



SANYO Semiconductors

DATA SHEET

TF202B — N-channel Silicon Junction FET

Condenser Microphone Applications

Features

- Especially suited for use in condenser microphone for audio equipments and telephones.
- TF202B is possible to make applied sets smaller and thinner
- Excellent voltage characteristic.
- Excellent transient characteristic.
- 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	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)GDO}	I _G =-100μA	-20			V
Cutoff Voltage	V _{GS(off)}	V _{DS} =5V, I _D =1μA	-0.2	-0.6	-1.2	V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =5V, V _{GS} =0V	140*		350*	μA
Forward Transfer Admittance	y _{fs}	V _{DS} =5V, V _{GS} =0V, f=1kHz	0.5	1.2		mS
Input Capacitance	C _{iss}	V _{DS} =5V, V _{GS} =0V, f=1MHz		3.5		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =5V, V _{GS} =0V, f=1MHz		0.65		pF
[Ta=25°C, V _{CC} =4.5V, R _L =1kΩ, C _{in} =15pF, See specified Test Circuit.]						
Voltage Gain	G _V	V _{IN} =10mV, f=1kHz		-3.0		dB
Reduced Voltage Characteristics	ΔG _{VV}	V _{IN} =10mV, f=1kHz, V _{CC} =4.5→1.5V		-1.2	-3.5	dB

Continued on next page.

* : The TF202B is classified by I_{DSS} as follows : (unit : μA)

Rank	E4	E5
I _{DSS}	140 to 240	210 to 350

Marking : E

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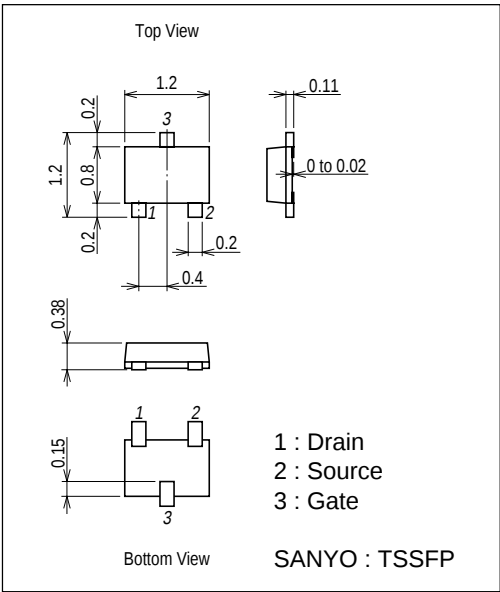
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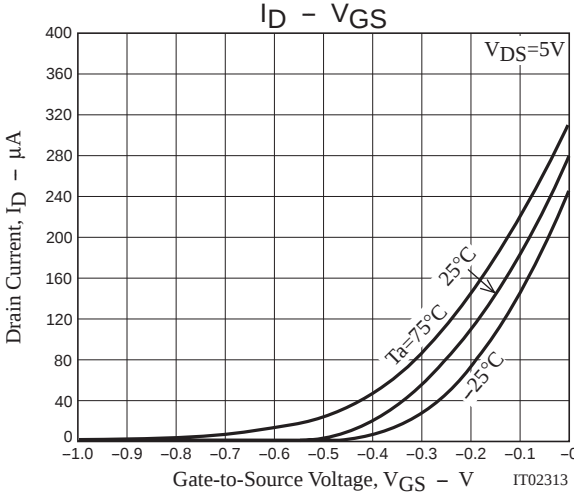
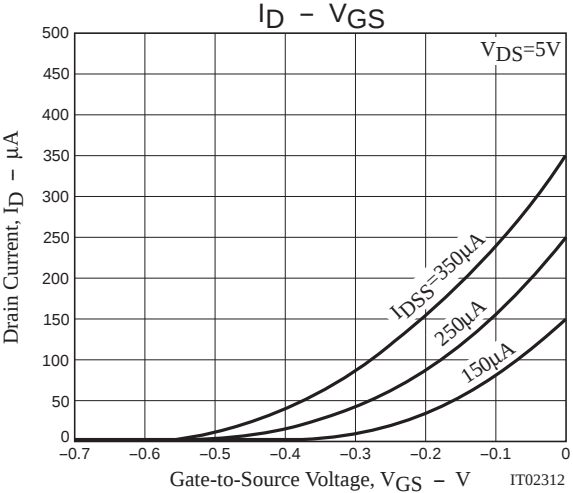
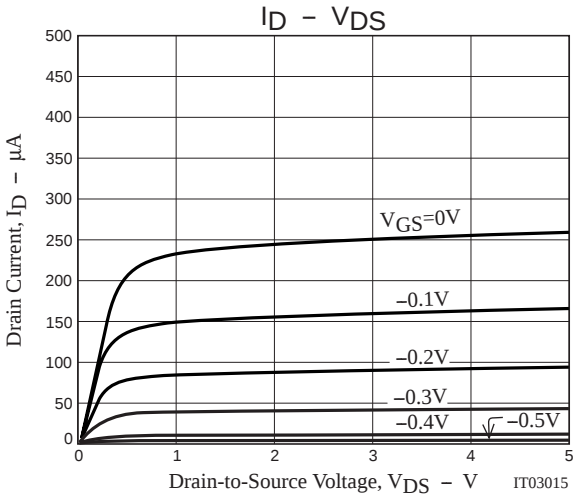
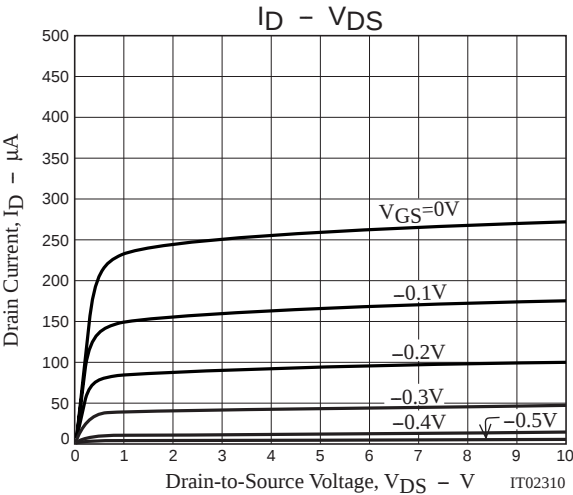
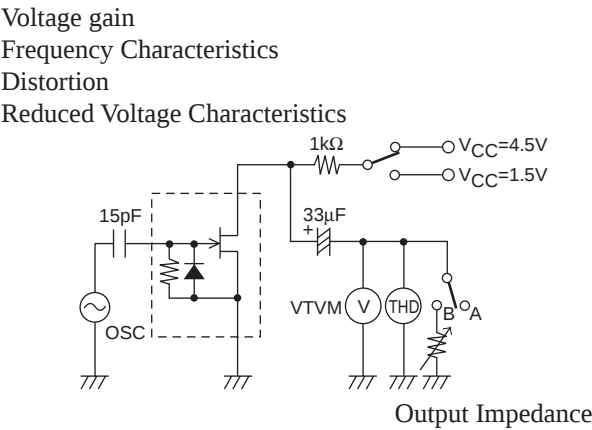
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Frequency Characteristics	ΔG_{vf}	$f=1\text{kHz to }110\text{Hz}$			-1.0	dB
Input Resistance	Z_{IN}	$f=1\text{kHz}$	25			$M\Omega$
Output Resistance	Z_O	$f=1\text{kHz}$		1000		Ω
Total Harmonic Distortion	THD	$V_{IN}=30\text{mV}, f=1\text{kHz}$		1.0		%
Output Noise Voltage	V_{NO}	$V_{IN}=0\text{V}, A \text{ curve}$			-110	dB

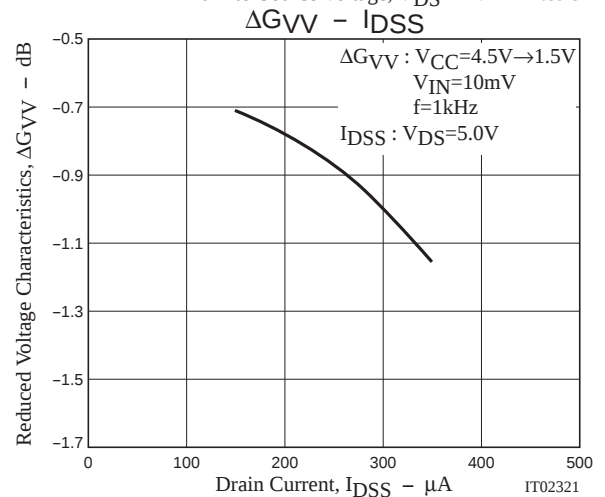
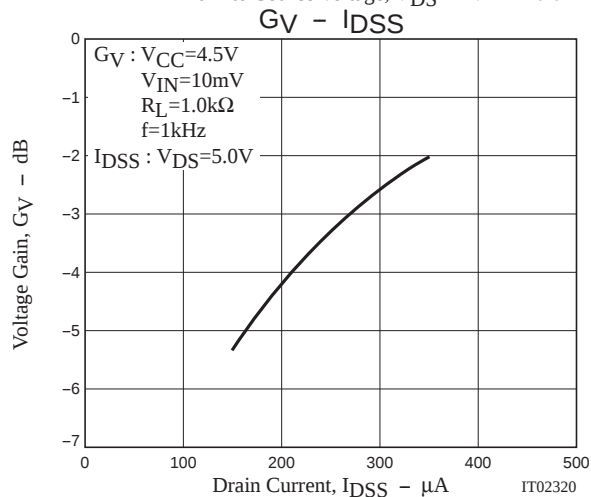
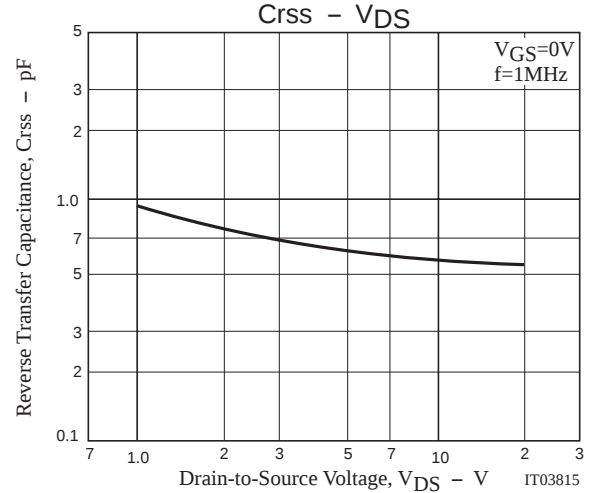
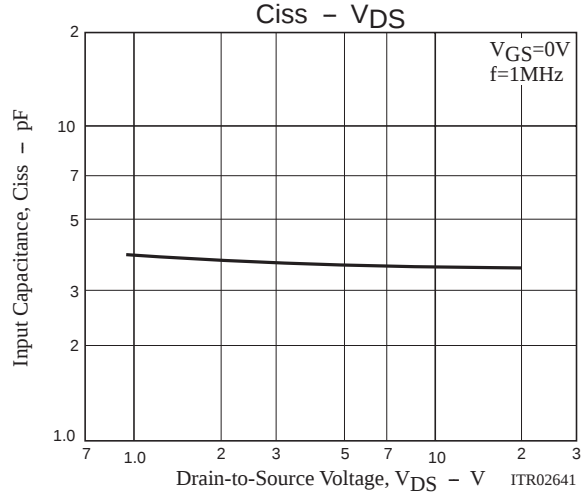
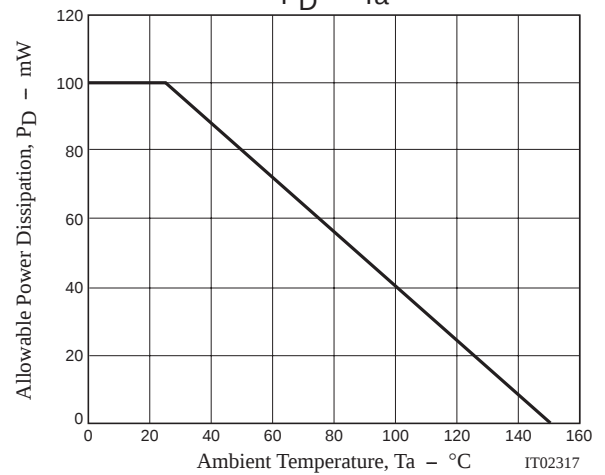
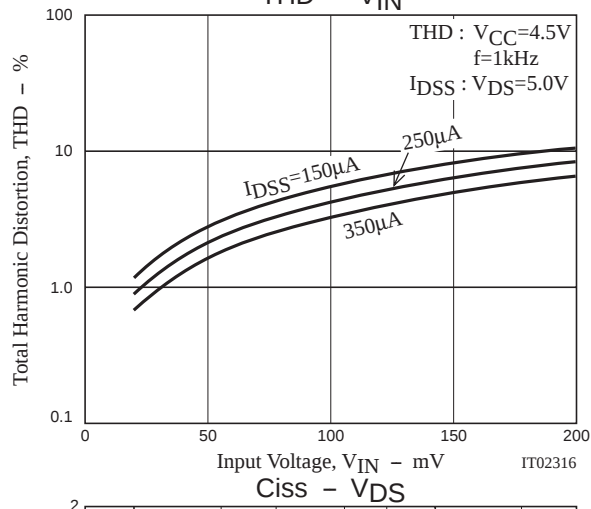
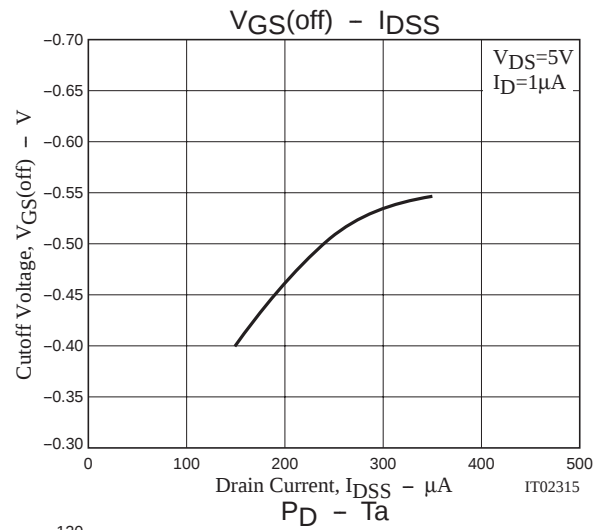
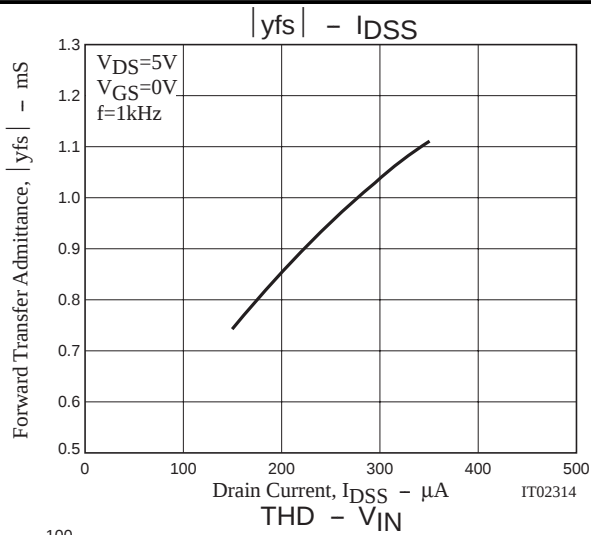
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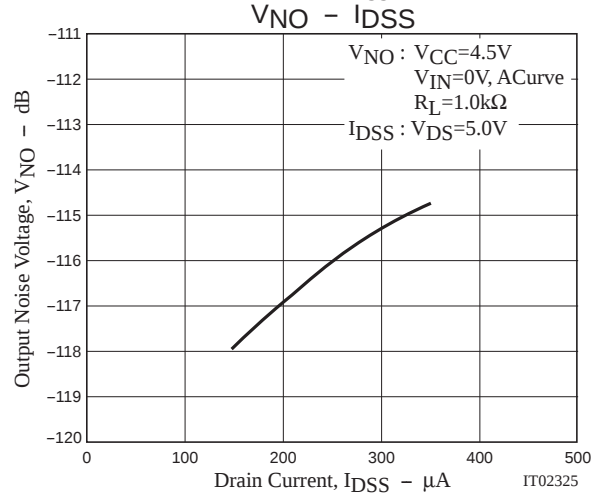
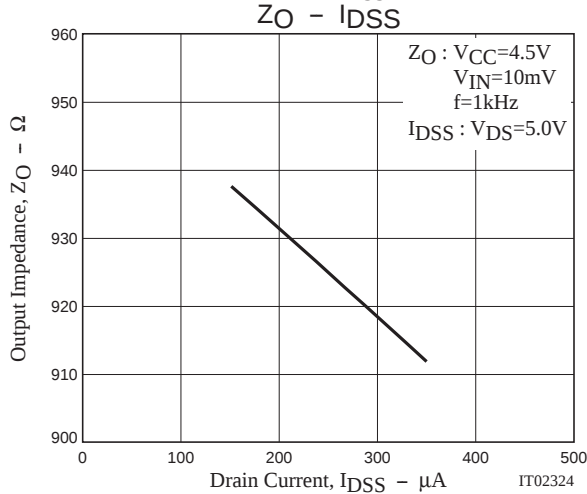
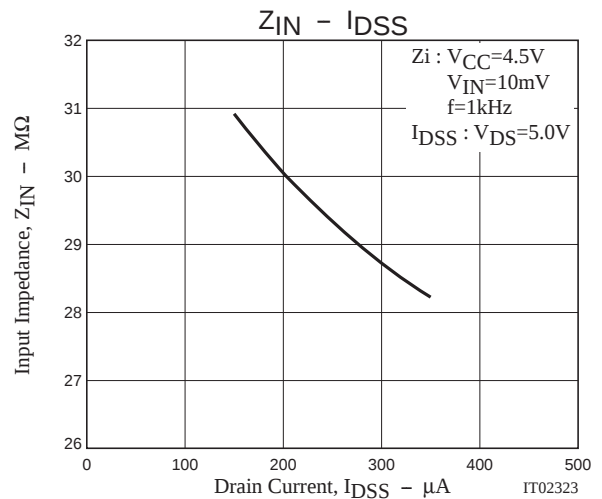
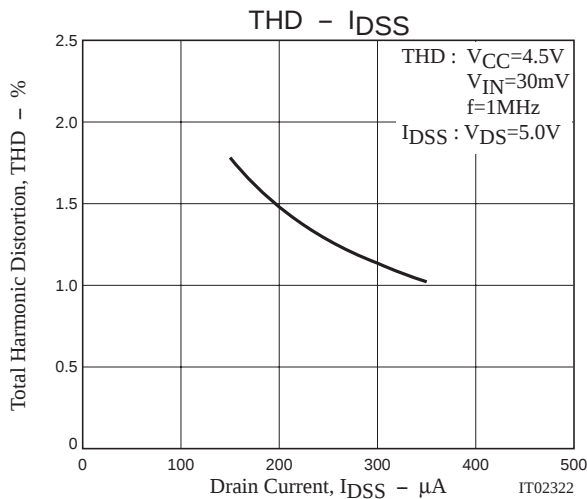
unit : mm
7048-001



Test Circuit







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