



Electret Condenser Microphone Applications

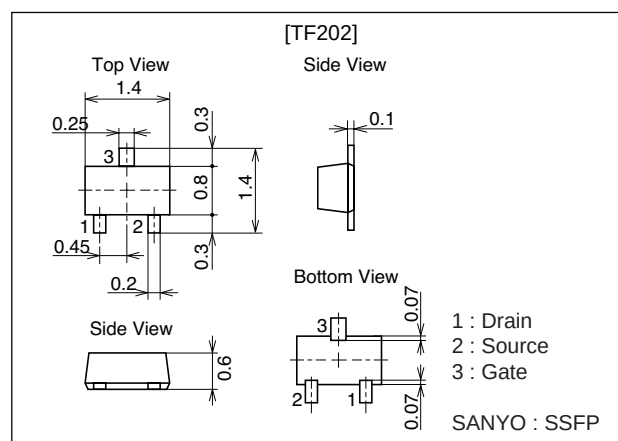
Features

- Especially suited for use in electret condenser microphone.
- Ultrasmall package permitting TF202 applied sets to be made small and slim.
- Excellent voltage characteristics.
- Excellent transient characteristics.
- Adoption of FBET process.

Package Dimensions

unit : mm

2207A



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	$V_{(BR)GDO}$	$I_G = -100\mu A$	-20			V
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 5V, I_D = 1\mu A$	-0.2	-0.6	-1.2	V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 5V, V_{GS} = 0$	140*		500*	μA
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 5V, V_{GS} = 0, f = 1kHz$	0.5	1.2		mS
Input Capacitance	C_{iss}	$V_{DS} = 5V, V_{GS} = 0, f = 1MHz$		3.5		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = 5V, V_{GS} = 0, f = 1MHz$		0.65		pF

Continued on next page.

* : The TF202 is classified by I_{DSS} as follows : (unit : μA)

Rank	E4	E5	E6
I_{DSS}	140 to 240	210 to 350	320 to 500

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[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
Frequency Characteristics	ΔG _{Vf}	f=1kHz to 110Hz			-1.0	dB
Input Resistance	Z _{IN}	f=1kHz	25			mΩ
Output Resistance	Z _O	f=1kHz		1000		Ω
Total Harmonic Distortion	THD	V _{IN} =30mV, f=1kHz		1.0		%
Output Noise Voltage	V _{NO}	V _{IN} =0, A curve			-110	dB

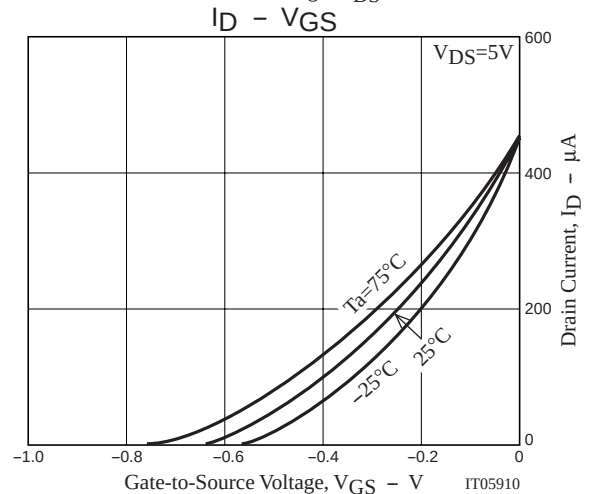
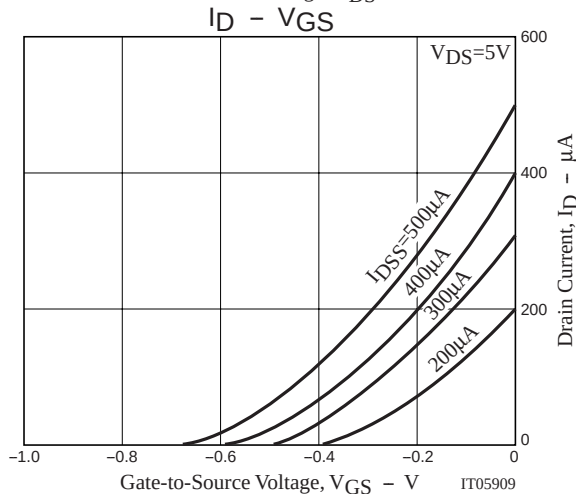
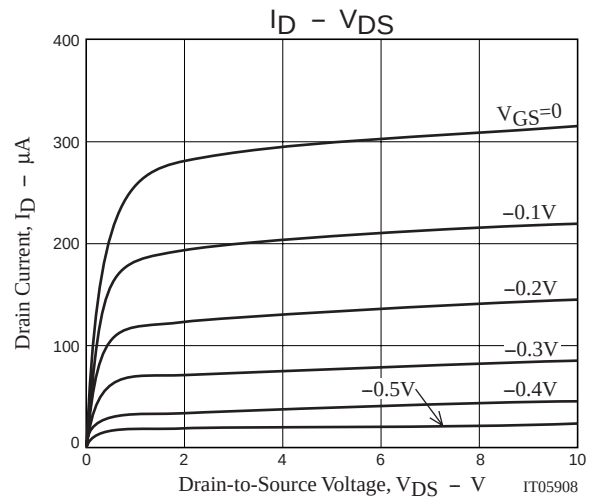
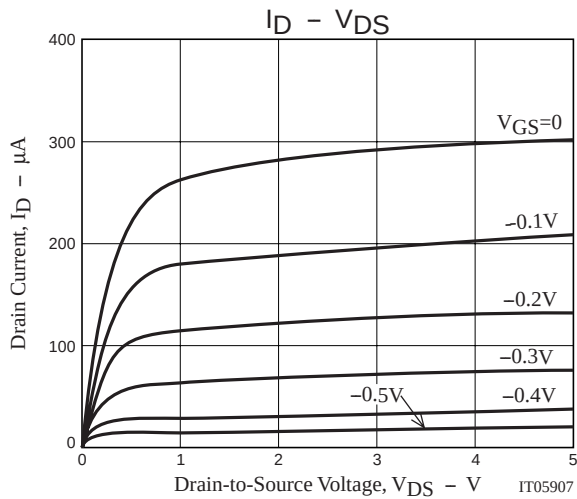
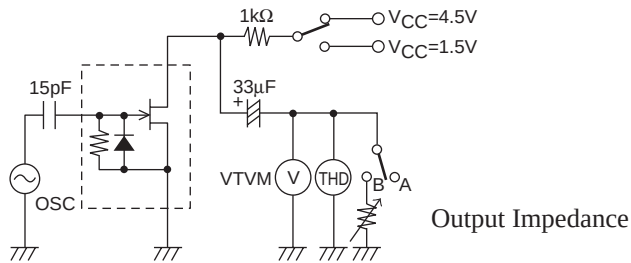
Test Circuit

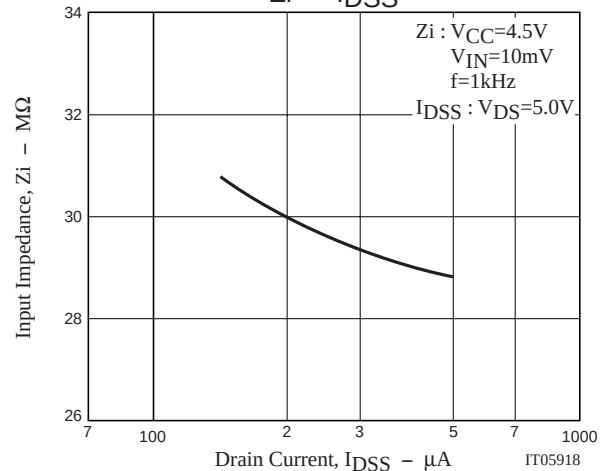
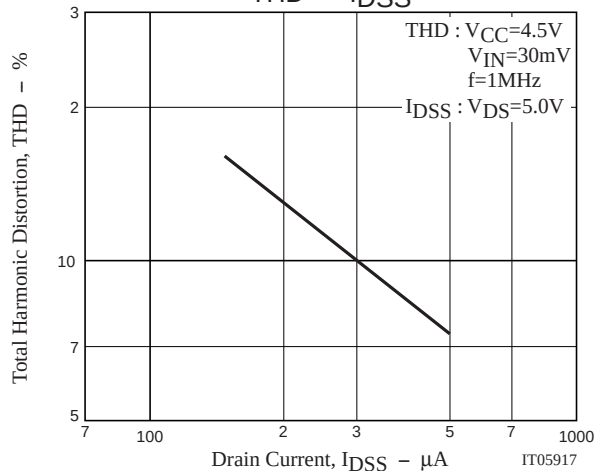
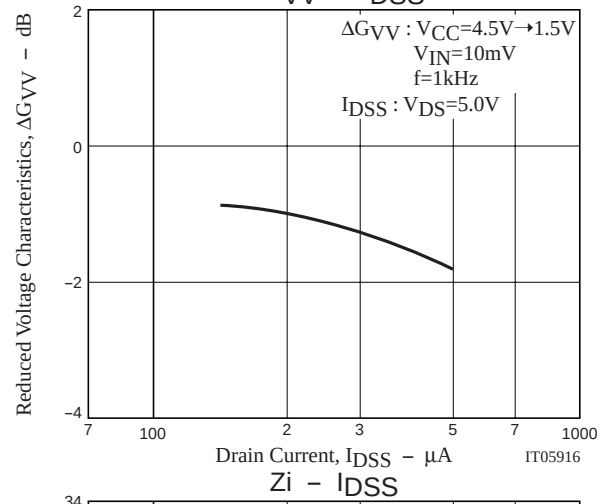
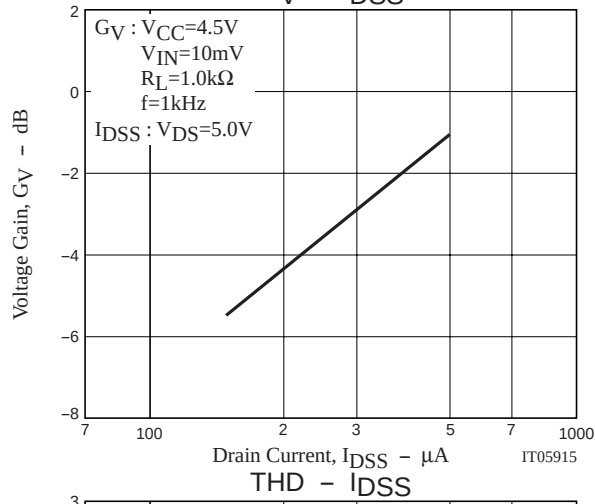
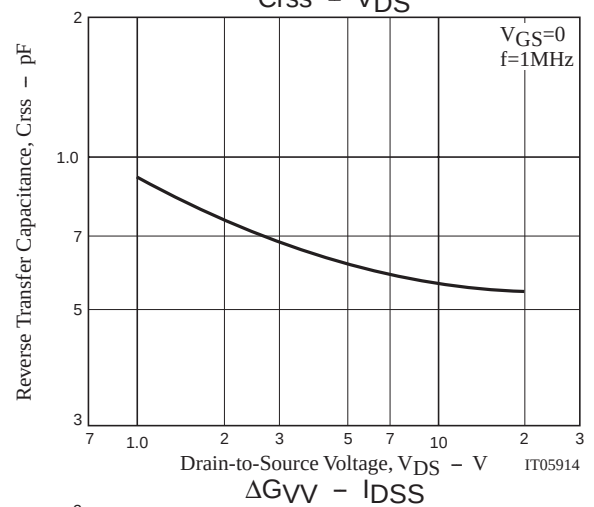
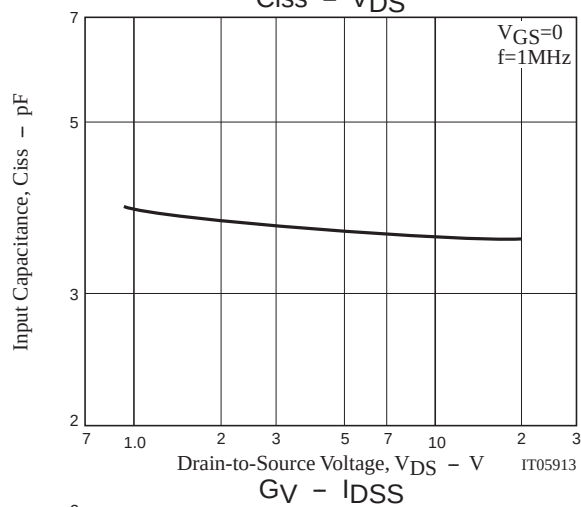
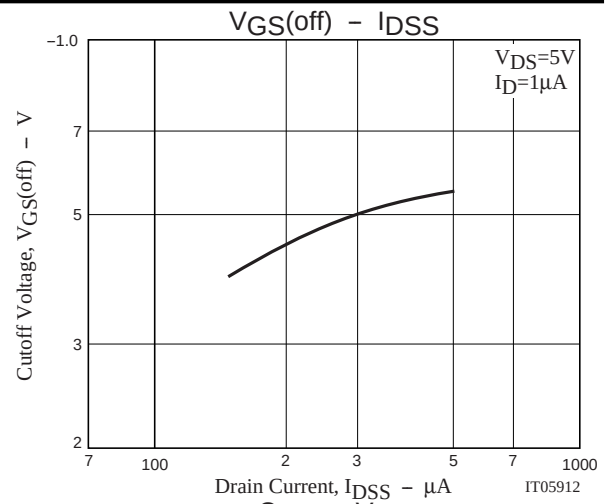
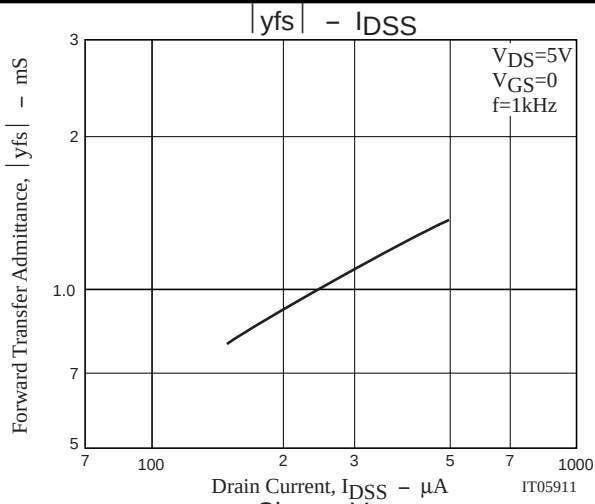
Voltage gain

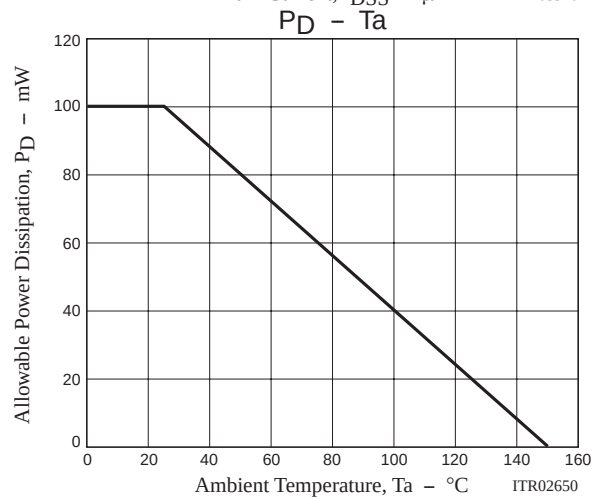
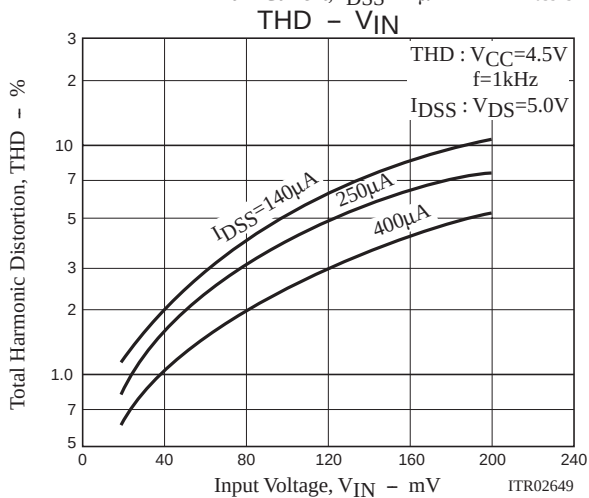
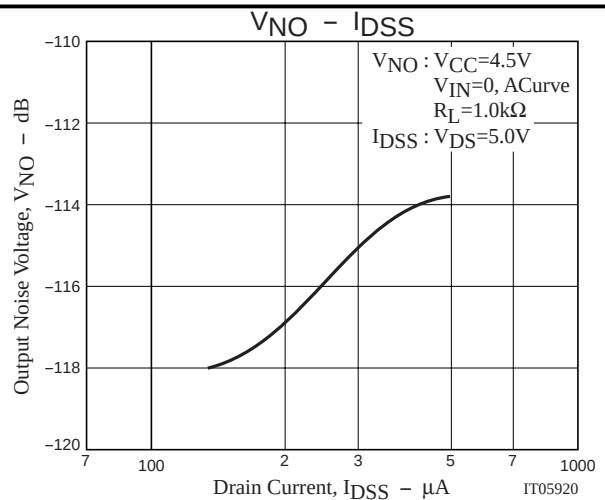
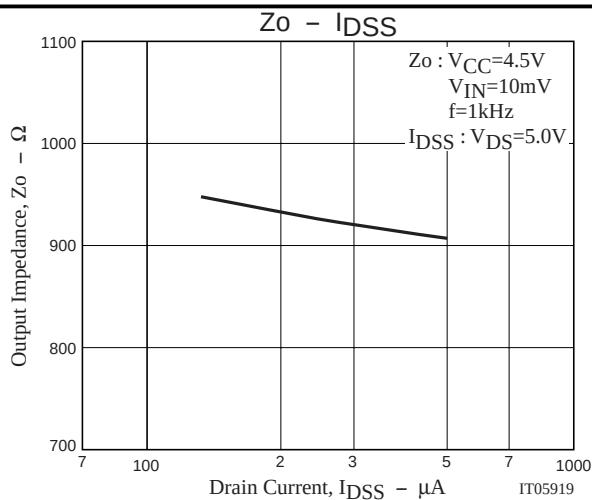
Frequency Characteristics

Distortion

Reduced Voltage Characteristics







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