

Ordering number : ENN7301

N-Channel Silicon Junction FET



EC3A01H

## Electret Condenser Microphone Applications

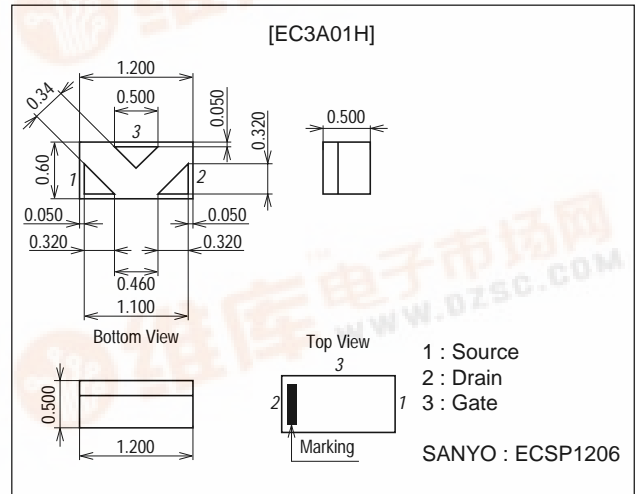
### Features

- Ultraminiature (1206 size) and 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.

### Package Dimensions

unit : mm

2209



### Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Gate-to-Drain Voltage	V <sub>GDO</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)GDO</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	-1.2	V
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	1.2		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

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[ $T_a=25^\circ\text{C}$ ,  $V_{CC}=4.5\text{V}$ ,  $R_L=1\text{k}\Omega$ ,  $C_{in}=15\text{pF}$ , See Specified Test Circuit]

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Voltage Gain	$G_V$	$f=1\text{kHz}$ , $V_{IN}=10\text{mV}$		-3.0		dB
Reduced Voltage Characteristics	$\Delta G_{VV}$	$f=1\text{kHz}$ , $V_{IN}=10\text{mV}$ , $V_{CC}=4.5 \rightarrow 1.5\text{V}$		-1.2	-3.5	dB
Frequency Characteristics	$\Delta G_{vf}$	$f=1\text{kHz} \rightarrow 110\text{kHz}$			-1.0	dB
Input Impedance	$Z_{IN}$	$f=1\text{kHz}$	25			$\text{M}\Omega$
Output Impedance	$Z_O$	$f=1\text{kHz}$		1000		$\Omega$
Total Harmonic Distortion	THD	$f=1\text{kHz}$ , $V_{IN}=30\text{mV}$		1.2		%
Output Noise Voltage	$V_{NO}$	$V_{IN}=0$ , A Curve			-110	dB

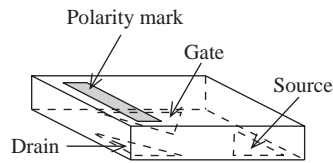
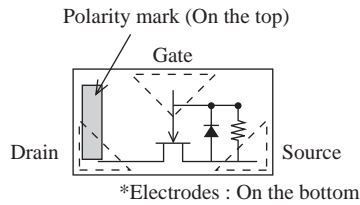
\*EC3A01H is classified by  $I_{DSS}$  as follows. (unit :  $\mu\text{A}$ )

$I_{DSS}$	V4	V5
	140 to 240	210 to 350

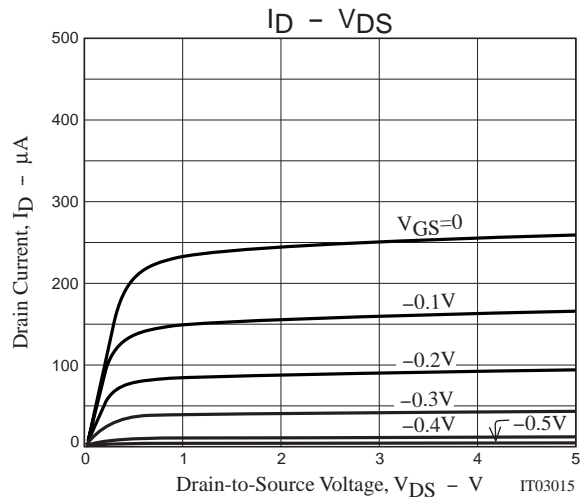
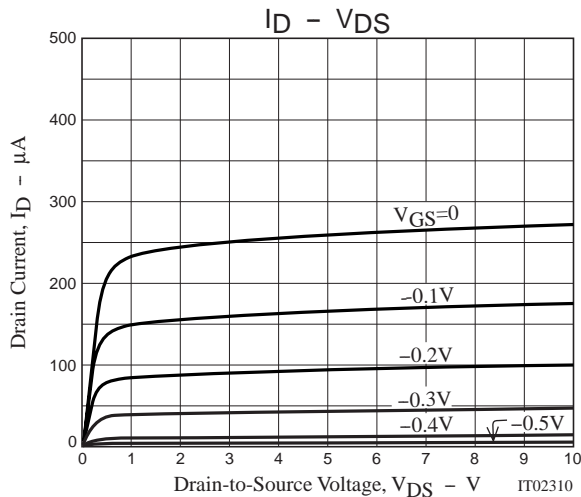
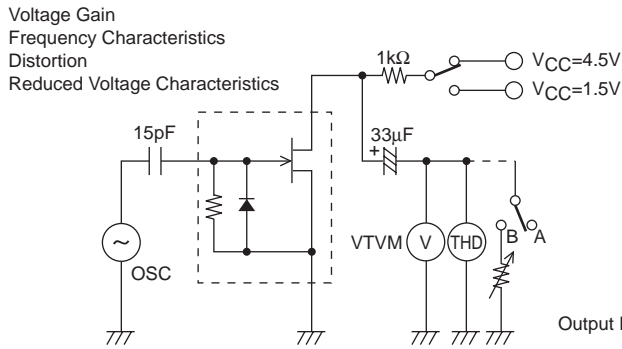
## Type No. Indication (Top view)



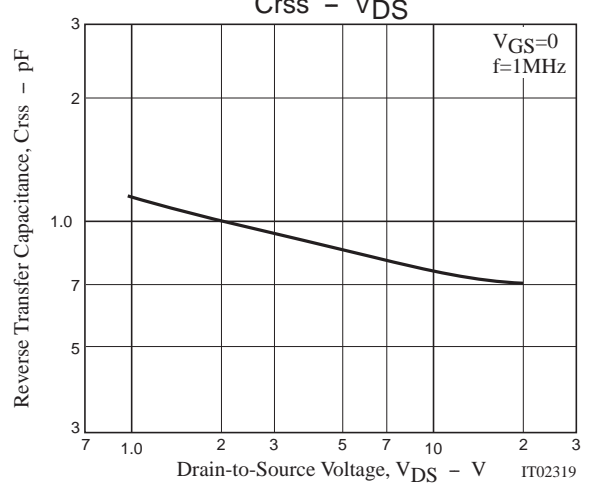
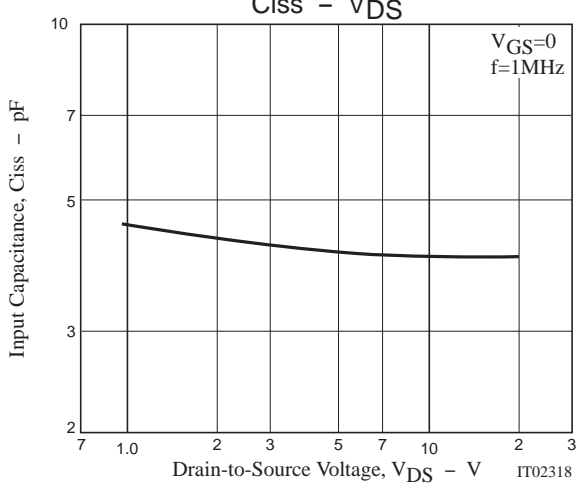
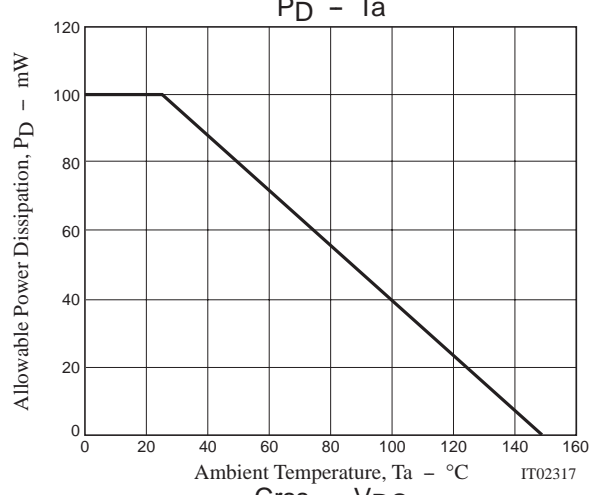
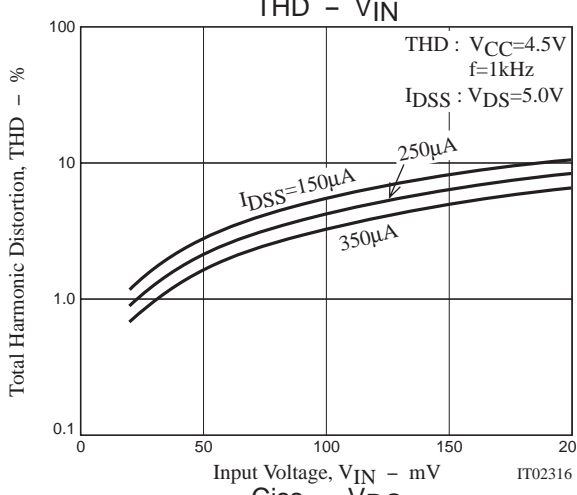
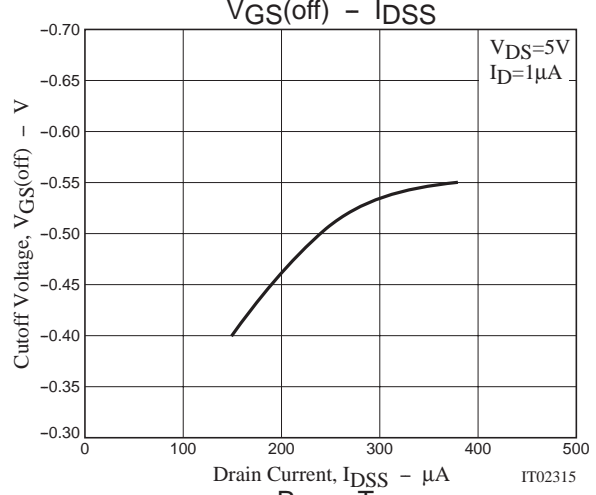
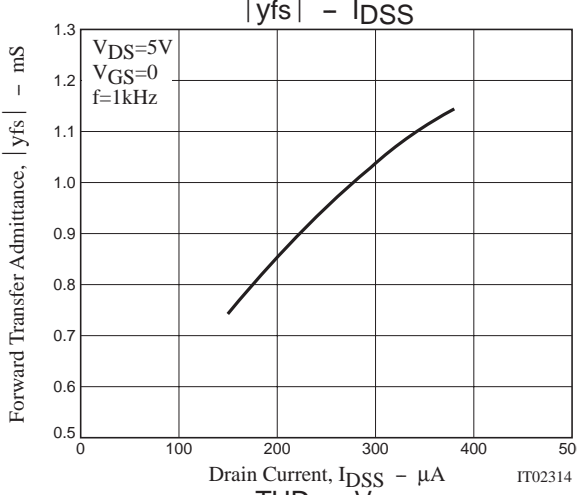
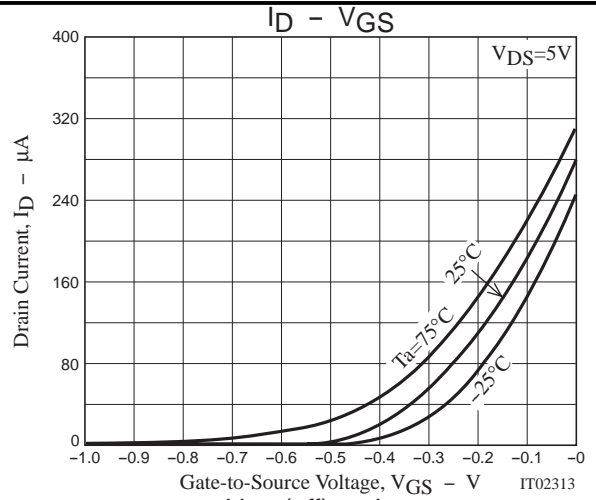
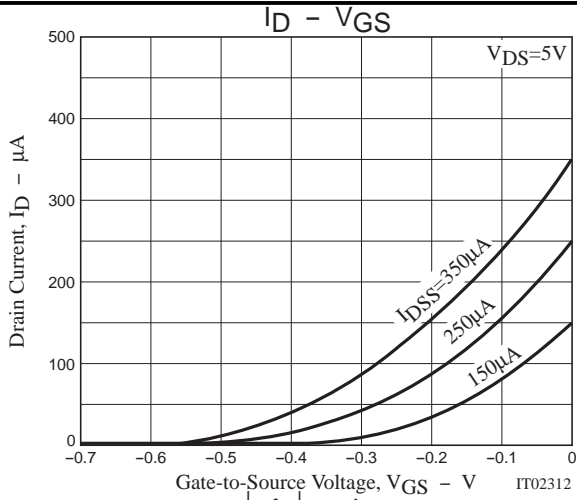
## Electrical Connection (Top view)



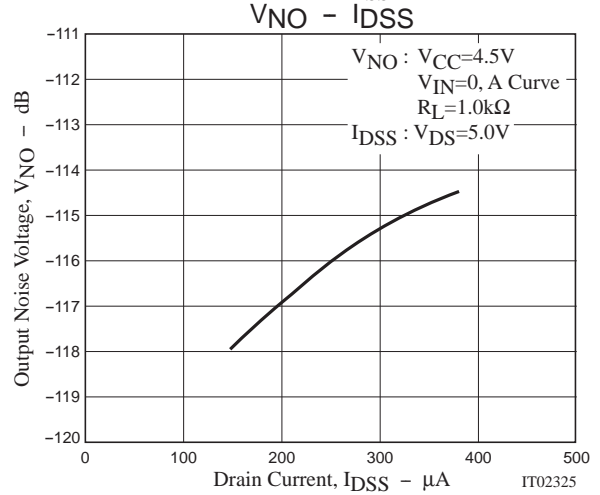
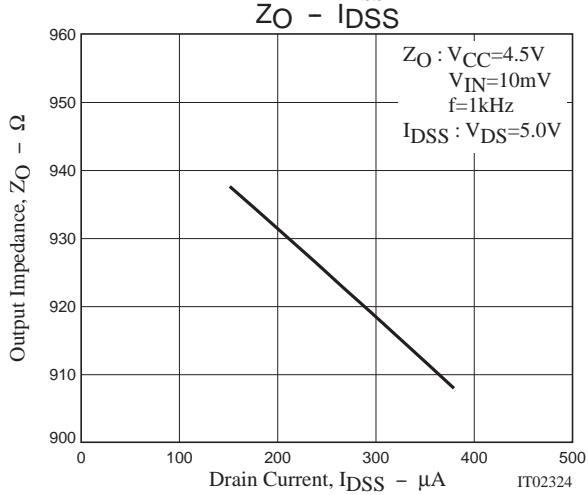
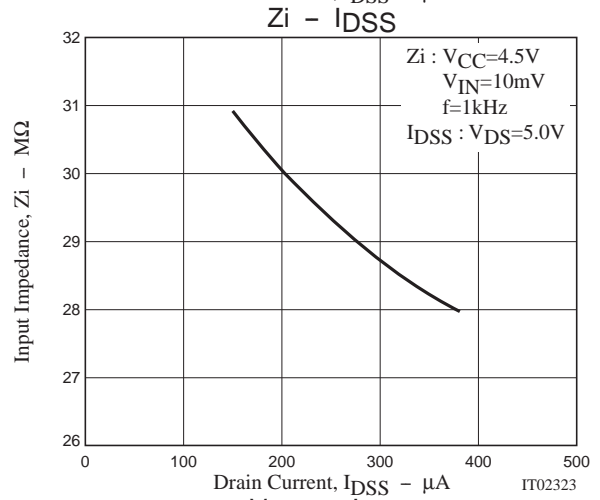
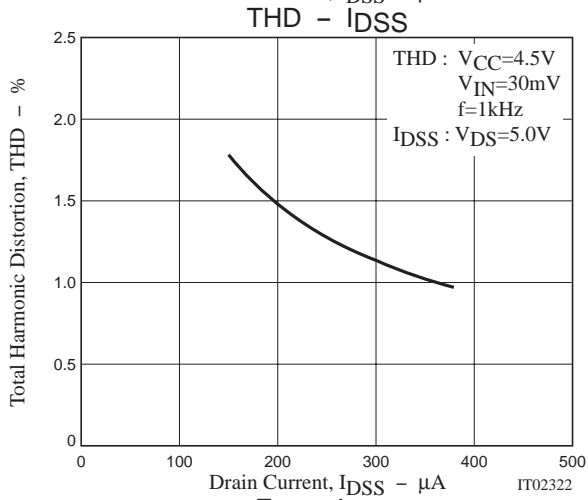
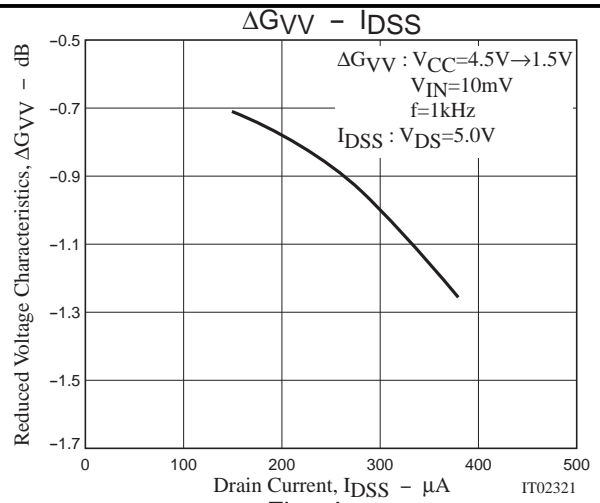
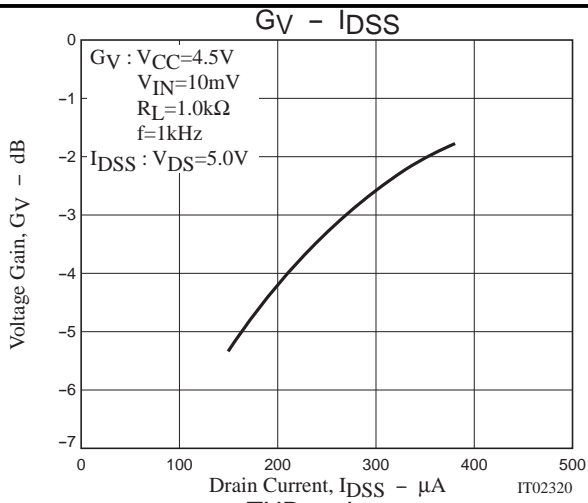
## Test Circuit



# EC3A01H



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