



# TF218

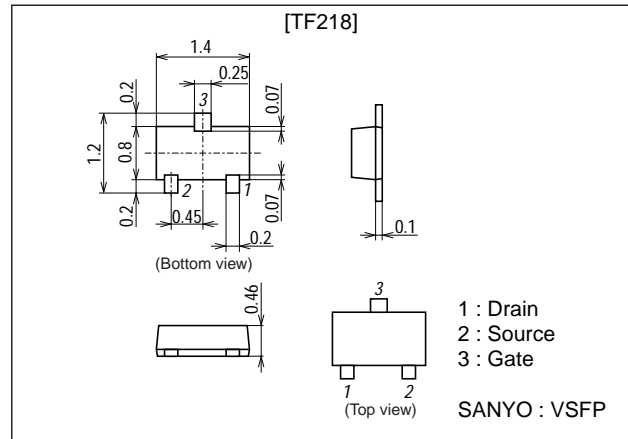
## Capacitor Microphone Applications

### Features

- Ultrasmall package facilitates miniaturization in end products.
- Especially suited for use in audio, telephone capacitor microphones.
- Excellent voltage characteristic.
- Excellent transient characteristic.
- Adoption of FBET process.

### Package Dimensions

unit : mm  
2201



### Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Gate-to-Drain Voltage	V <sub>GD0</sub>		-20	V
Gate Current	I <sub>G</sub>		10	mA
Drain Current	I <sub>D</sub>		1	mA
Allowable Power Dissipation	P <sub>D</sub>		100	mW
Junction Temperature	T <sub>J</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gate-to-Drain Breakdown Voltage	V <sub>(BR)GD0</sub>	I <sub>G</sub> =-100μA	-20			V
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =1μA	-0.2	-0.6	-1.0	V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =5V, V <sub>GS</sub> =0	140*		350*	μA
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =5V, V <sub>GS</sub> =0, f=1kHz	0.5	1.0		mS
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =5V, V <sub>GS</sub> =0, f=1MHz		3.5		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =5V, V <sub>GS</sub> =0, f=1MHz		0.65		pF

Continued on next page.

\* : The TF218 is classified by I<sub>DSS</sub> as follows : (unit : μA)

Marking	A4	A5
I <sub>DSS</sub>	140 to 240	210 to 350

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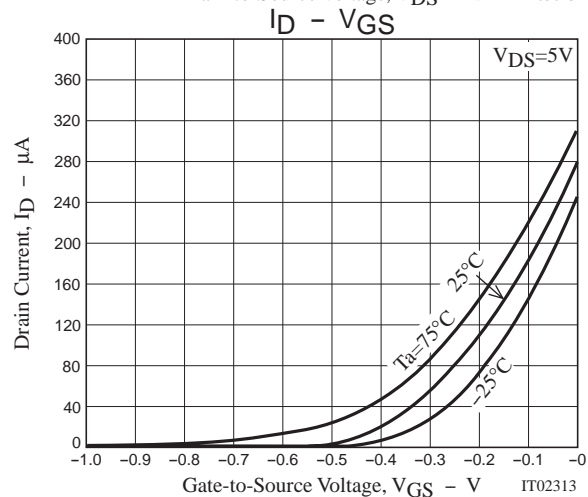
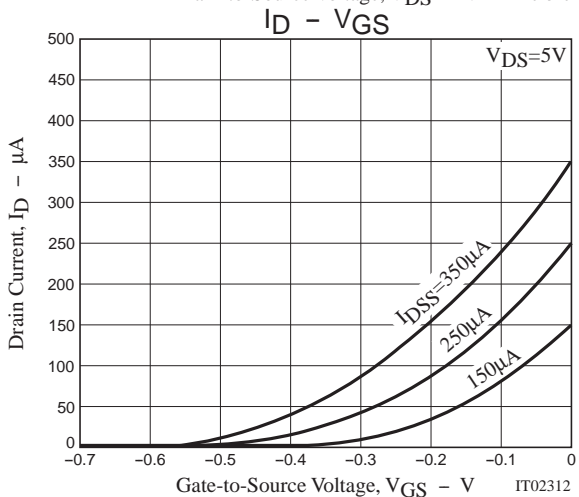
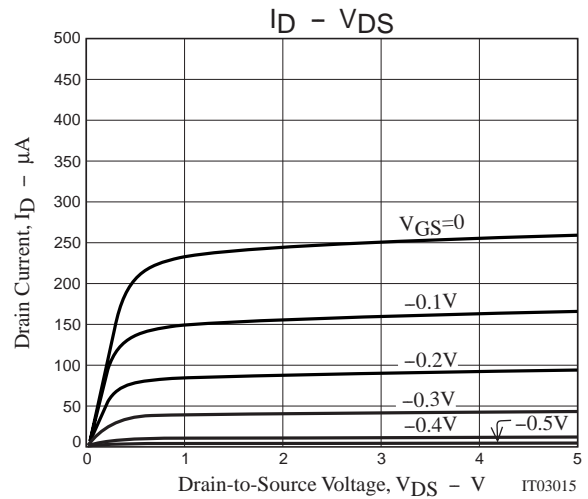
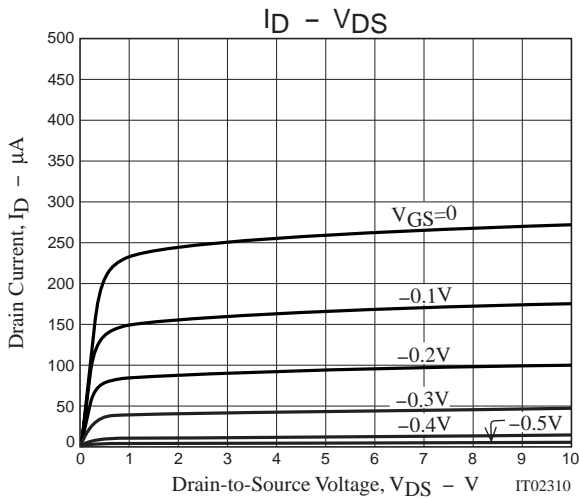
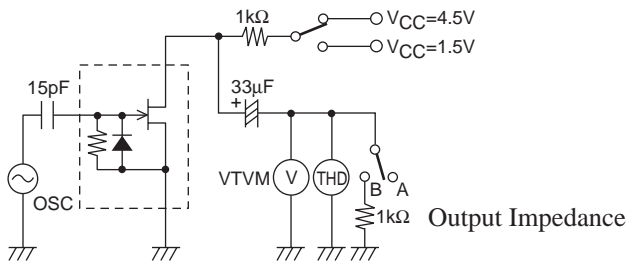
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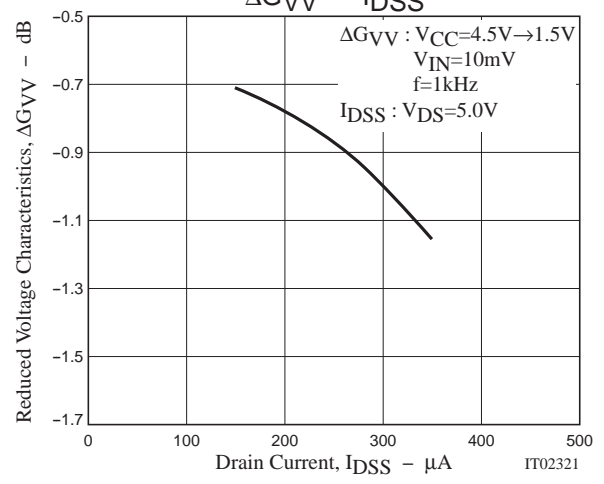
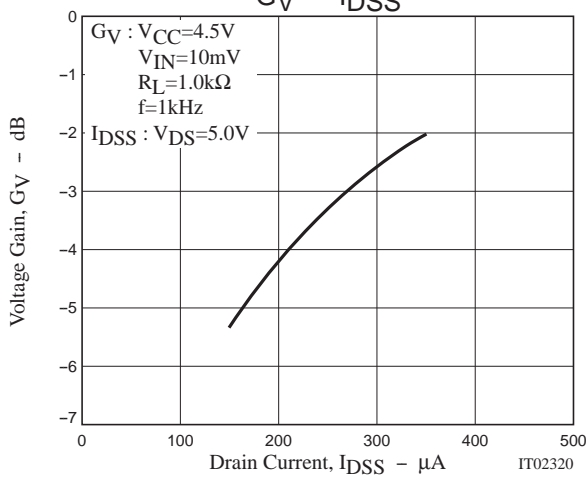
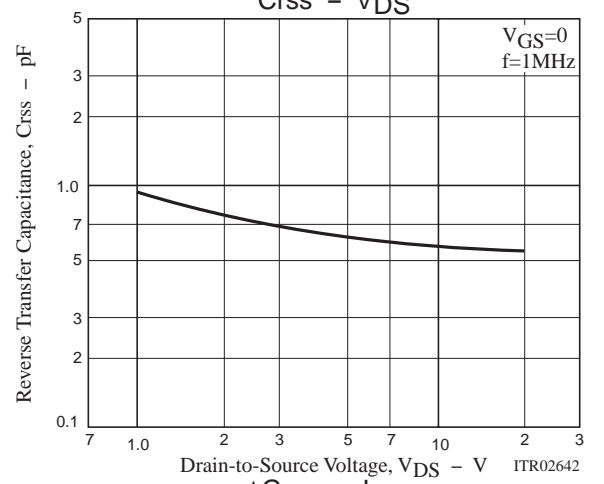
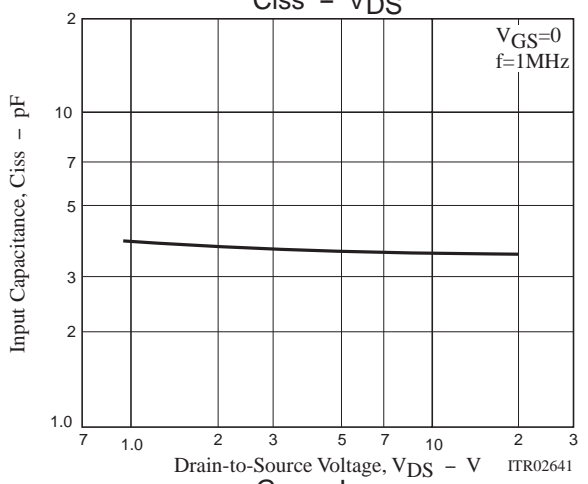
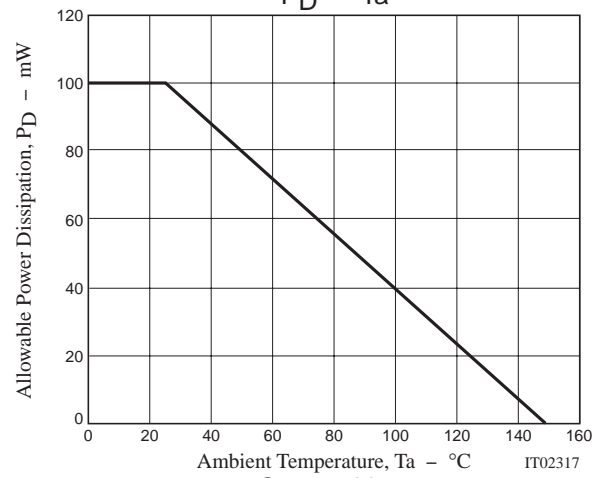
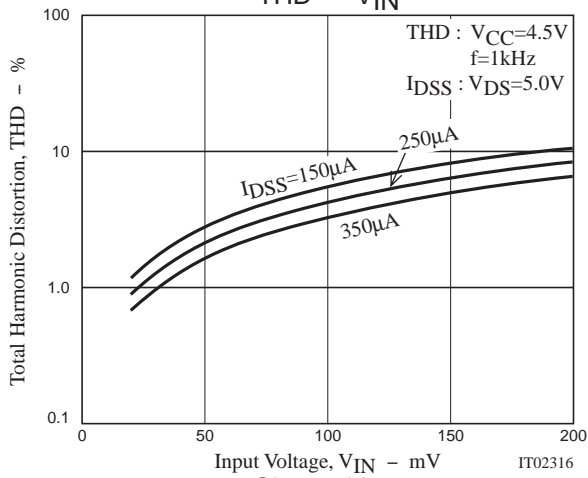
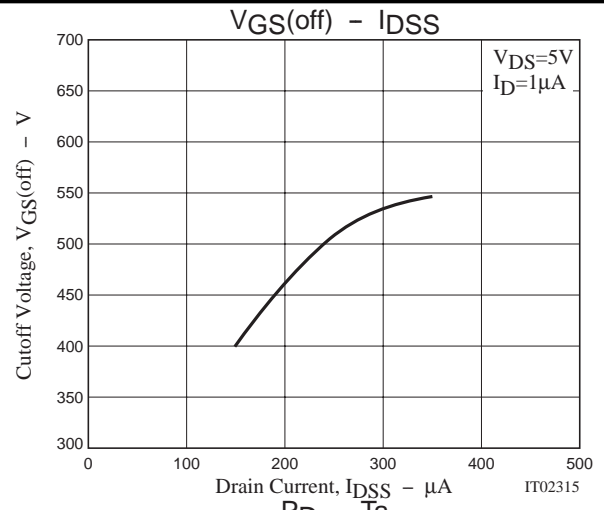
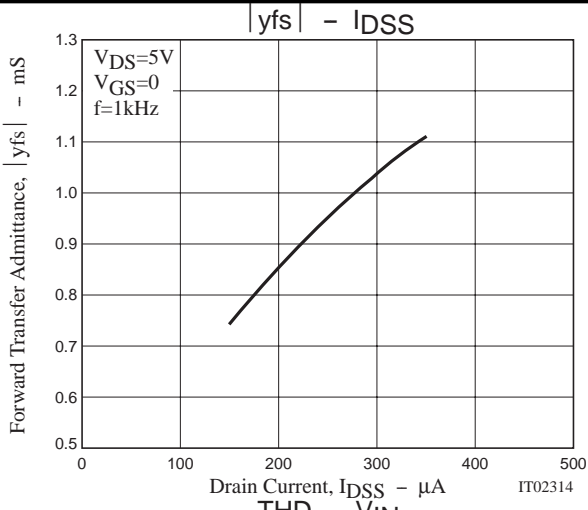
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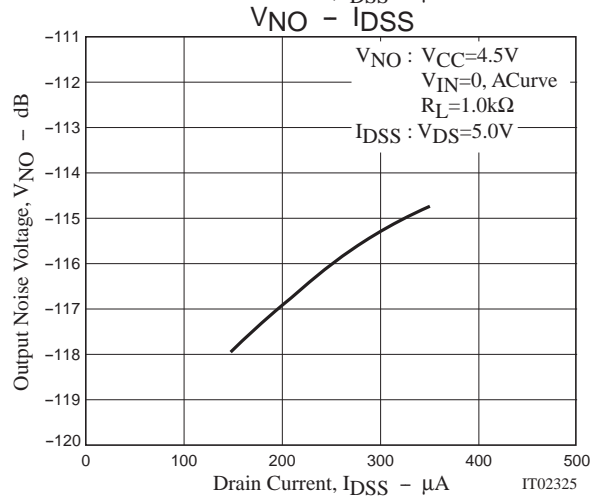
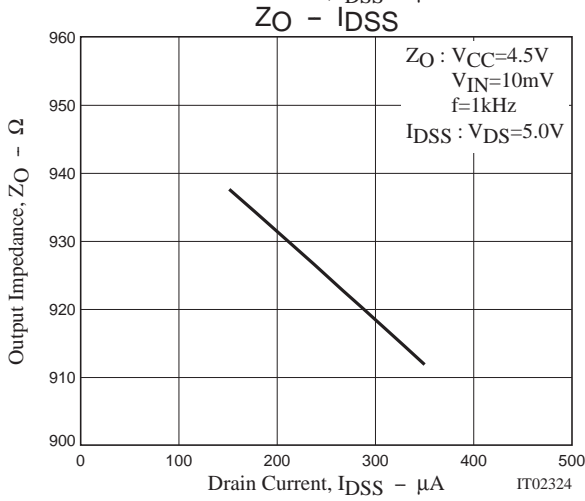
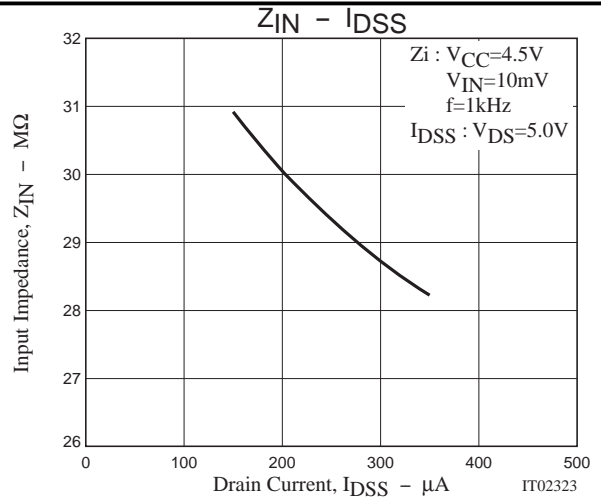
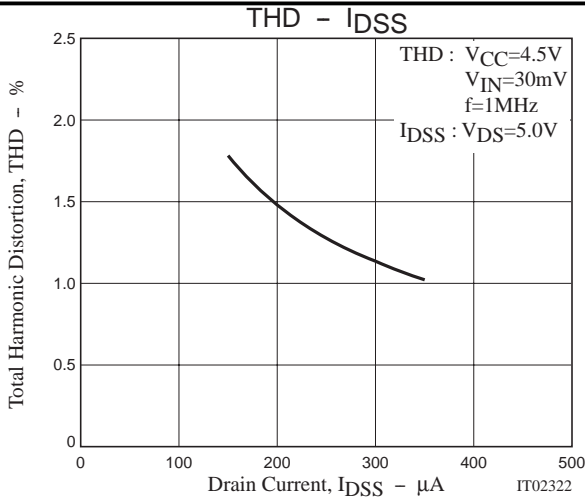
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[Ta=25°C, VCC=4.5V, RL=1kΩ, Cin=15pF, See specified Test Circuit.]						
Voltage Gain	Gv	VIN=10mV, f=1kHz		-3.0		dB
Reduced Voltage Characteristic	ΔGVV	VIN=10mV, f=1kHz, VCC=4.5→1.5V		-1.2	-3.5	dB
Frequency Characteristic	ΔGvf	f=1kHz to 110Hz			-1.0	dB
Input Impedance	ZIN	f=1kHz	25			MΩ
Output Impedance	ZO	f=1kHz		1000		Ω
Total Harmonic Distortion	THD	VIN=30mV, f=1kHz		1.2		%
Output Noise Voltage	VNO	VIN=0, A curve			-110	dB

## Test Circuit

- Voltage gain
- Frequency Characteristic
- Distortion
- Reduced Voltage Characteristic







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