Ordering number : ENA1906A

TF262TH

N-Channel JFET
20V, 140 to 350μA, 0.95mS, VTFP

ON Semiconductor®
http://onsemi.com

Features

- Low output noise voltage : V_{NO}= -112dB typ. (V_{CC}=2V, R_L=2.2kΩ, Cin=5pF)
- Ultrasmall package facilitates miniaturization in end products : 1.4mm × 1.2mm × 0.34mm
- Especially suited for use in electret condenser microphone for audio equipments and telephones
- Adoption of FBET process
- Halogen free compliance

Specifications

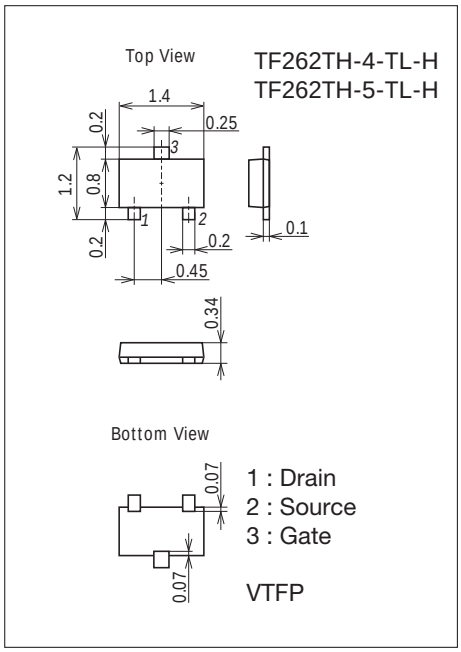
Absolute Maximum Ratings at Ta=25°C

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

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

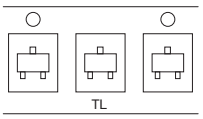
unit : mm (typ)
7031-001



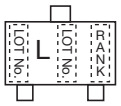
Product & Package Information

- Package : VTFP
- JEITA, JEDEC : SC-106A
- Minimum Packing Quantity : 8,000 pcs./real

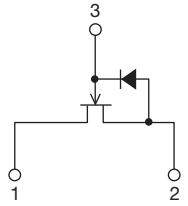
Packing Type: TL



Marking



Electrical Connection



Electrical Characteristics at Ta=25°C

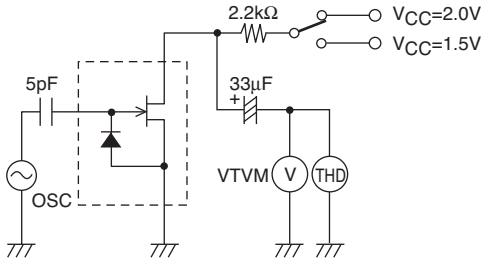
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gate to Drain Breakdown Voltage	$V_{(BR)GDO}$	I_G=−100μA	−20			V
Cutoff Voltage	$V_{GS(off)}$	V_{DS}=2V, I_D=1μA	−0.2	−0.5	−1.0	V
Drain Current	I_{DSS}	V_{DS}=2V, V_{GS}=0V	140*		350*	μA
Forward Transfer Admittance	| yfs |	V_{DS}=2V, V_{GS}=0V, f=1kHz	0.5	0.95		mS
Input Capacitance	Ciss	V_{DS}=2V, V_{GS}=0V, f=1MHz		3.5		pF
Reverse Transfer Capacitance	Crss	V_{DS}=2V, V_{GS}=0V, f=1MHz		0.65		pF
[Ta=25°C, V_{CC}=2.0V, R_L=2.2kΩ, Cin=5pF, See specified Test Circuit.]						
Voltage Gain	GV	V_{IN}=10mV, f=1kHz		−1.5		dB
Reduced Voltage Characteristic	ΔGVV	V_{IN}=10mV, f=1kHz, V_{CC}=2.0V → 1.5V		−0.8	−2.0	dB
Frequency Characteristic	ΔGvf	f=1kHz to 110Hz			−1.0	dB
Total Harmonic Distortion	THD	V_{IN}=30mV, f=1kHz		0.5		%
Output Noise Voltage	V_{NO}	V_{IN}=0V, A Curve		−112		dB

* : The TF262TH is classified by I_{DSS} as follows : (unit : μA)

Marking	L4	L5
Rank	4	5
I_{DSS}	140 to 240	210 to 350

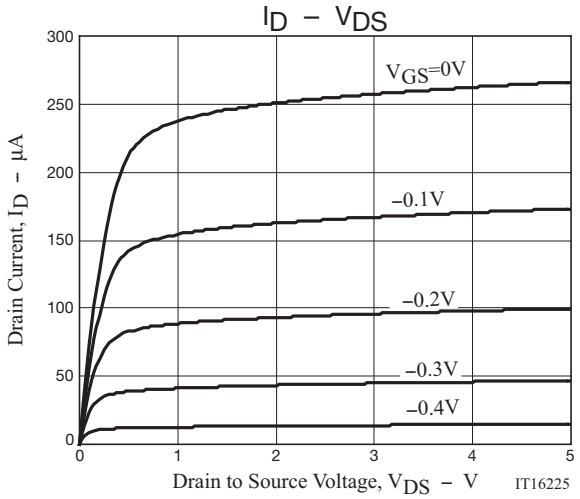
Test Circuit

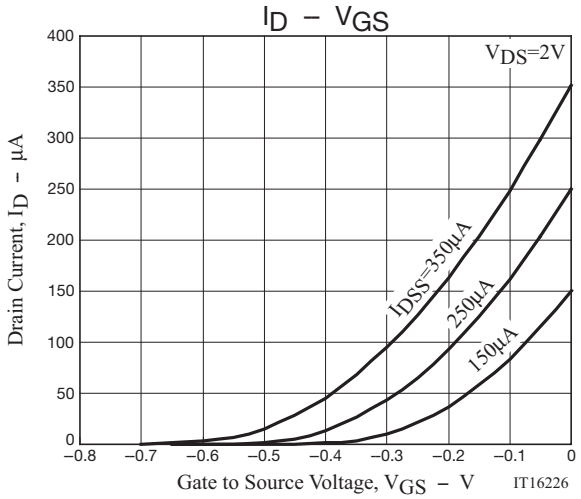
Voltage gain
Frequency Characteristic
Distortion
Reduced Voltage Characteristic

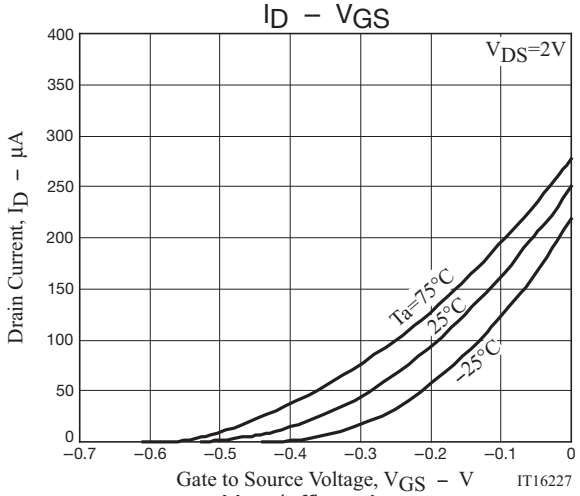


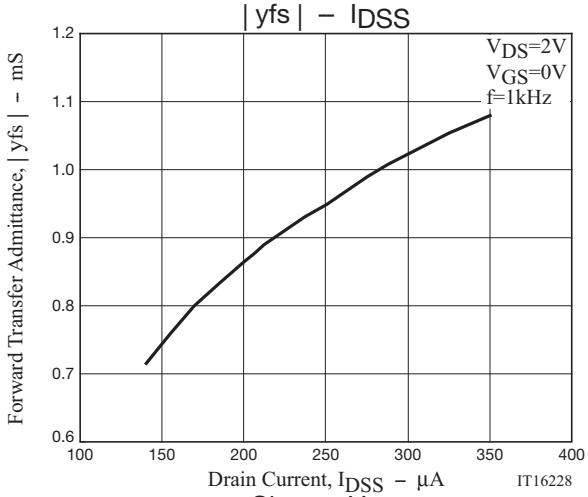
Ordering Information

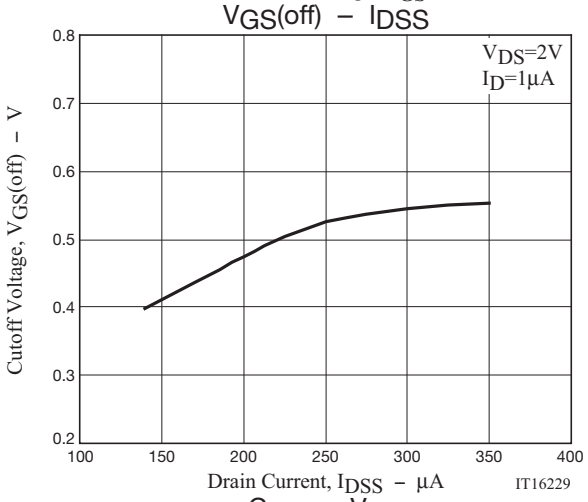
Device	Package	Shipping	memo
TF262TH-4-TL-H	VTFP	8,000pcs./reel	Pb-Free and Halogen Free
TF262TH-5-TL-H			

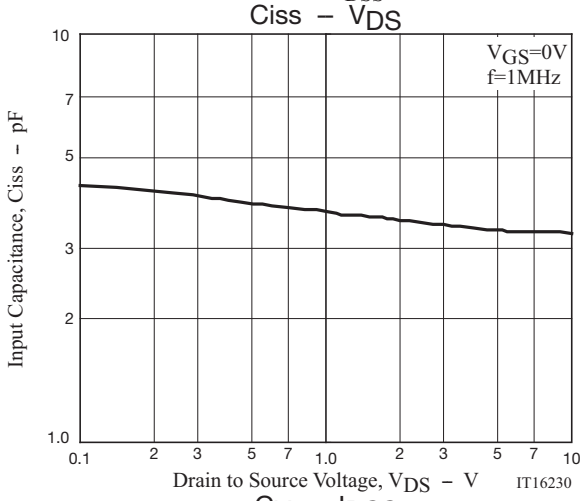


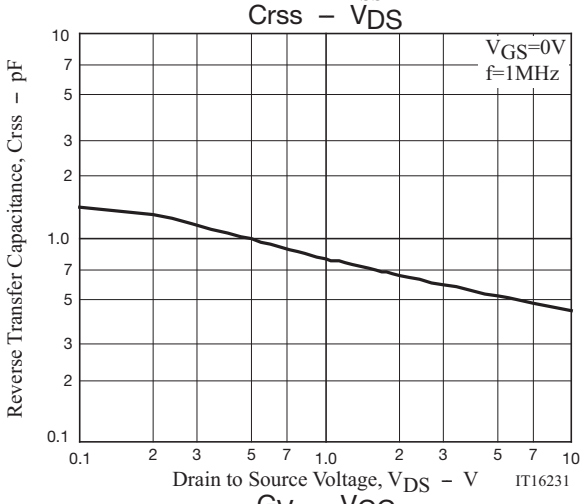


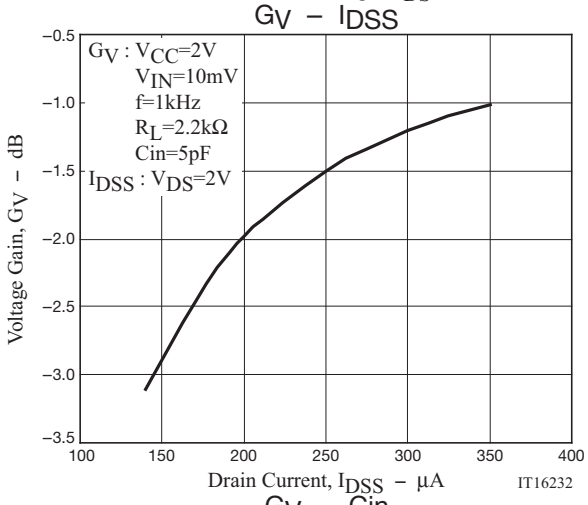

I_D – V_{GS}
V_{DS}=2V
Ta=75°C
25°C
–25°C
Drain Current, I_D – μA
Gate to Source Voltage, V_{GS} – V
IT16227

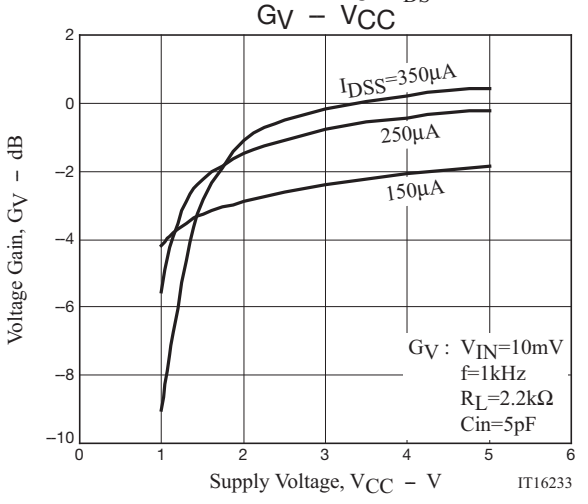

| yfs | – I_{DSS}
V_{DS}=2V
V_{GS}=0V
f=1kHz
Forward Transfer Admittance, | yfs | – mS
Drain Current, I_{DSS} – μA
IT16228

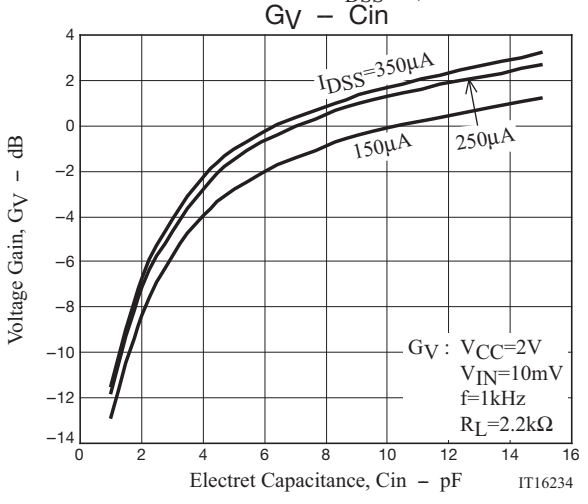

$V_{GS(off)}$ – I_{DSS}
V_{DS}=2V
I_D=1μA
Cutoff Voltage, $V_{GS(off)}$ – V
Drain Current, I_{DSS} – μA
IT16229

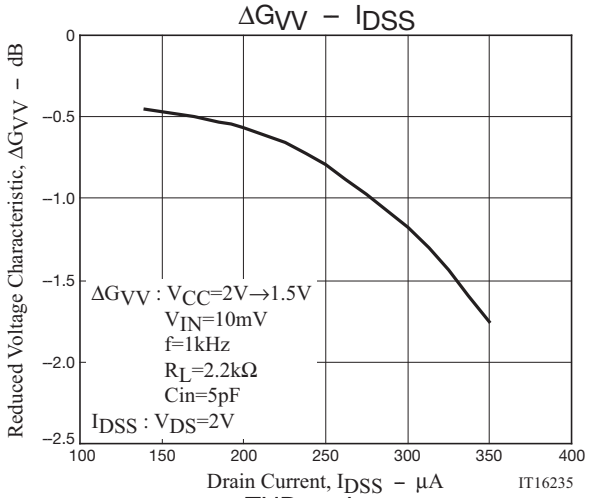

Ciss – V_{DS}
V_{GS}=0V
f=1MHz
Input Capacitance, Ciss – pF
Drain to Source Voltage, V_{DS} – V
IT16230

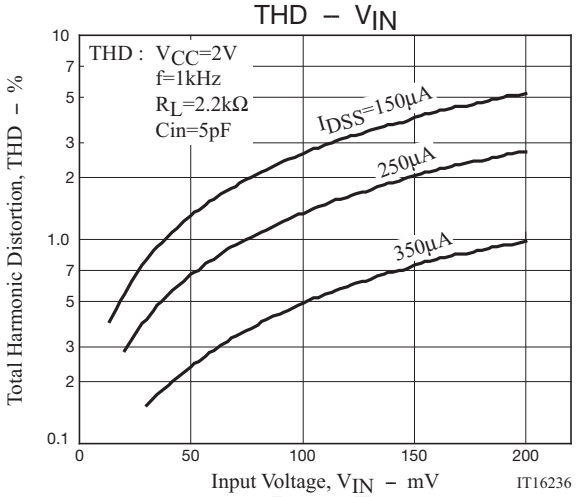

Crss – V_{DS}
V_{GS}=0V
f=1MHz
Reverse Transfer Capacitance, Crss – pF
Drain to Source Voltage, V_{DS} – V
IT16231

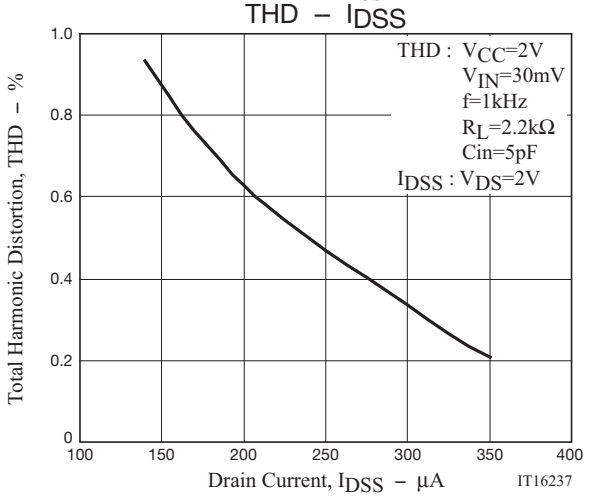

G_V – I_{DSS}
G_V : V_{CC}=2V
V_{IN}=10mV
f=1kHz
R_L=2.2kΩ
Cin=5pF
I_{DSS} : V_{DS}=2V
Voltage Gain, G_V – dB
Drain Current, I_{DSS} – μA
IT16232

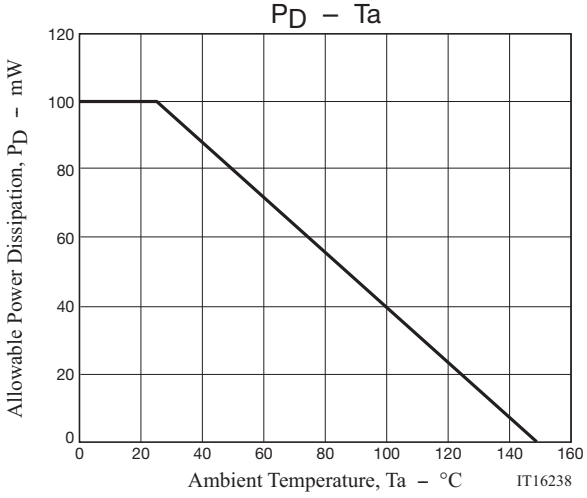

G_V – V_{CC}
I_{DSS}=350μA
250μA
150μA
G_V : V_{IN}=10mV
f=1kHz
R_L=2.2kΩ
Cin=5pF
Voltage Gain, G_V – dB
Supply Voltage, V_{CC} – V
IT16233


G_V – Cin
I_{DSS}=350μA
150μA
250μA
G_V : V_{CC}=2V
V_{IN}=10mV
f=1kHz
R_L=2.2kΩ
Voltage Gain, G_V – dB
Electret Capacitance, Cin – pF
IT16234


ΔGVV – IDSS
Reduced Voltage Characteristic, ΔGVV – dB
0
–0.5
–1.0
–1.5
–2.0
–2.5
ΔGVV : VCC=2V→1.5V
VIN=10mV
f=1kHz
RL=2.2kΩ
Cin=5pF
IDSS : VDS=2V
100
150
200
250
300
350
400
Drain Current, IDSS – μA
IT16235

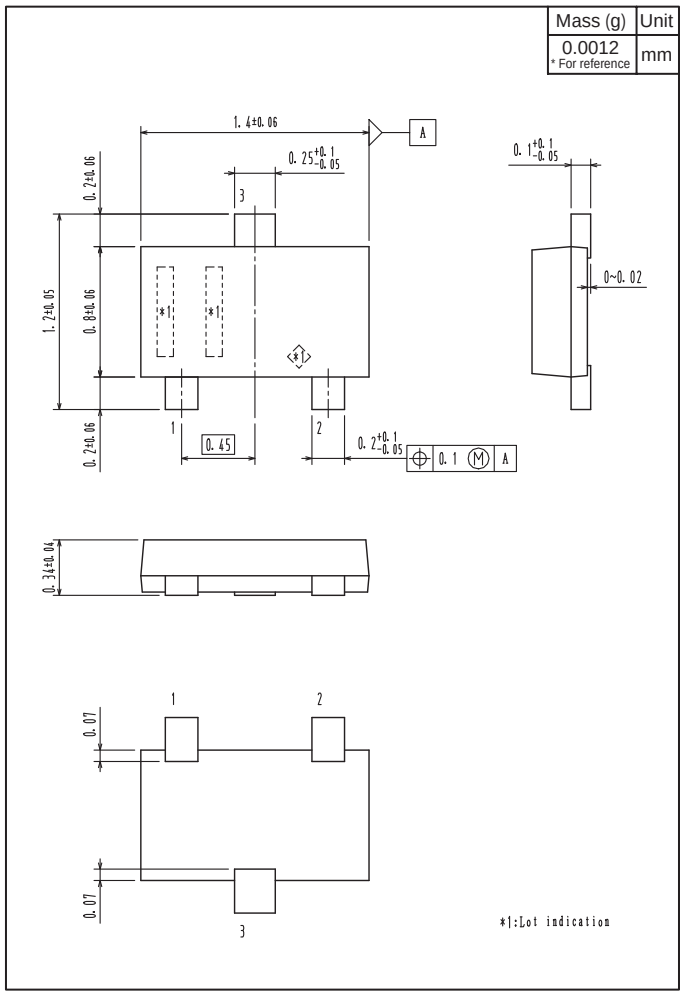

THD – VIN
Total Harmonic Distortion, THD – %
10
7
5
3
2
1.0
7
5
3
2
0.1
THD : VCC=2V
f=1kHz
RL=2.2kΩ
Cin=5pF
IDSS=150μA
250μA
350μA
0
50
100
150
200
Input Voltage, VIN – mV
IT16236


THD – IDSS
Total Harmonic Distortion, THD – %
1.0
0.8
0.6
0.4
0.2
0
THD : VCC=2V
VIN=30mV
f=1kHz
RL=2.2kΩ
Cin=5pF
IDSS : VDS=2V
100
150
200
250
300
350
400
Drain Current, IDSS – μA
IT16237

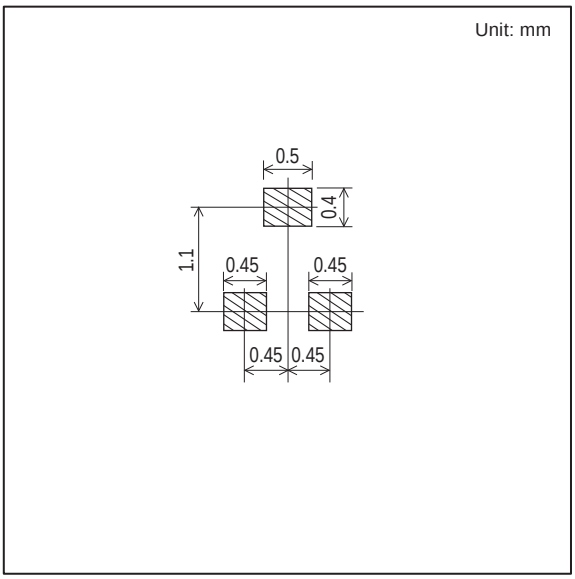

PD – Ta
Allowable Power Dissipation, PD – mW
120
100
80
60
40
20
0
0
20
40
60
80
100
120
140
160
Ambient Temperature, Ta – °C
IT16238

Outline Drawing

TF262TH-4-TL-H, TF262TH-5-TL-H



Land Pattern Example



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