



EC3A01B — N-Channel Silicon Junction FET Electret Condenser Microphone Applications

Features

- Ultrasmall (1006 size), thin (0.5mm) leadless package.
- Especially suited for use in electret condenser microphone for audio equipments and telephones.
- 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} =0	140		350	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

*The EC3A01B is classified by I_{DSS} as follows.(unit : μA)

Rank	V4A	V5A
I _{DSS}	140 to 240	210 to 350

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EC3A01B

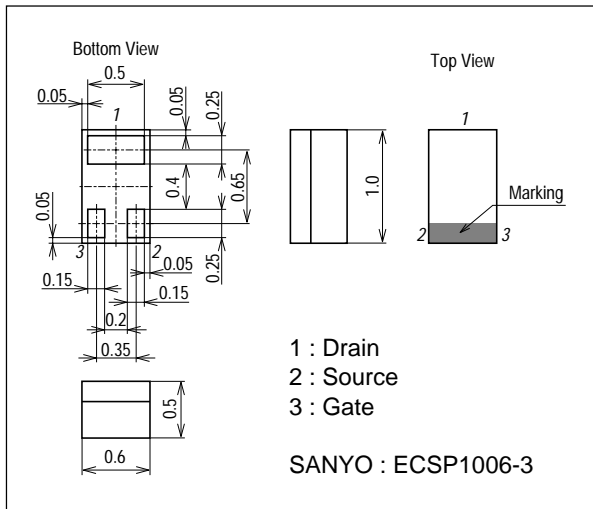
[Ta=25°C, V_{CC}=4.5V, R_L=1kΩ, C_{in}=15pF, See Specified Test Circuit]

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Voltage Gain	G _V	f=1kHz, V _{IN} =10mV		-3.0		dB
Reduced Voltage Characteristics	ΔG _{VV}	f=1kHz, V _{IN} =10mV, V _{CC} =4.5→1.5V		-1.2	-3.5	dB
Frequency Characteristics	ΔG _{Vf}	f=1kHz to 110kHz			-1.0	dB
Input Impedance	Z _{IN}	f=1kHz	25			MΩ
Output Impedance	Z _O	f=1kHz		1000		Ω
Total Harmonic Distortion	THD	f=1kHz, V _{IN} =30mV		1.2		%
Output Noise Voltage	V _{NO}	V _{IN} =0, A Curve			-110	dB

Package Dimensions

unit : mm

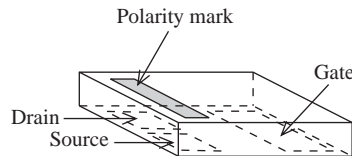
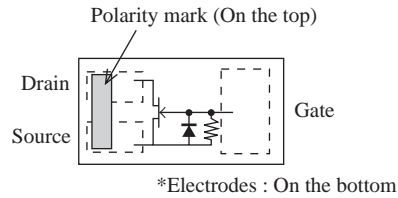
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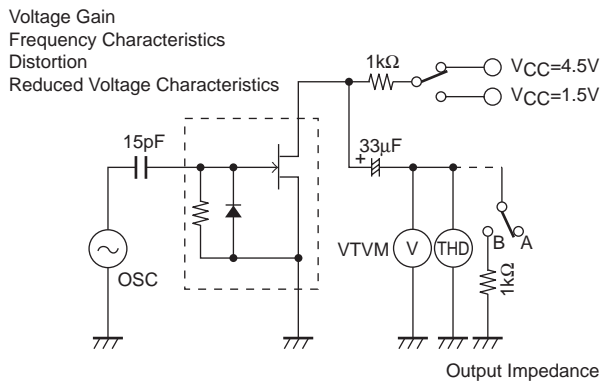
Type No. Indication (Top view)

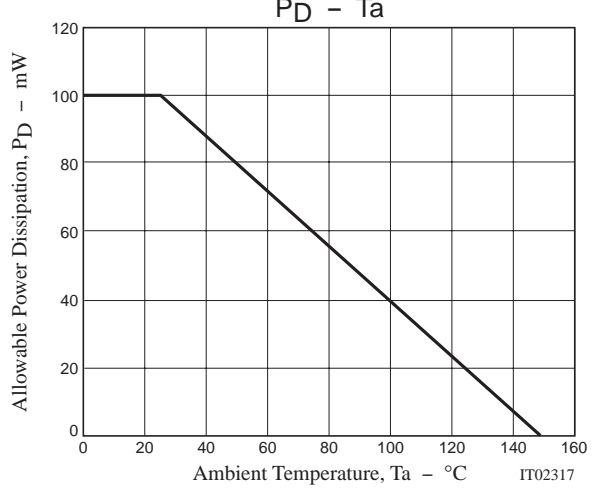
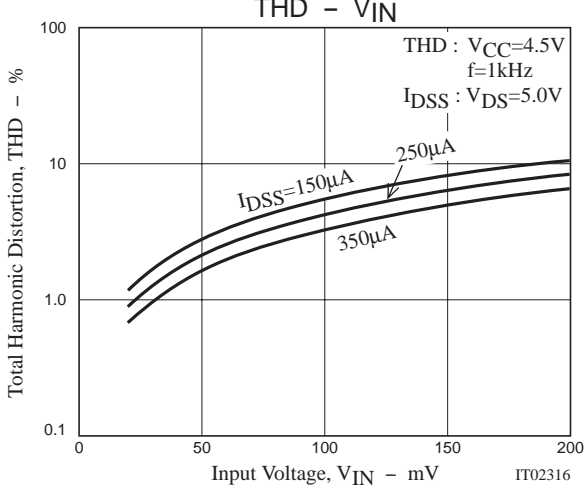
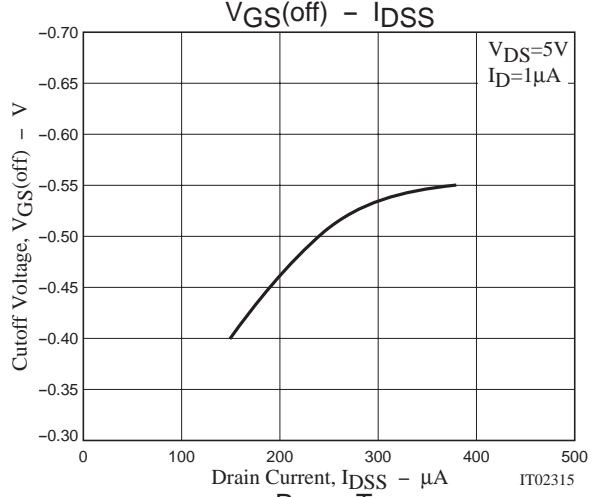
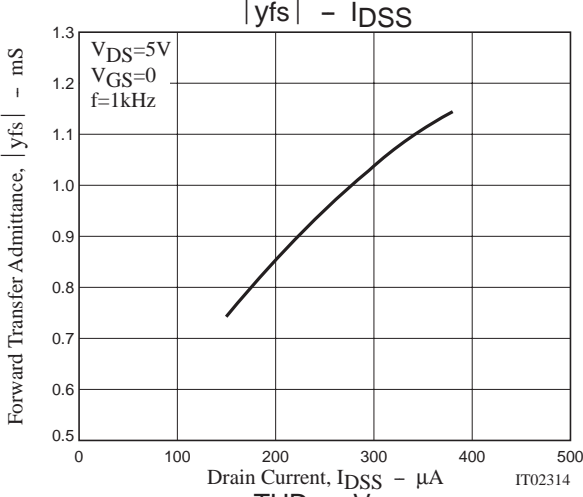
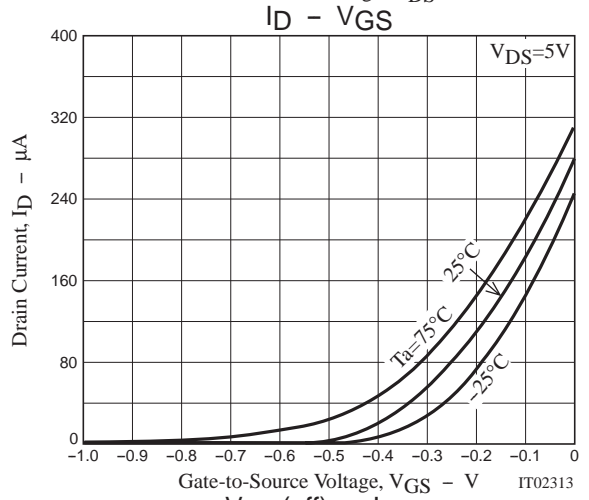
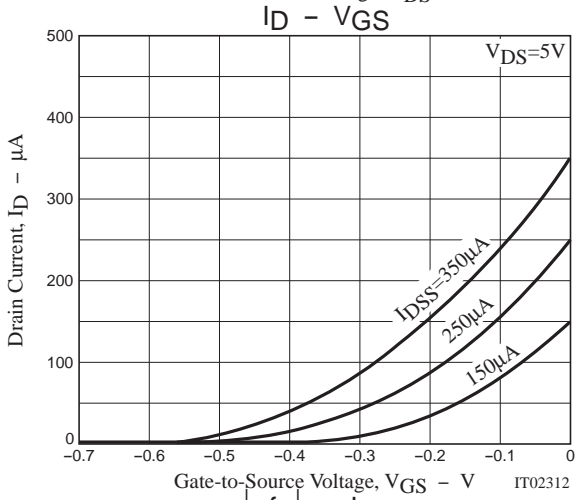
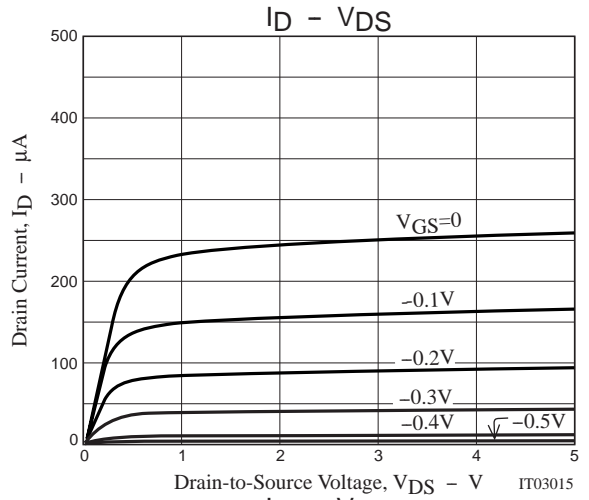
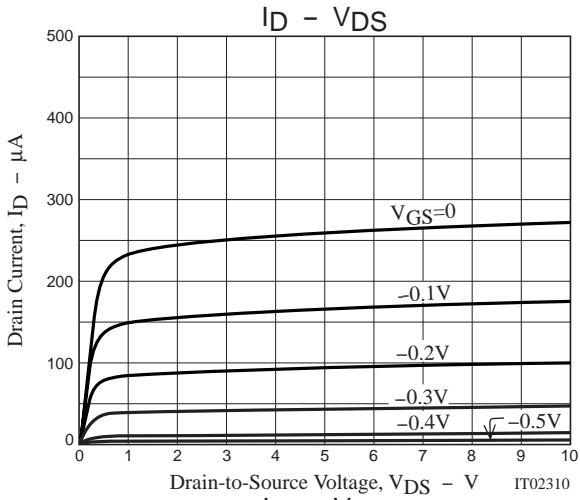


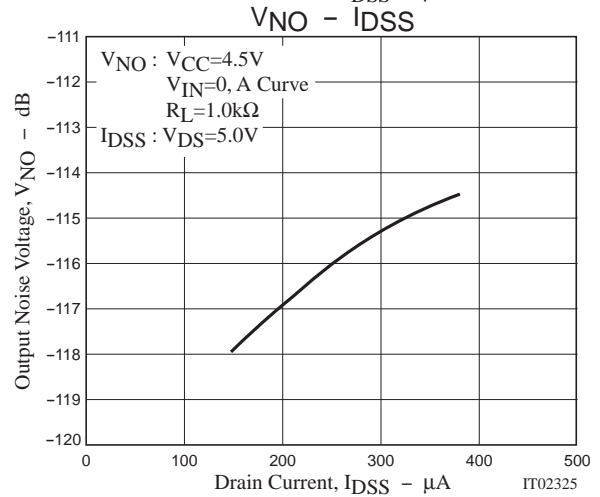
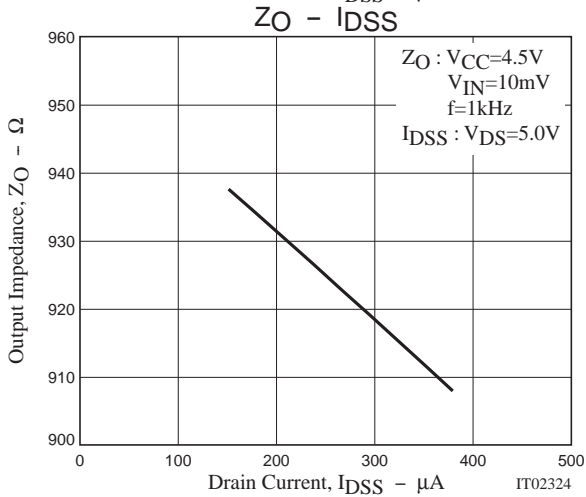
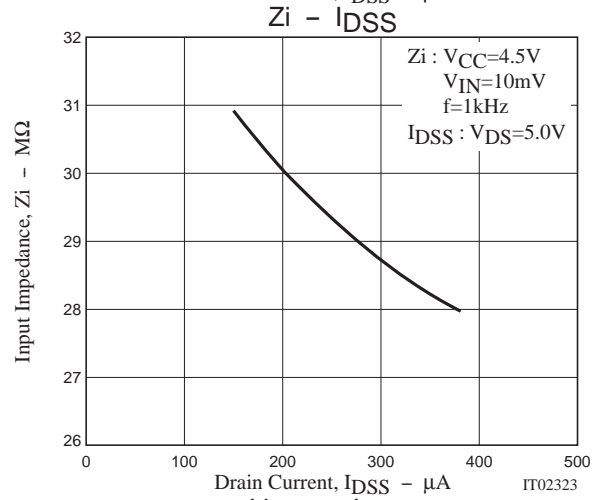
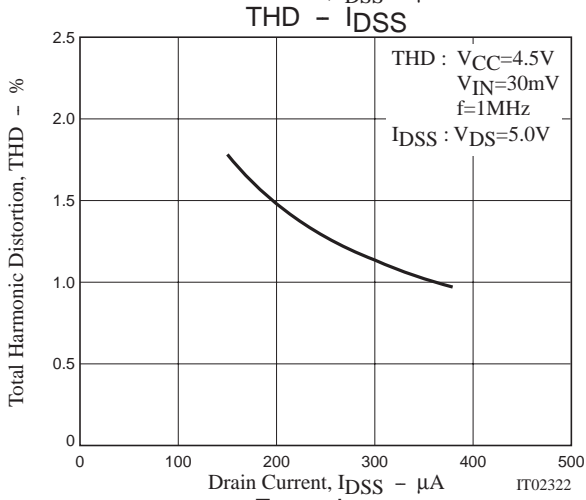
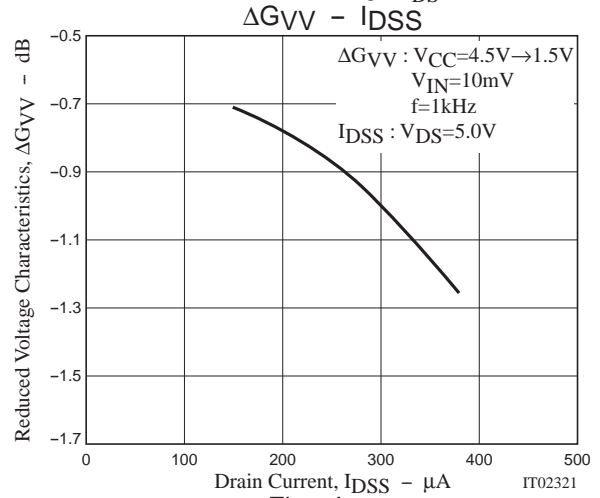
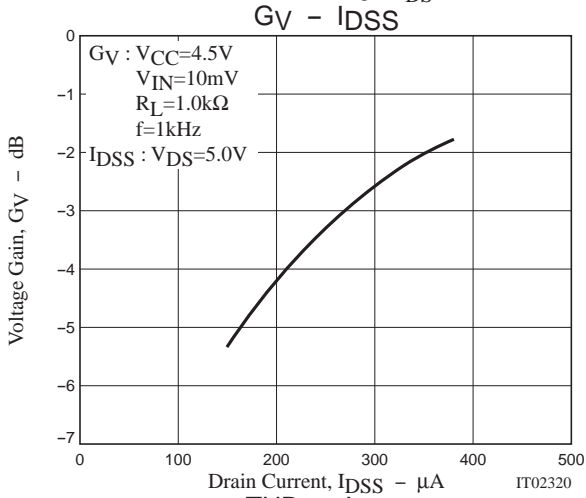
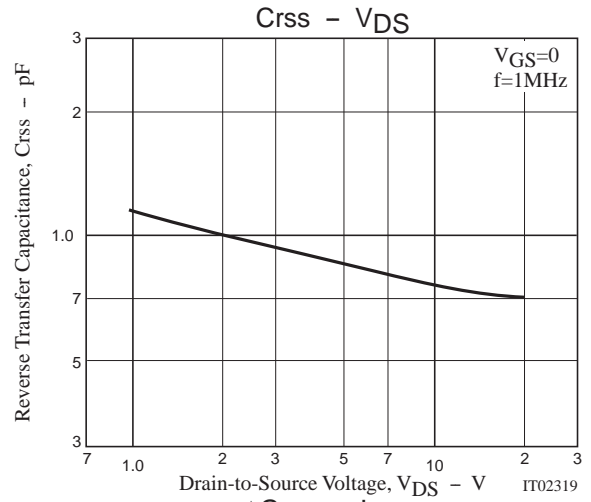
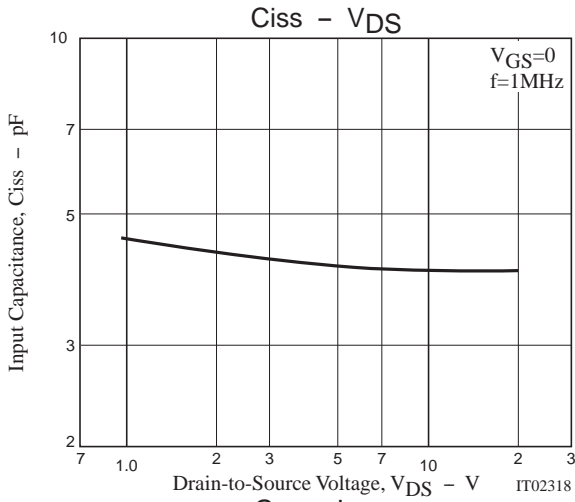
Electrical Connection (Top view)



Switching Time Test Circuit







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