Ordering number : ENA1343

SANYO Semiconductors
DATA SHEET

N-channel Silicon Junction FET

TF202FC — Electret Condenser Microphone Applications

Features

- Ultrasmall package facilitates miniaturization in end products.
- Especially suited for use in electret condenser microphone for audio equipments and telephones.
- Excellent voltage characteristics.
- Excellent transient characteristics.
- Adoption of FBET process.
- Halogen free compliance.

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	Tj		150	°C
Storage Temperature	Tstg		−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

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain Current	I_{DSS}	V_{DS}=5V, V_{GS}=0V	140*		350*	μA
Forward Transfer Admittance	| yfs |	V_{DS}=5V, V_{GS}=0V, f=1kHz	0.5	1.0		mS
Input Capacitance	Ciss	V_{DS}=5V, V_{GS}=0V, f=1MHz		3.5		pF
Reverse Transfer Capacitance	Crss	V_{DS}=5V, V_{GS}=0V, f=1MHz		0.65		pF
[Ta=25°C, V_{CC}=4.5V, R_L=1kΩ, Cin=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}=4.5V → 1.5V		−1.2	−3.5	dB
Frequency Characteristic	ΔGvf	f=1kHz to 110Hz			−1.0	dB
Total Harmonic Distortion	THD	V_{IN}=30mV, f=1kHz		1.2		%
Output Noise Voltage	V_{NO}	V_{IN}=0V, A Curve			−110	dB

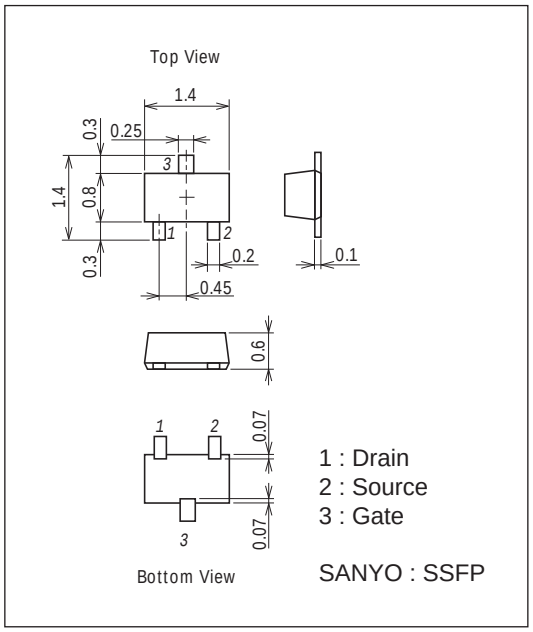
* : The TF202FC is classified by I_{DSS} as follows : (unit : μA)

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

Package Dimensions

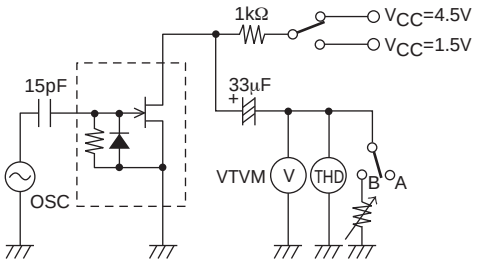
unit : mm (typ)

7029-004



Test Circuit

Voltage gain
Frequency Characteristic
Distortion
Reduced Voltage Characteristic



Output Impedance