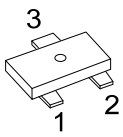
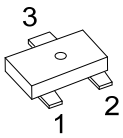
TF112304

JFET

ELECTRET CAPACITOR MICROPHONE APPLICATIONS



TSOT-723



SOT-723

■ DESCRIPTION

The UTC **TF112304** uses advanced trench technology to provide excellent $R_{DS\ (ON)}$, low gate charge and operation with low gate voltages. This device is suitable for use in capacitor microphone applications.

■ FEATURES

* is suitable for electret capacitor microphone
* Very low noise

■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
TF112304L-xx-AH7-R	TF112304G-xx-AH7-R	TSOT-723	D	S	G	Tape Reel
TF112304L-xx-AQ3-R	TF112304G-xx-AQ3-R	SOT-723	D	S	G	Tape Reel

Note: Pin Assignment: D: Drain S: Source G: Gate

TF112304G-xx-AH7-R

(1)Packing Type	(1) R: Tape Reel
(2)Package Type	(2) AH7: TSOT-723, AQ3: SOT-723
(3)Rank	(3) x: refer to CLASSIFICATION OF I_{DSS}
(4)Green Package	(4) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING

TF112304-JB	TF112304-JC
JB	JC

■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATING	UNIT
Gate Drain Voltage	V_{GDO}	-20	V
Gate Current	I_G	10	mA
Drain Current	I_D	10	mA
Power Dissipation	P_D	100	mW
Junction Temperature	T_J	+150	°C
Storage Temperature	T_{STG}	-55 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Gate Drain Breakdown Voltage	BV_{GDO}	I_G=-100μA	-20			V
Gate Source Cut off Voltage	$V_{GS(OFF)}$	V_{DS}=2V, I_D=1μA, I_{DSS}=250μA		-0.6		V
Drain Current	I_{DSS}	V_{DS}=2V, V_{GS}=0V	140		350	μA
Forward Transfer Admittance	$\|y_{fs}\|$	V_{DS}=2V, V_{GS}=0V, I_{DSS}=250μA		1.0		mS
Input Capacitance	C_{ISS}	V_{DS}=2V, V_{GS}=0V, f=1MHz		3.5		pF
Voltage Gain	G_V	V_{DD}=2V, R_L=2.2kΩ, C_g=5pF, f=1KHz V_{IN}=10mV, I_{DSS}=250μA		-1.5		dB
Frequency Characteristic	$\triangle G_{Vf}$	V_{DD}=2V, R_L=2.2kΩ, C_g=5pF, f=1KHz to 110Hz, V_{IN}=10mV			-1.0	dB
Reduced Voltage Characteristic	$\triangle G_{VV}$	V_{DD}=2V to 1.5V, R_L=2.2kΩ, C_g=5pF, f=1KHz, V_{IN}=10mV		1.0	2.0	dB
Output Resistance	Z_O	V_{DS}=2V, f=1MHz, R_L=2.2kΩ			2.2	kΩ
Output Noise Voltage	V_{NO}	V_{DD}=3V, R_L=2.2kΩ, C_g=5pF, A-Curve Filter, R_L=2.2kΩ			-103	dB
Total Harmonic distortion	THD	V_{DD}=2V, R_L=2.2kΩ, C_g=5pF, f=1KHz, V_{IN}=50mV, I_{DSS}=250μA		1.0		%

■ CLASSIFICATION OF I_{DSS}

RANK	B	C
I_{DSS} (μA)	140 ~ 240	210 ~ 350

■ TEST CIRCUIT

Voltage Gain
Frequency Characteristics
Distortion
Reduced Voltage Characteristics
Output Noise Voltage