



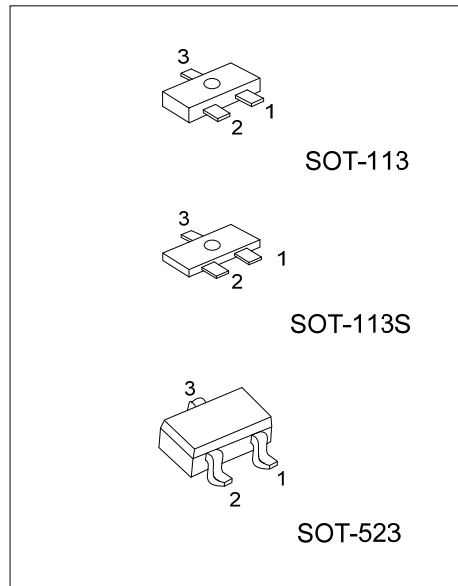
## CAPACITOR MICROPHONE APPLICATIONS

### 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.
- \* Halogen Free



### ORDERING INFORMATION

Ordering Number	Package	Pin Assignment			Packing
		1	2	3	
TF212G-xx-AC3-R	SOT-113	S	D	G	Tape Reel
TF212G-xx-A3C-R	SOT-113S	S	D	G	Tape Reel
TF212G-xx-AN3-R	SOT-523	S	D	G	Tape Reel

<p>TF212G-xx-AC3-R</p> <p>(1) Packing Type (2) Package Type (3) Rank (4) Halogen Free</p>	<p>(1) R: Tape Reel (2) AC3: SOT-113, A3C: SOT-113S, AN3: SOT-523 (3) x: refer to Classification of <math>I_{DSS}</math> (4) G: Halogen Free</p>
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### MARKING

TF212-F4	TF212-F5

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

PARAMETER	SYMBOL	RATING	UNIT
Gate Drain Voltage	$V_{GDO}$	-20	V
Gate Current	$I_G$	10	mA
Drain Current	$I_D$	1	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.

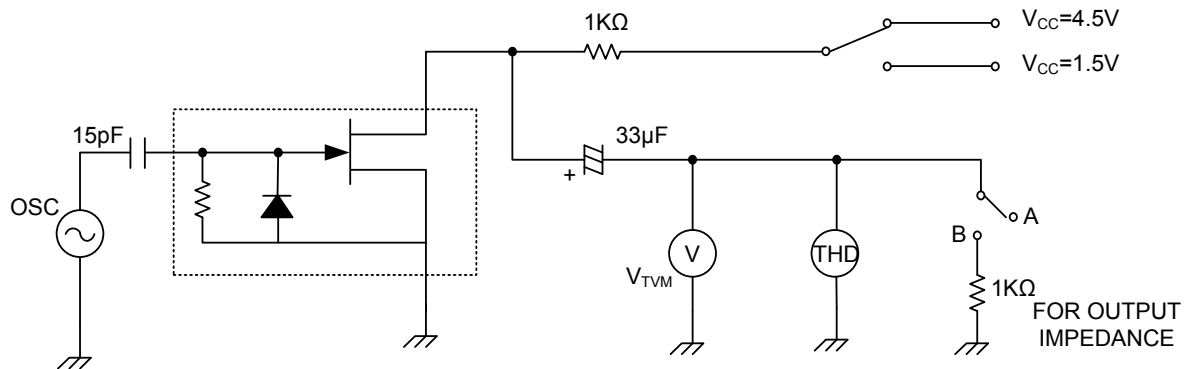
■ ELECTRICAL CHARACTERISTICS ( Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Gate Drain Breakdown Voltage	$BV_{GDO}$	$I_G=-100\mu A$	-20			V
Gate Source Cut off Voltage	$V_{GS(OFF)}$	$V_{DS}=5V, I_D=1\mu A$	-0.2	-0.6	-1.2	V
Drain Current	$I_{DSS}$	$V_{DS}=5V, V_{GS}=0$	140		350	$\mu A$
Forward Transfer Admittance	$Y_{FSI}$	$V_{DS}=2V, V_{GS}=0, f=1KHz$	1	1.2		mS
Input Capacitance	$C_{ISS}$	$V_{DS}=5V, V_{GS}=0, f=1MHz$		3.5		pF
Output Capacitance	$C_{RSS}$	$V_{DS}=5V, V_{GS}=0, f=1MHz$		0.65		pF
Voltage Gain	$G_V$	$V_{IN}=10mV, f=1KHz$		-3		dB
Reduced Voltage Characteristic	$\Delta G_{VV}$	$V_{IN}=10mV, f=1KHz, V_{CC}=4.5V \rightarrow 1.5V$		-1.2	-3.5	dB
Frequency Characteristic	$\Delta G_{Vf}$	$f=1KHz$ to 110Hz			-1	dB
Input Resistance	$Z_{IN}$	$f=1KHz$	25			M $\Omega$
Output Resistance	$Z_O$	$f=1KHz$			700	$\Omega$
Total Harmonic distortion	THD	$V_{IN}=30mV, f=1KHz$		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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