

**TF218**

Capacitor Microphone Applications

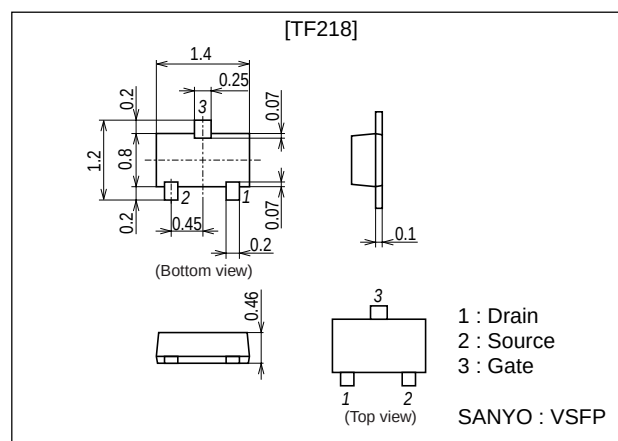
Features

- 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 _{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	-1.0	V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =5V, V _{GS} =0	140*		350*	μA
Forward Transfer Admittance	y _{fs}	V _{DS} =5V, V _{GS} =0, f=1kHz	0.5	1.0		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

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* : The TF218 is classified by I_{DSS} as follows : (unit : μA)

Marking	A4	A5
I _{DSS}	140 to 240	210 to 350

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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 Characteristic	ΔG _{VV}	V _{IN} =10mV, f=1kHz, V _{CC} =4.5→1.5V		-1.2	-3.5	dB
Frequency Characteristic	ΔG _{Vf}	f=1kHz 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		1.2		%
Output Noise Voltage	V _{NO}	V _{IN} =0, A curve			-110	dB

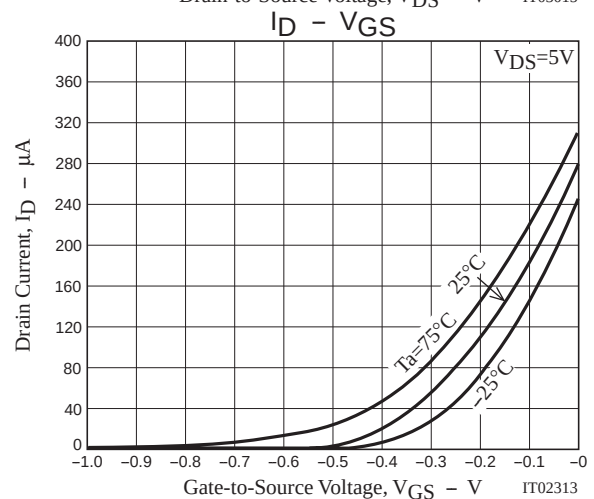
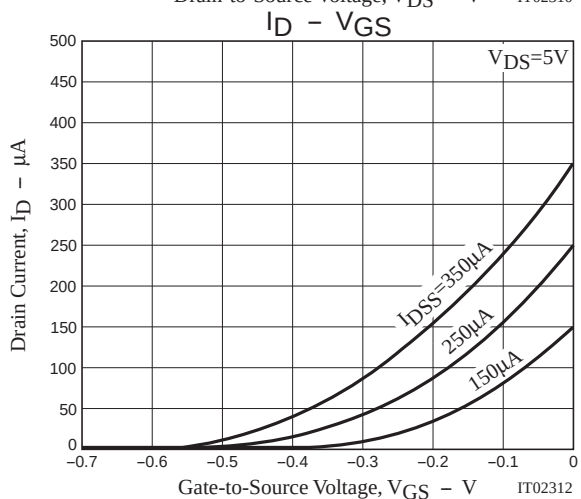
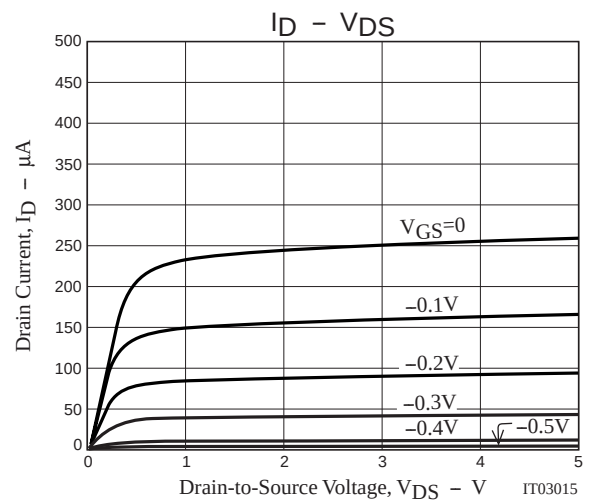
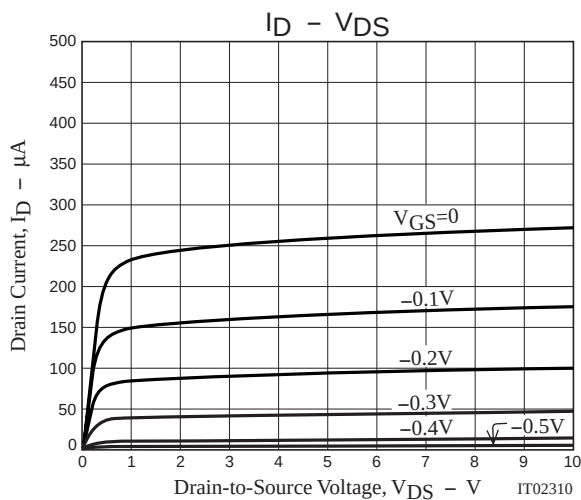
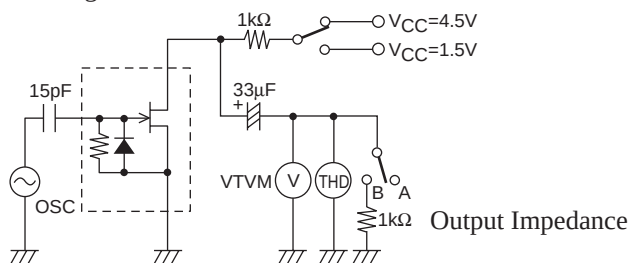
Test Circuit

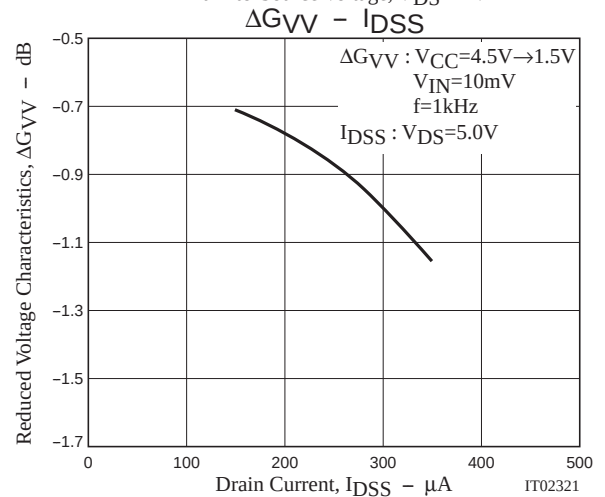
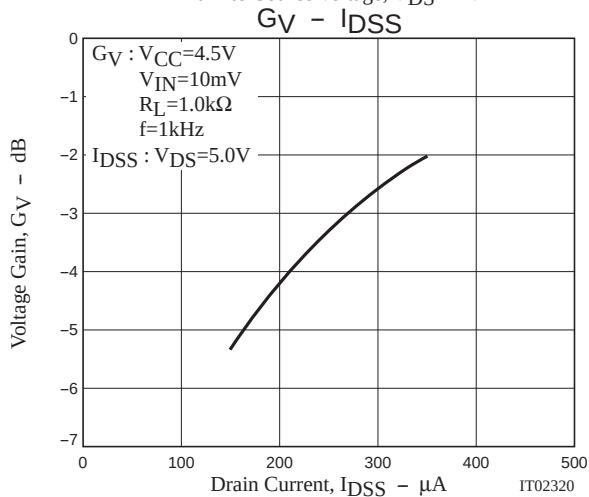
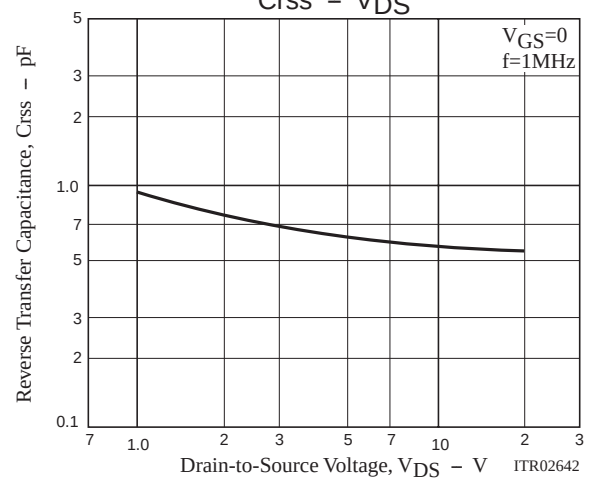
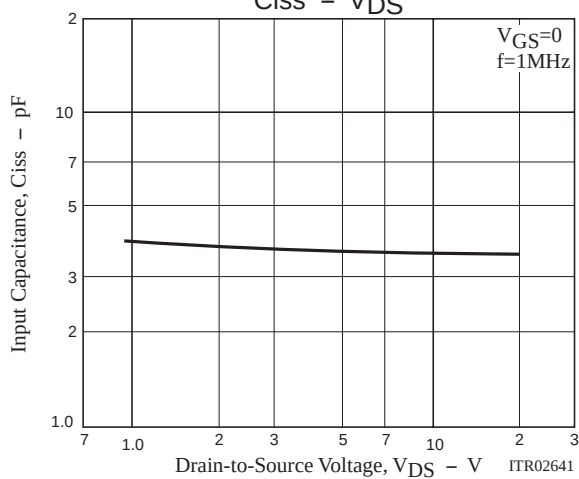
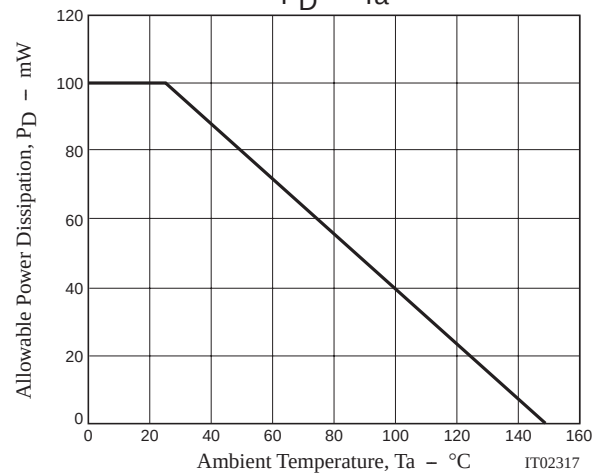
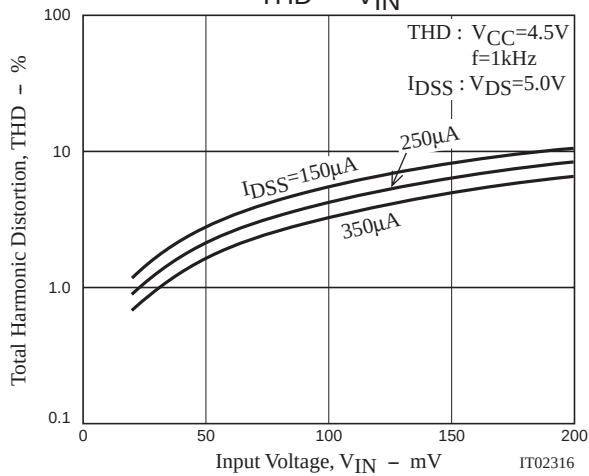
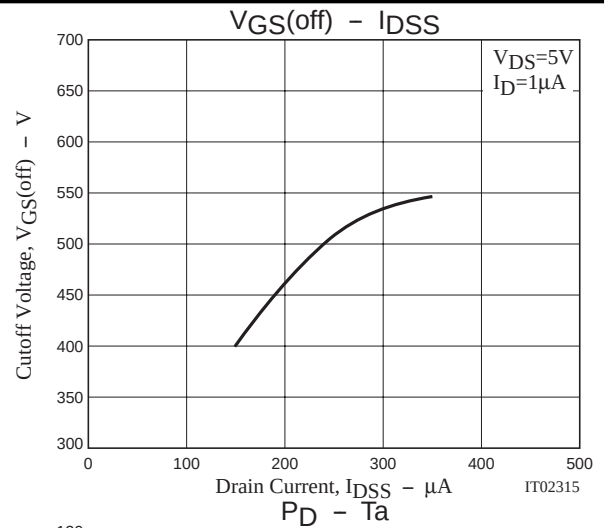
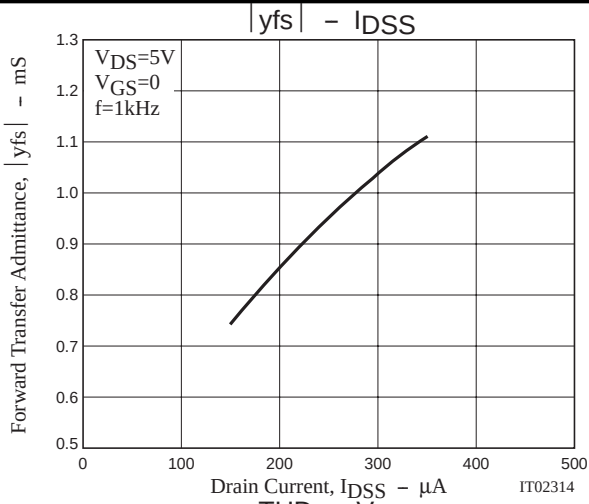
Voltage gain

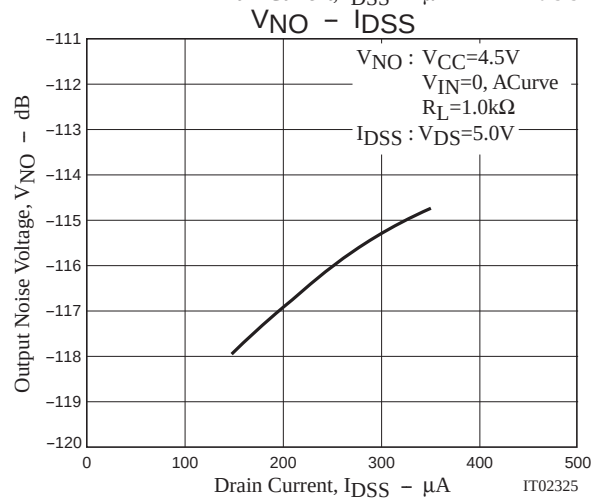
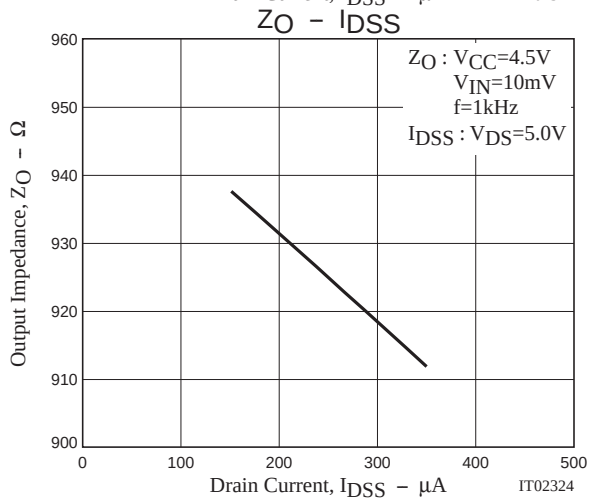
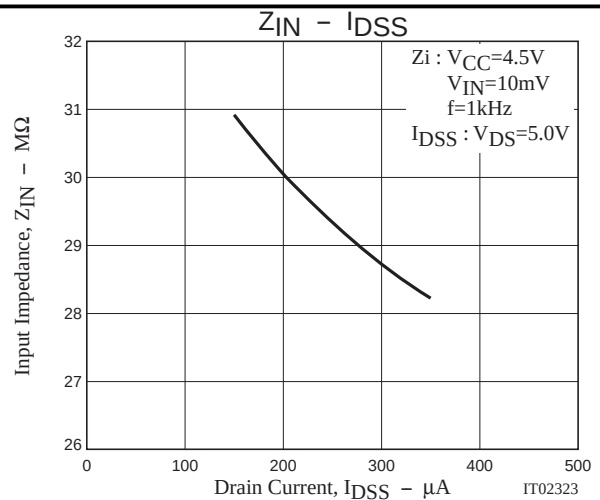
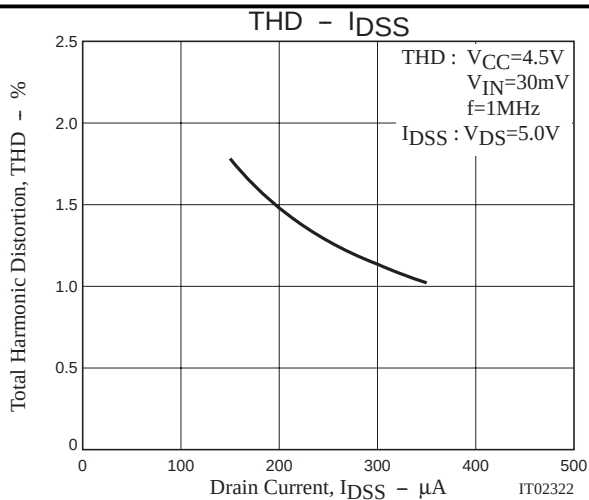
Frequency Characteristic

Distortion

Reduced Voltage Characteristic







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