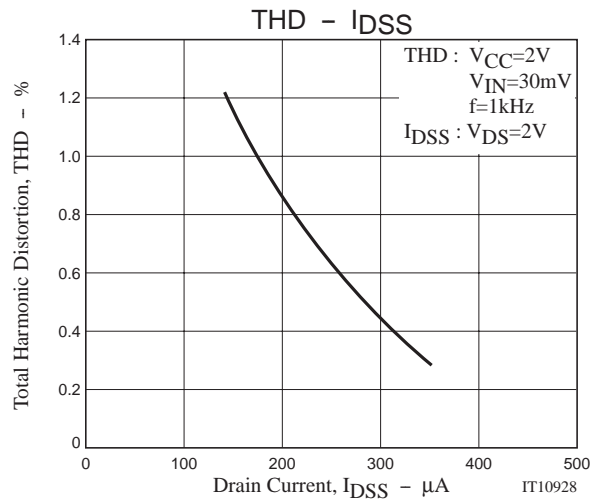
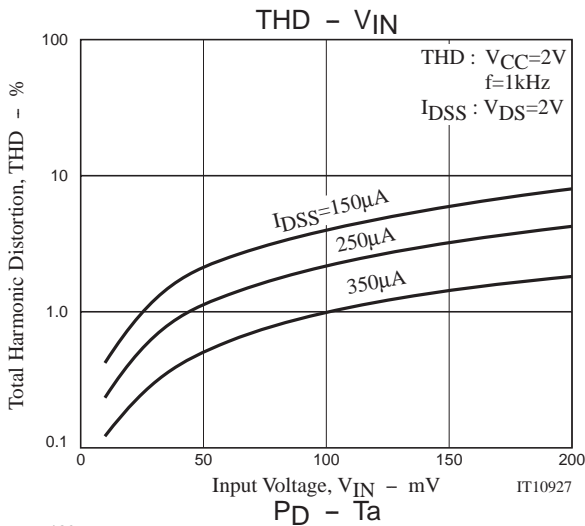
Voltage gain
Frequency Characteristic
Distortion
Reduced Voltage Characteristic



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