



**TF212**

**JFET**

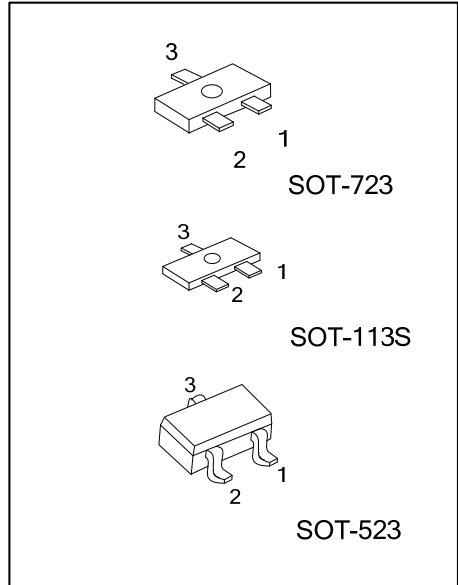
**CAPACITOR MICROPHONE APPLICATIONS**

■ **DESCRIPTION**

The UTC **TF212** 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**

- \* Suited for use in audio, telephone capacitor microphones.
- \* Good voltage characteristic.
- \* Good transient characteristic.



■ **ORDERING INFORMATION**

Ordering Number	Package	Pin Assignment			Packing
		1	2	3	
TF212G-xx-A3C-R	SOT-113S	S	D	G	Tape Reel
TF212G-xx-AN3-R	SOT-523	S	D	G	Tape Reel
TF212G-xx-AQ3-R	SOT-723	S	D	G	Tape Reel

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

<p>TF212G-xx-AC3-R</p>	<p>(1) R: Tape Reel                  (2) A3C: SOT-113S, AN3: SOT-523, AQ3: SOT-723                  (3) x: refer to Classification of <math>I_{DSS}</math>                  (4) G: Halogen Free and Lead Free</p>
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■ **MARKING**

TF212-F4	TF212-F5

■ ABSOLUTE MAXIMUM RATINGS (  $T_A=25^{\circ}\text{C}$ , unless otherwise specified )

PARAMETER	SYMBOL	RATING	UNIT
Gate Drain Voltage	$V_{GDO}$	-20	V
Gate Current	$I_G$	10	mA
Drain Current	$I_D$	1	mA
Power Dissipation	$P_D$	100	mW
Junction Temperature	$T_J$	150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55 ~ +150	$^{\circ}\text{C}$

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.

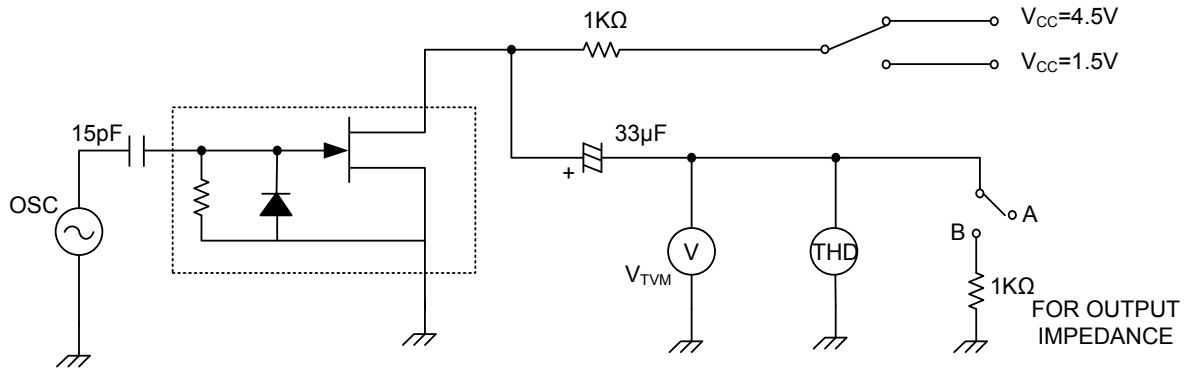
■ ELECTRICAL CHARACTERISTICS (  $T_A=25^{\circ}\text{C}$ , unless otherwise specified )

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Gate Drain Breakdown Voltage	$BV_{GDO}$	$I_G=-100\mu\text{A}$	-20			V
Gate Source Cut off Voltage	$V_{GS(OFF)}$	$V_{DS}=5\text{V}, I_D=1\mu\text{A}$	-0.2	-0.6	-1.2	V
Drain Current	$I_{DSS}$	$V_{DS}=5\text{V}, V_{GS}=0$	140		350	$\mu\text{A}$
Forward Transfer Admittance	$I_{YFSI}$	$V_{DS}=2\text{V}, V_{GS}=0, f=1\text{KHz}$	1	1.2		mS
Input Capacitance	$C_{ISS}$	$V_{DS}=5\text{V}, V_{GS}=0, f=1\text{MHz}$		3.5		pF
Output Capacitance	$C_{RSS}$	$V_{DS}=5\text{V}, V_{GS}=0, f=1\text{MHz}$		0.65		pF
Voltage Gain	$G_V$	$V_{IN}=10\text{mV}, f=1\text{KHz}$		-3		dB
Reduced Voltage Characteristic	$\Delta G_{VV}$	$V_{IN}=10\text{mV}, f=1\text{KHz}, V_{CC}=4.5\text{V} \rightarrow 1.5\text{V}$		-1.2	-3.5	dB
Frequency Characteristic	$\Delta G_{Vf}$	$f=1\text{KHz to } 110\text{Hz}$			-1	dB
Input Resistance	$Z_{IN}$	$f=1\text{KHz}$	25			M $\Omega$
Output Resistance	$Z_O$	$f=1\text{KHz}$			700	$\Omega$
Total Harmonic distortion	THD	$V_{IN}=30\text{mV}, f=1\text{KHz}$		1		%
Output Noise Voltage	$V_{NO}$	$V_{IN}=0$			-110	dB

■ CLASSIFICATION OF  $I_{DSS}$

RANK	F4	F5
RANGE	140-240	210-350

■ TEST CIRCUIT ( $T_A=25^\circ\text{C}$ )



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