



EC4A01TF — N-Channel Silicon Junction FET

Condenser Microphone Applications

Features

- Ultrasmall (1006 size), thin (0.35mm) leadless package.
- Especially suited for use in condenser microphone for audio equipments and telephones.
- 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	PD		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
Forward Transfer Admittance	y _{fs}	V _{DS} =5V, V _{GS} =0V, f=1kHz	0.5	1.0		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	f=1kHz, V _{IN} =10mV		-3.0		dB
Reduced Voltage Characteristics	ΔG _V	f=1kHz, V _{IN} =10mV, V _{CC} =4.5→1.5V		-0.9	-3.5	dB
Frequency Characteristics	ΔG _v	f=1kHz to 110Hz			-1.0	dB

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* : The EC4A01TF is classified by I_{DSS} as follows : (unit : μA)

Rank	4	5
I _{DSS}	140 to 240	210 to 350

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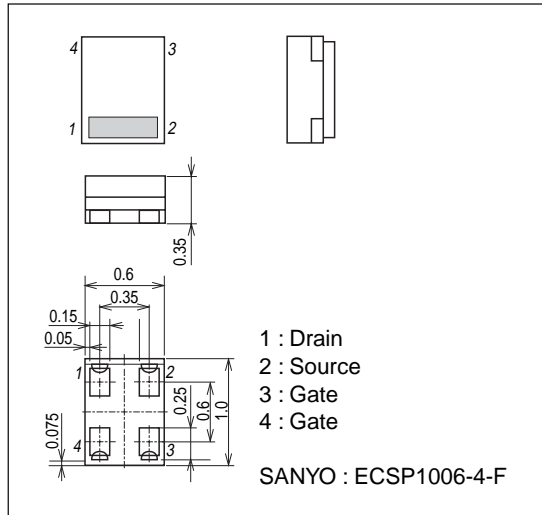
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Impedance	Z_{IN}	$f=1\text{kHz}$	25			$M\Omega$
Output Impedance	Z_O	$f=1\text{kHz}$		1000		Ω
Total Harmonic Distortion	THD	$f=1\text{kHz}, V_{IN}=30\text{mV}$		1.2		%
Output Noise Voltage	V_{NO}	$V_{IN}=0\text{V}, \text{A Curve}$			-110	dB

Package Dimensions

unit : mm

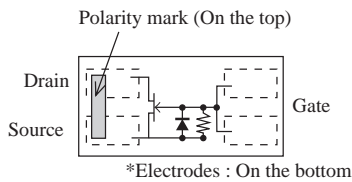
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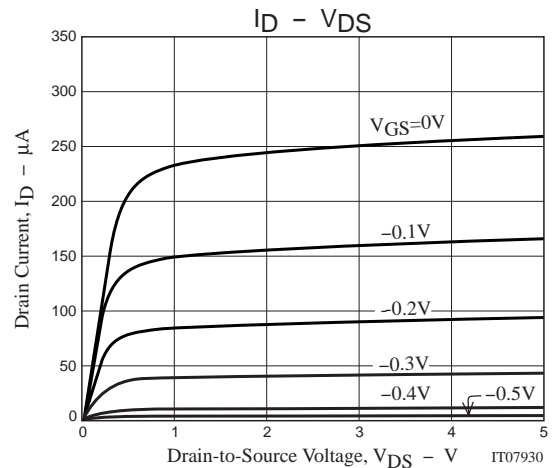
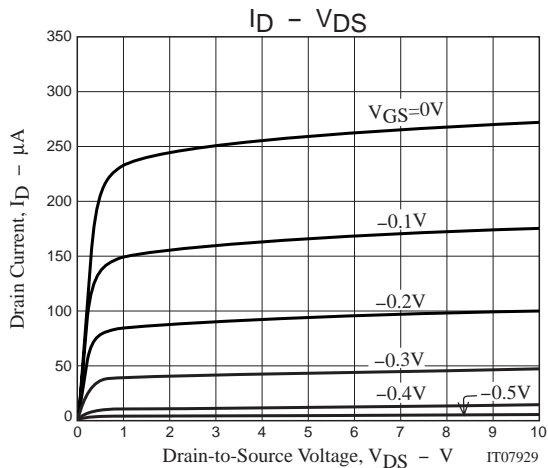
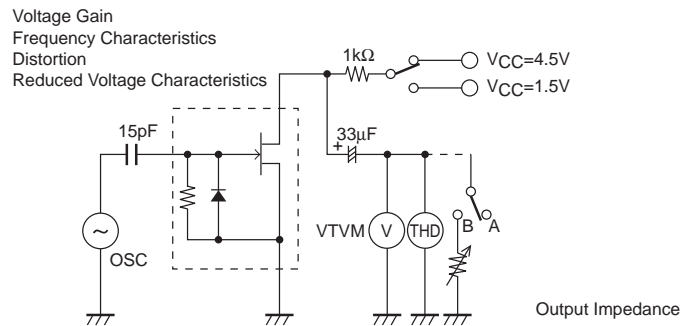
Type No. Indication (Top view)



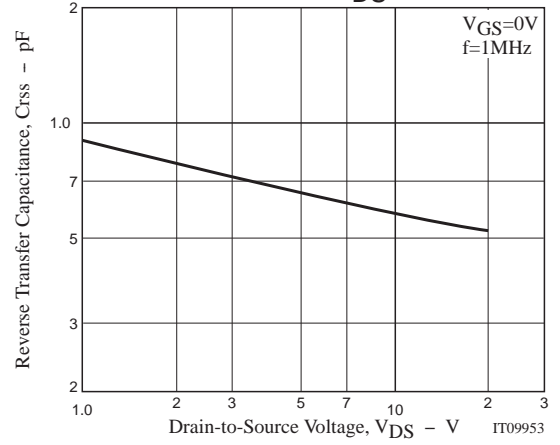
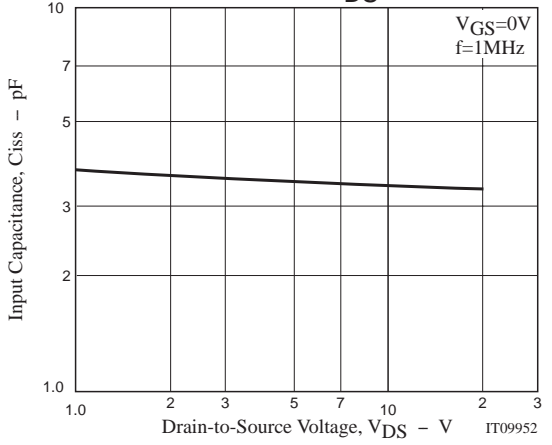
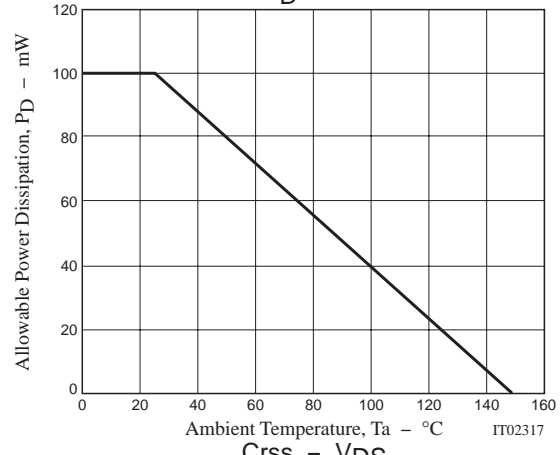
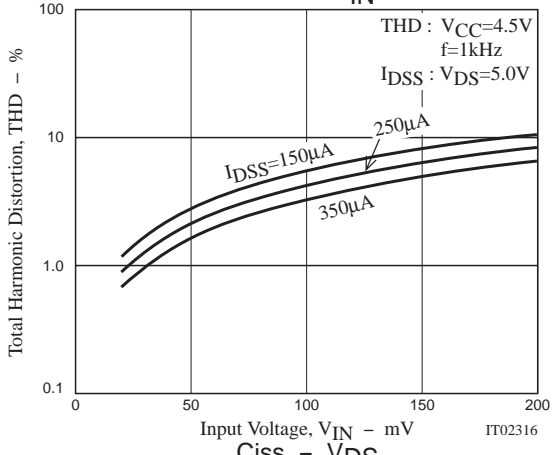
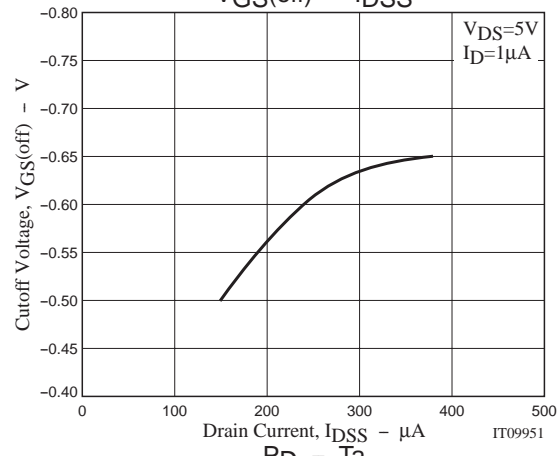
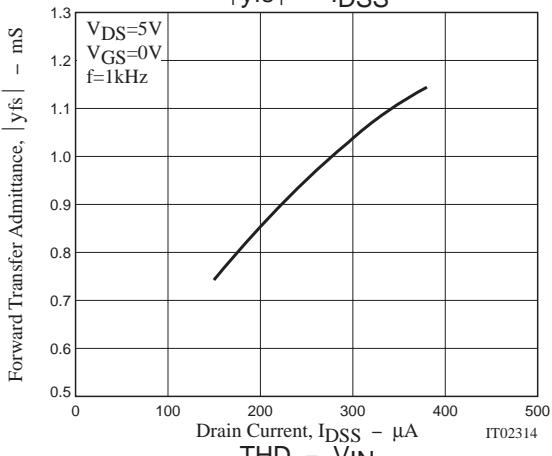
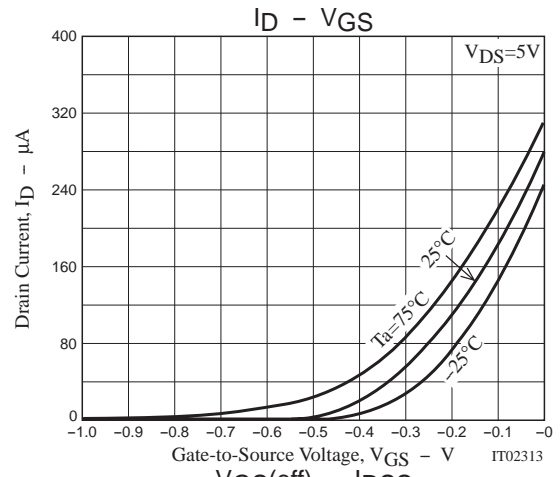
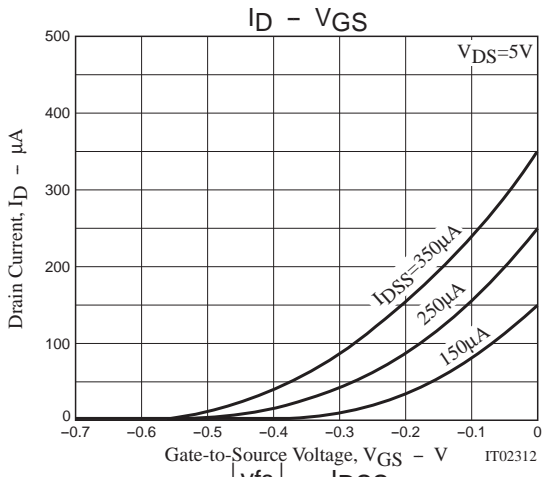
Electrical Connection (Top view)



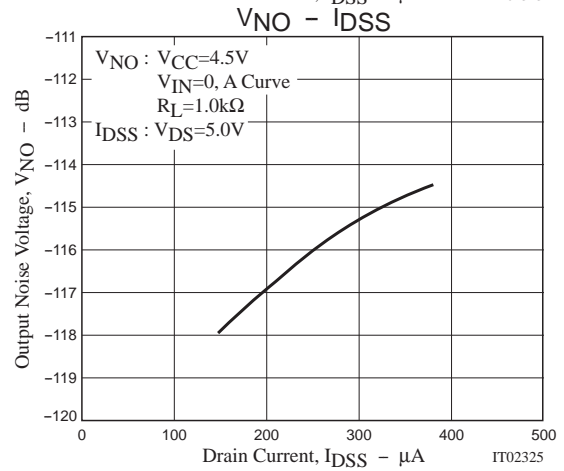
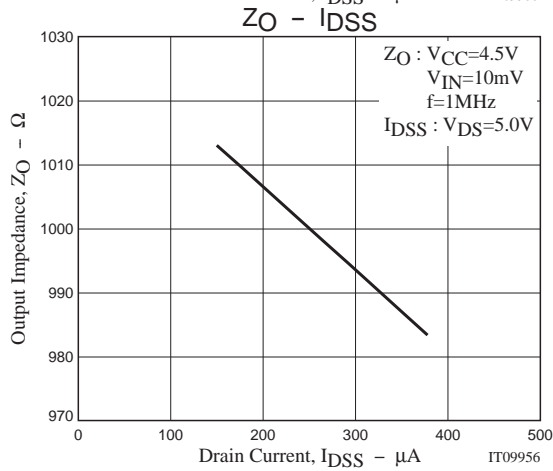
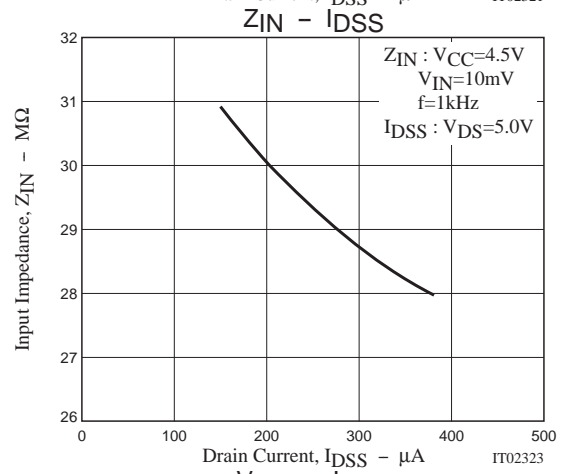
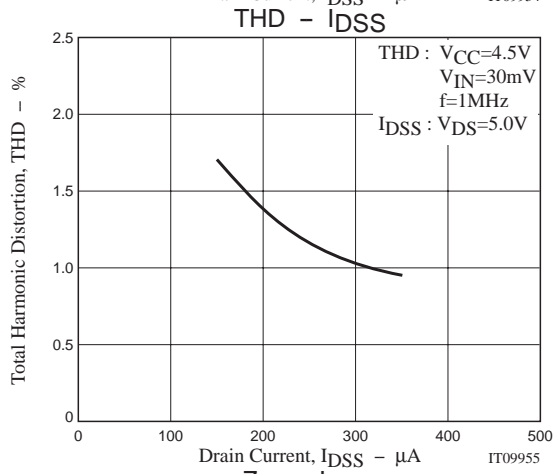
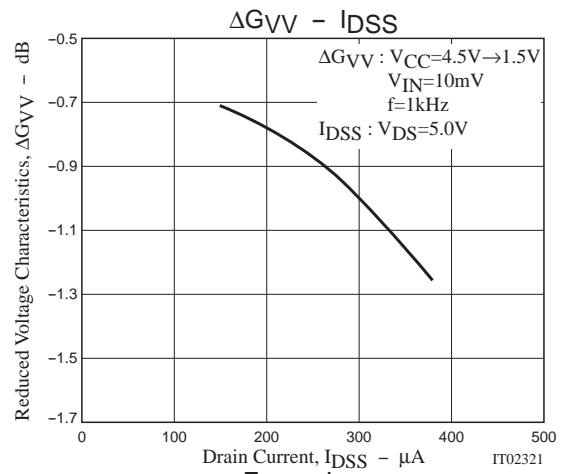
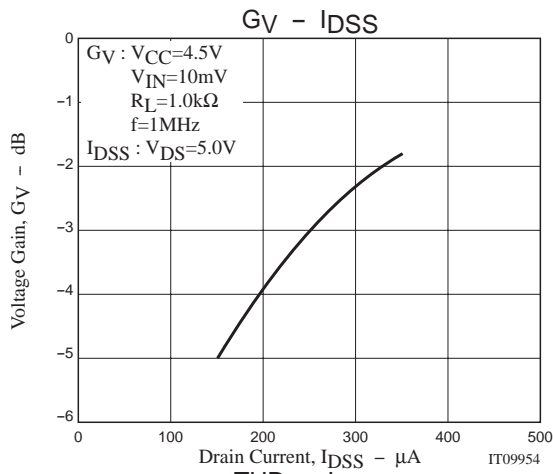
Test Circuit



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