

Ordering number : ENN7621

N-Channel Silicon Junction FET

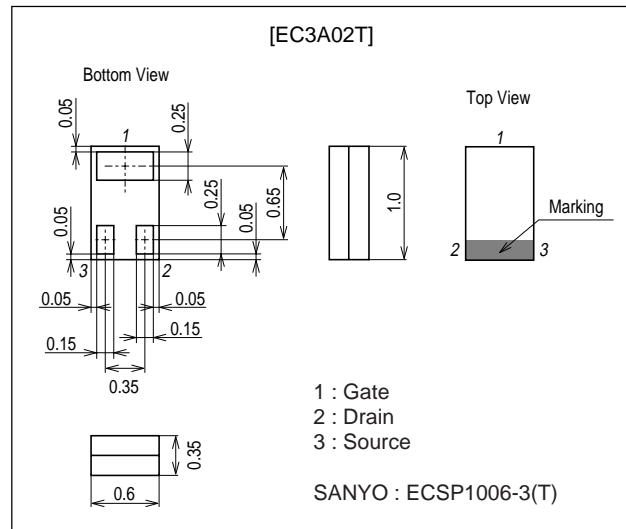
**EC3A02T**

## Electret Condenser Microphone Applications

### Features

- Ultrasmall (1006 size) and thin (0.35mm) 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  
2223

### Specifications

Absolute Maximum Ratings at  $T_a=25^\circ\text{C}$ 

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	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at  $T_a=25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gate-to-Drain Breakdown Voltage	$V_{(BR)GDO}$	$I_G=-100\mu\text{A}$	-20			V
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=2\text{V}, I_D=1\mu\text{A}$	-0.1		-1.0	V
Drain Current	$I_{DSS}$	$V_{DS}=2\text{V}, V_{GS}=0$	140*		350*	$\mu\text{A}$

Continued on next page.

\*The EC3A02T is classified by  $I_{DSS}$  as follows.(unit :  $\mu\text{A}$ )

Rank	4	5
$I_{DSS}$	140 to 240	210 to 350

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**SANYO Electric Co.,Ltd. Semiconductor Company**

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Continued from preceding page.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=2V, V_{GS}=0, f=1kHz$	0.5			mS
Input Capacitance	$C_{iss}$	$V_{DS}=2V, V_{GS}=0, f=1MHz$		5.0		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=2V, V_{GS}=0, f=1MHz$		1.1		pF

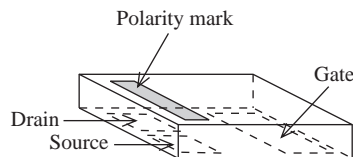
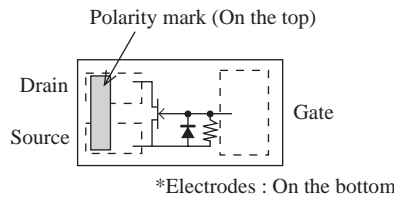
[ $T_a=25^\circ C, V_{CC}=2.0V, R_L=2.2k\Omega, C_{in}=5pF$ , See Specified Test Circuit]

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Voltage Gain	$G_V$	$f=1kHz, V_{IN}=10mV$		-2.0		dB
Reduced Voltage Characteristic	$\Delta G_{VV}$	$f=1kHz, V_{IN}=10mV, V_{CC}=2 \rightarrow 1.5V$		-0.6	-2.0	dB
Frequency Characteristic	$\Delta G_{vf}$	$f=1kHz \text{ to } 110Hz$			-1.0	dB
Total Harmonic Distortion	THD	$f=1kHz, V_{IN}=30mV$		0.7		%
Output Noise Voltage	$V_{NO}$	$V_{IN}=0, A \text{ Curve}$			-102	dB

## Type No. Indication (Top view)

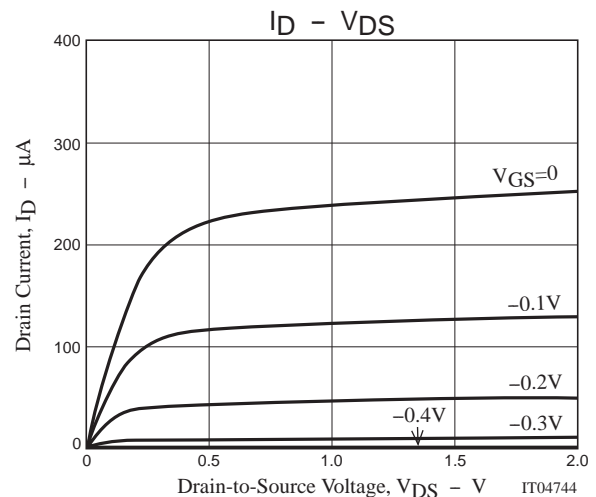
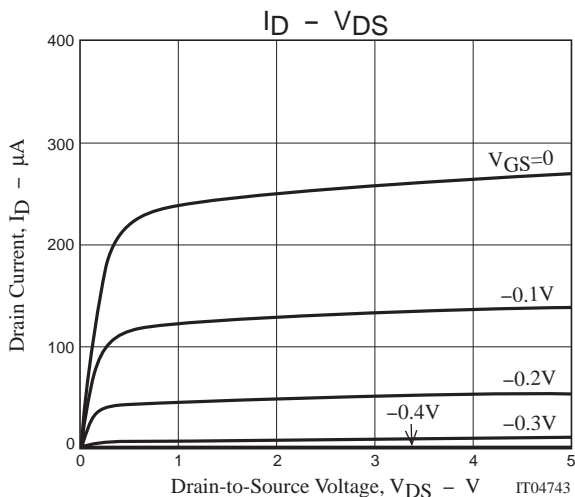
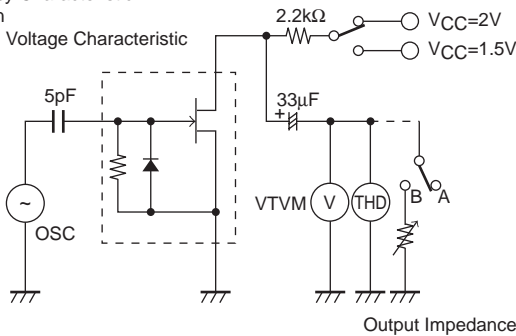


## Electrical Connection (Top view)

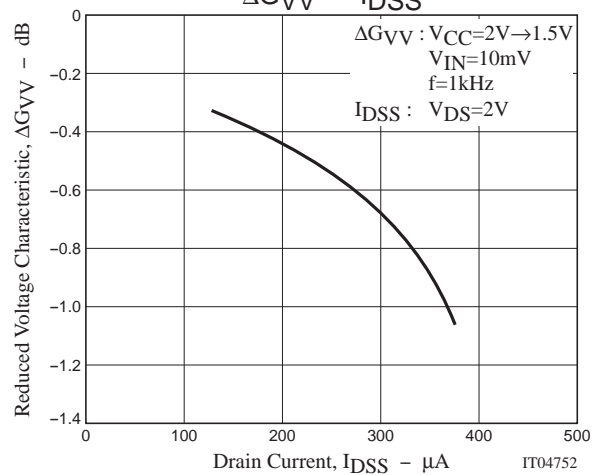
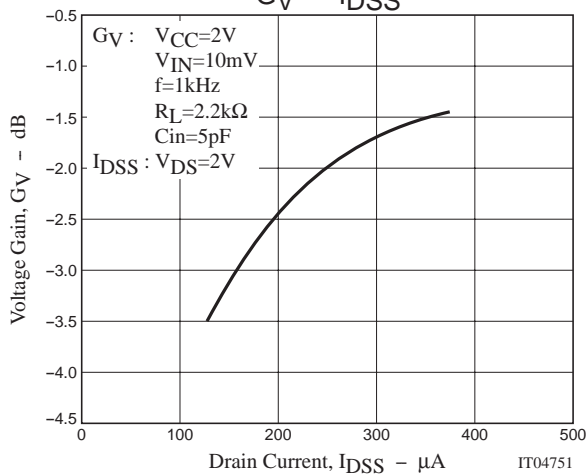
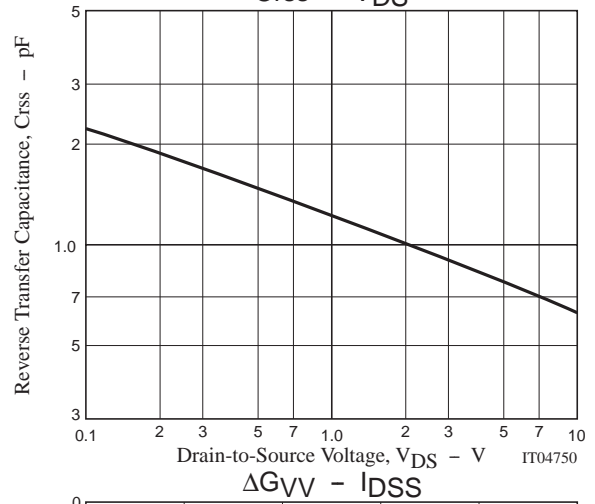
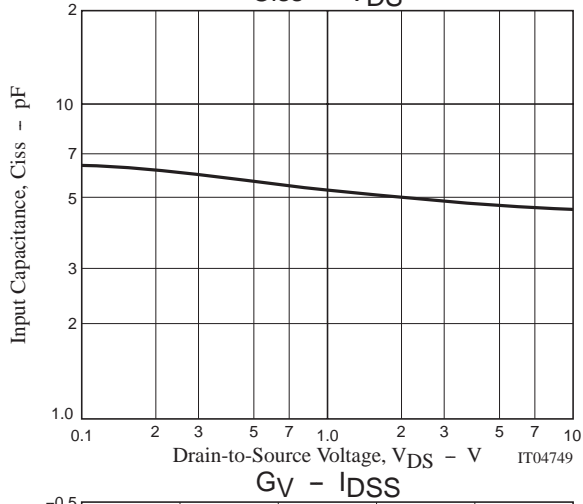
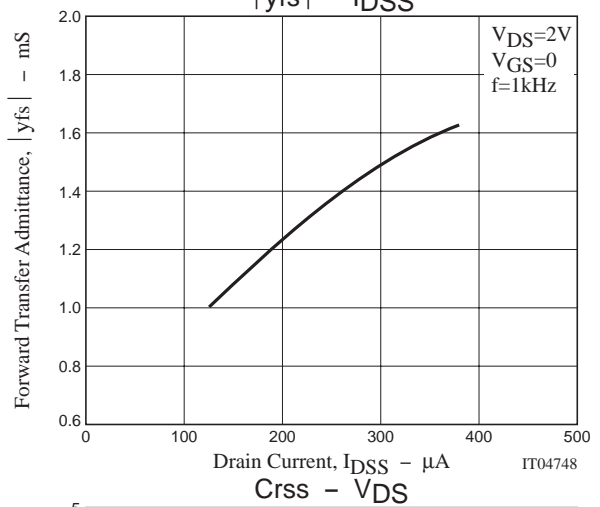
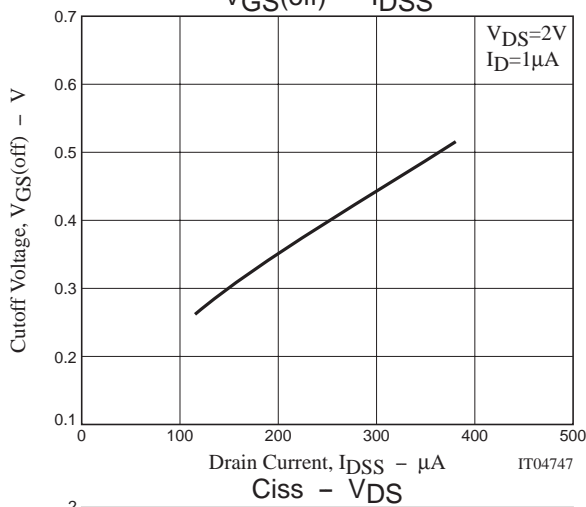
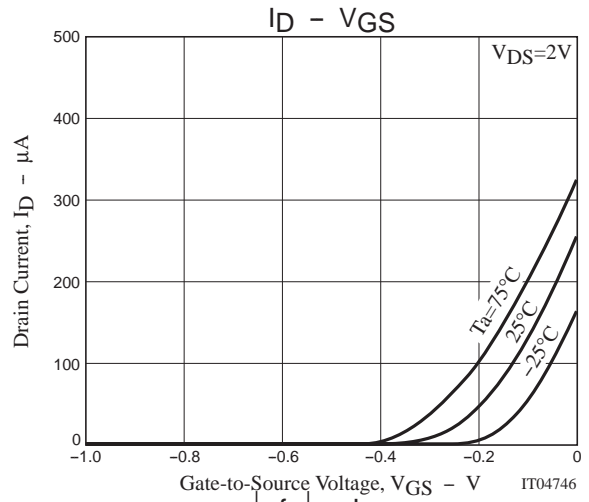
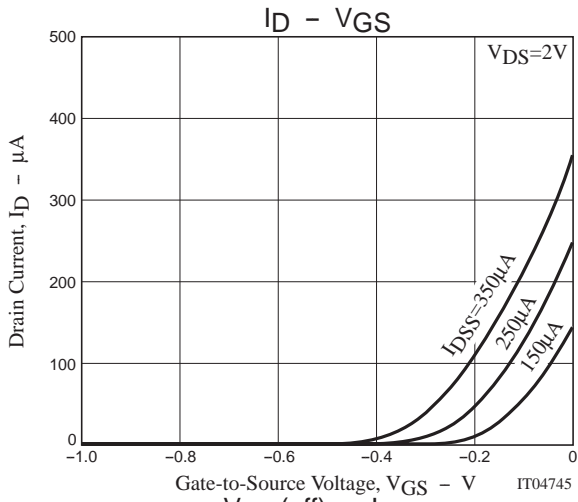


## Test Circuit

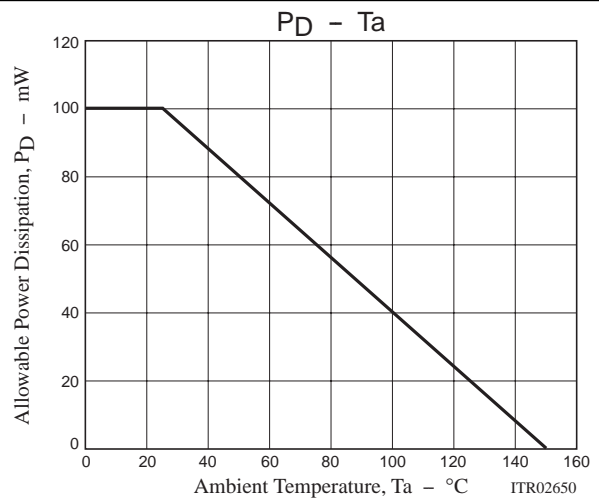
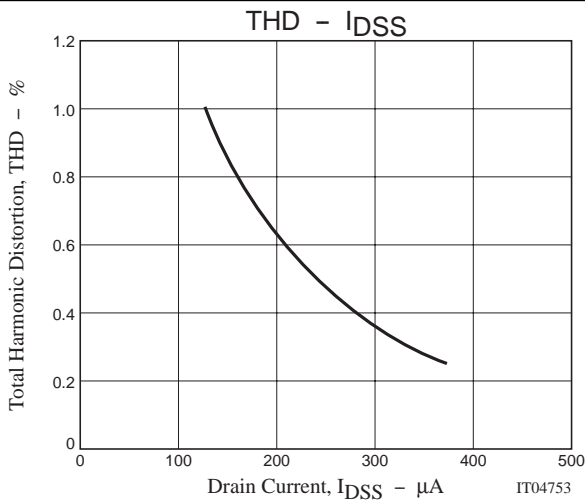
Voltage Gain  
Frequency Characteristic  
Distortion  
Reduced Voltage Characteristic



# EC3A02T



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