



SANYO Semiconductors

DATA SHEET

N-channel Silicon Junction FET

TF202C — Electret Condenser Microphone Applications

Features

- Especially suited for use in electret condenser microphone for audio equipments and telephones.
- Ultrasmall package permitting applied sets to be small and slim.
- 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	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
Drain Current	I _{DSS}	V _{DS} =5V, V _{GS} =0V	140*		350*	μA

Marking: E

Continued on next page.

* : The TF202C is classified by I_{DSS} as follows : (unit : μA)

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

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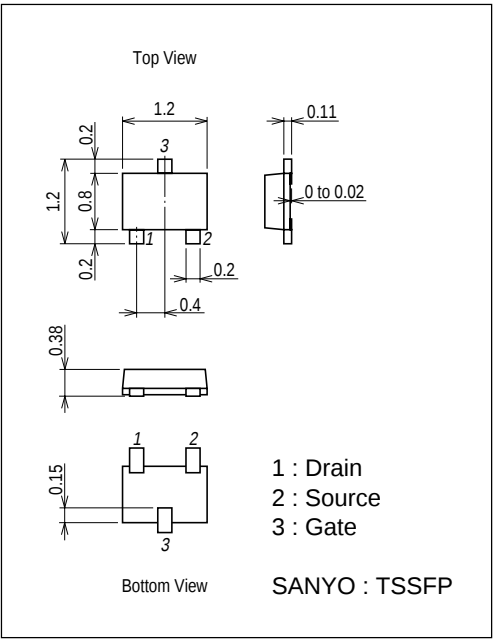
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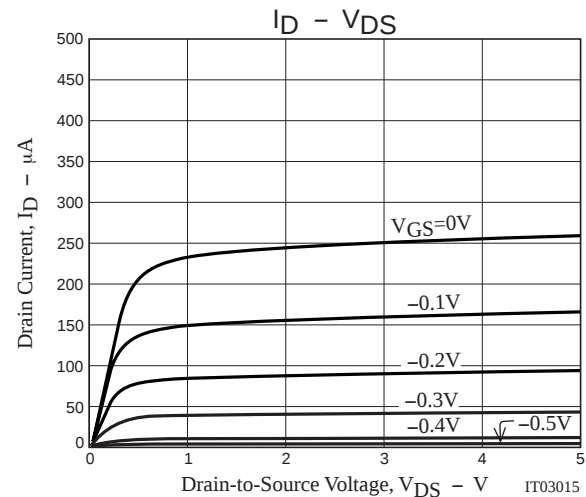
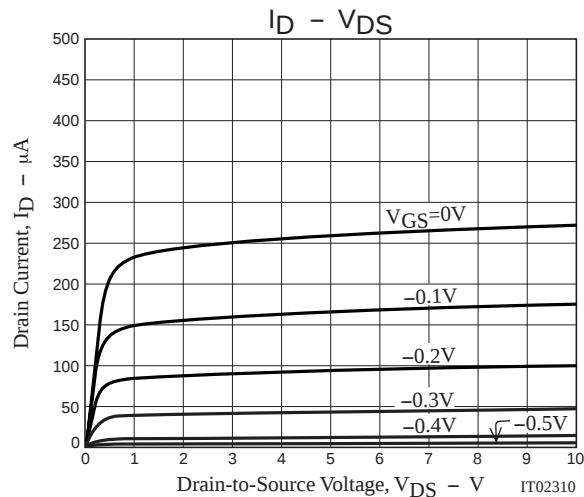
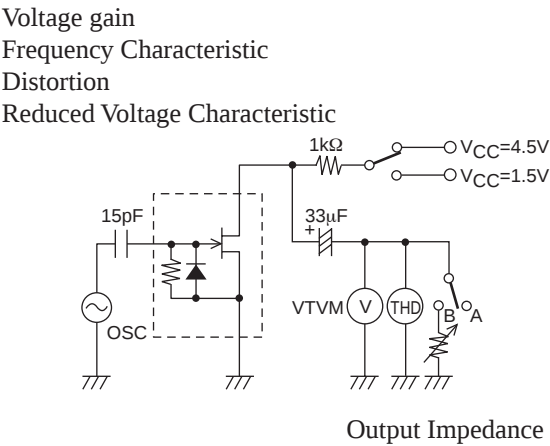
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=5V, V_{GS}=0V, f=1kHz$	0.5	1.2		mS
Input Capacitance	C_{iss}	$V_{DS}=5V, V_{GS}=0V, f=1MHz$		3.5		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=5V, V_{GS}=0V, f=1MHz$		0.65		pF
[Ta=25°C, VCC=4.5V, RL=1kΩ, Cin=15pF, See specified Test Circuit.]						
Voltage Gain	GV	$V_{IN}=10mV, f=1kHz$		-3.0		dB
Reduced Voltage Characteristic	ΔG_{VV}	$V_{IN}=10mV, f=1kHz, V_{CC}=4.5 \rightarrow 1.5V$		-1.2	-3.5	dB
Frequency Characteristic	ΔG_{vf}	$f=1kHz \text{ to } 110Hz$			-1.0	dB
Input Impedance	Z_{IN}	$f=1kHz$	25			MΩ
Output Impedance	Z_O	$f=1kHz$		1000		Ω
Total Harmonic Distortion	THD	$V_{IN}=30mV, f=1kHz$		1.0		%
Output Noise Voltage	VNO	$V_{IN}=0V, A \text{ curve}$			-110	dB

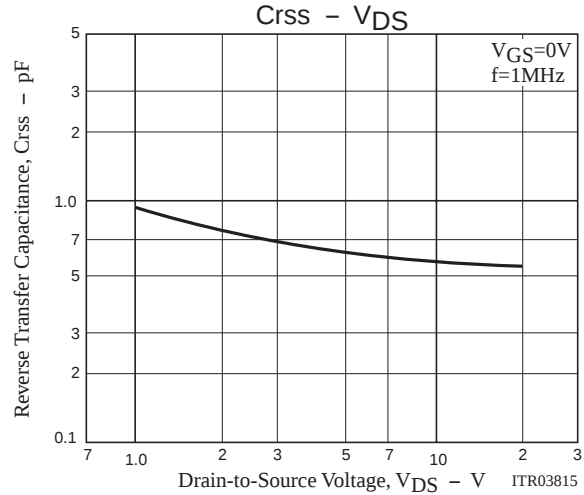
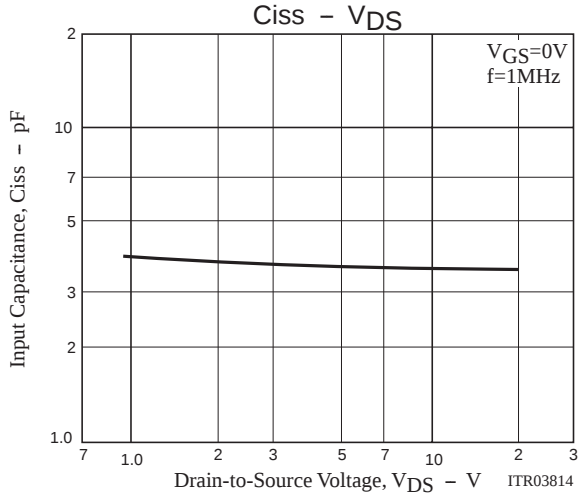
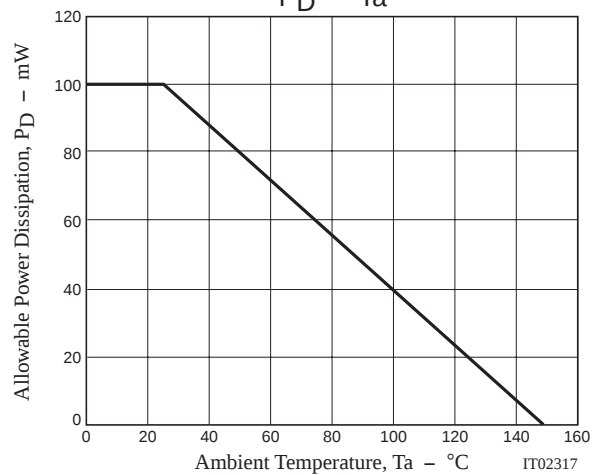
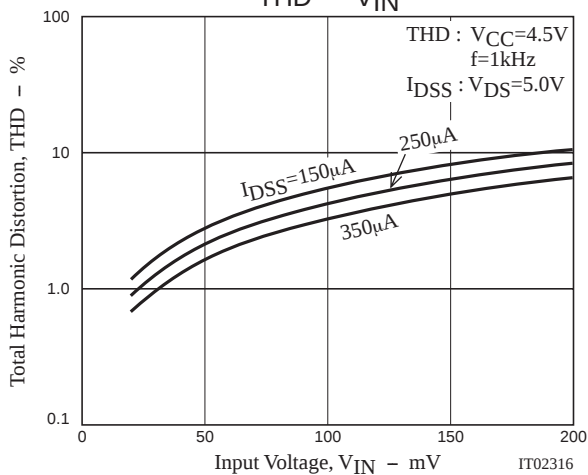
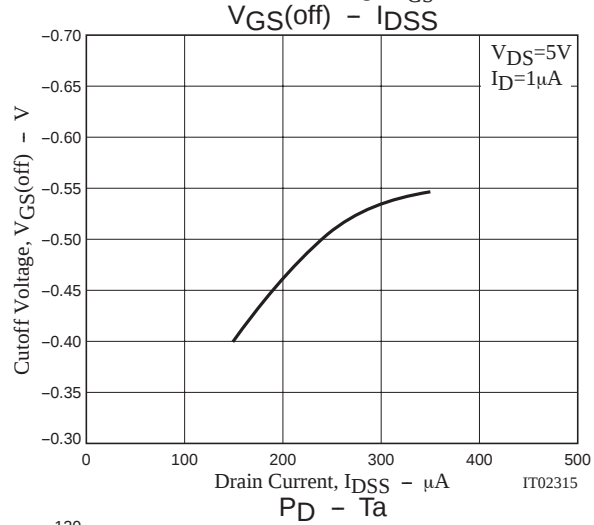
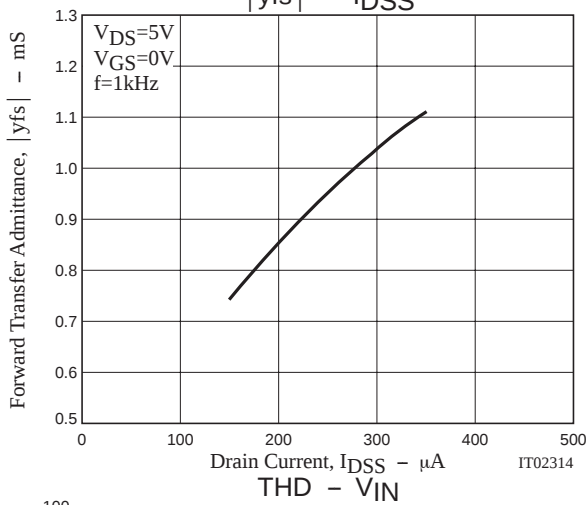
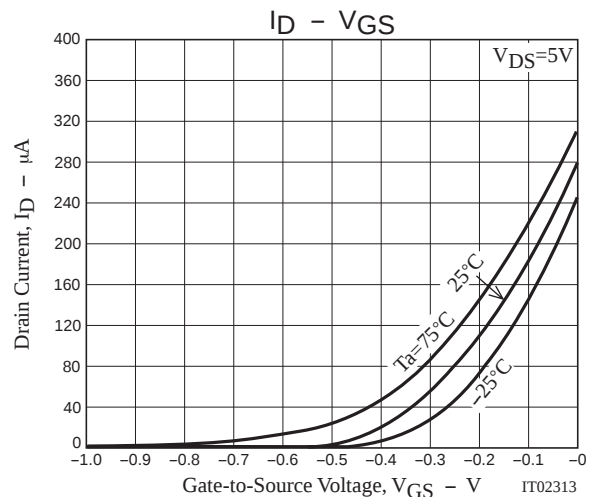
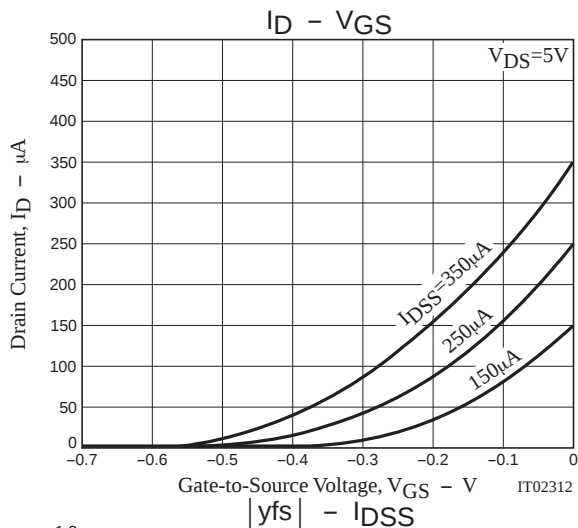
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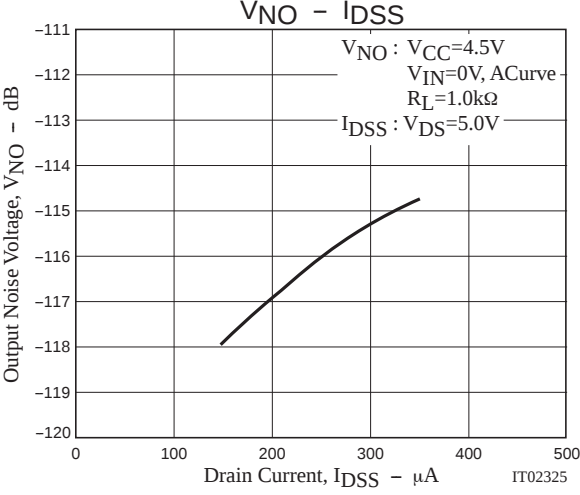
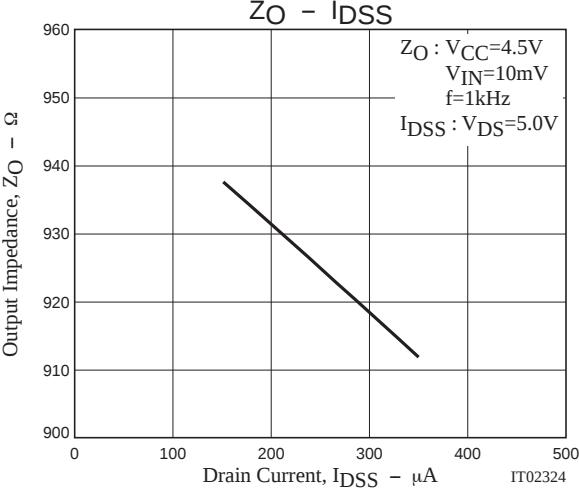
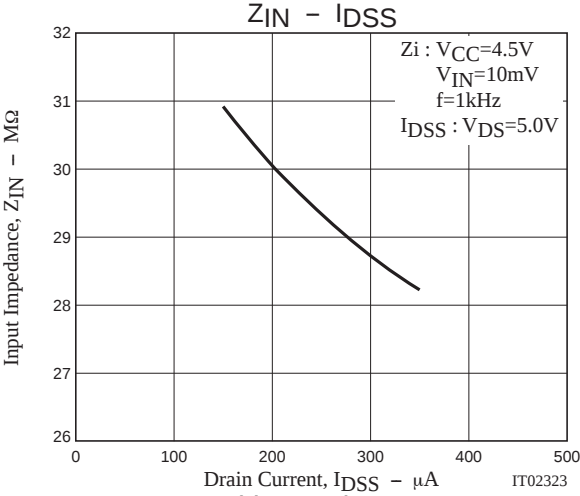
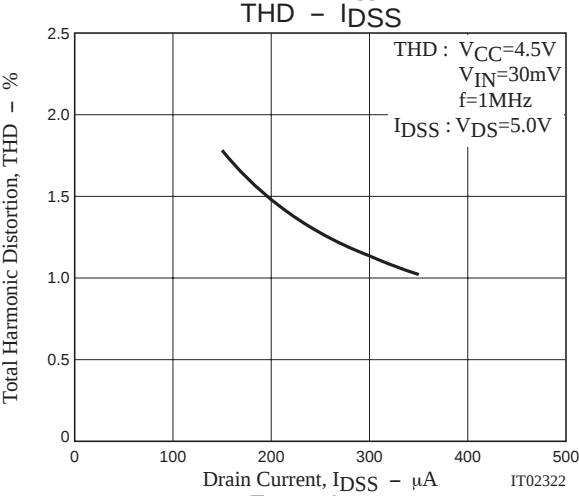
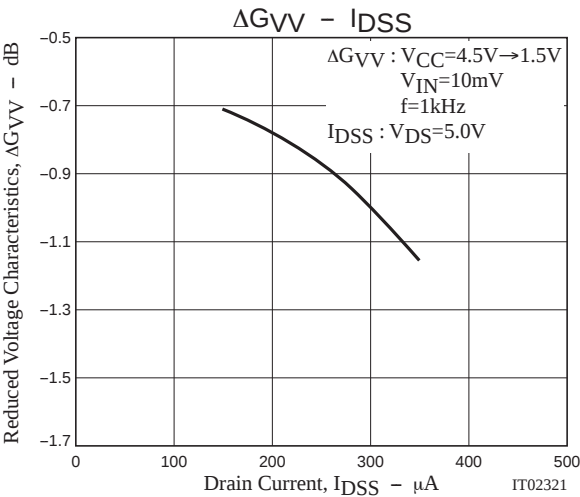
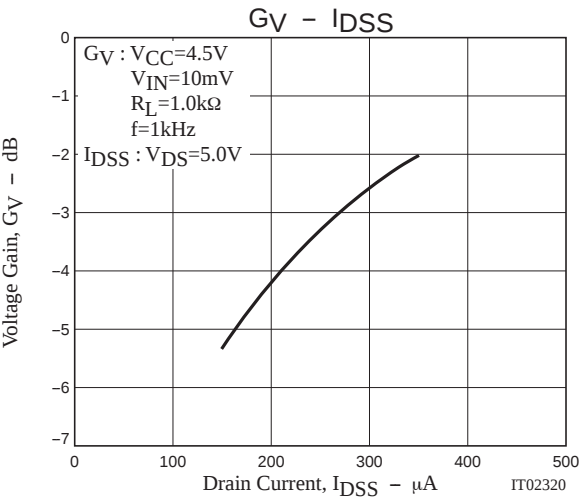
unit : mm (typ)
7048-001



Test Circuit







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