



TF900

Preliminary

N-CHANNEL JFET

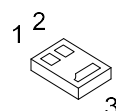
N-CHANNEL JFET CAPACITOR MICROPHONE APPLICATIONS

DESCRIPTION

The UTC **TF900** 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

- * Good voltage characteristic
- * Good transient characteristic



X2DFN1006-3

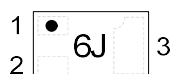
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
TF900L-KAX-R	TF900G-KAX-R	X2DFN1006-3	D	S	G	Tape Reel

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

TF900G-KAX-R (1) Packing Type (2) Package Type (3) Green Package	(1) R: Tape Reel (2) KAX: X2DFN1006-3 (3) G: Halogen Free and Lead Free, L: Lead Free
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MARKING



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

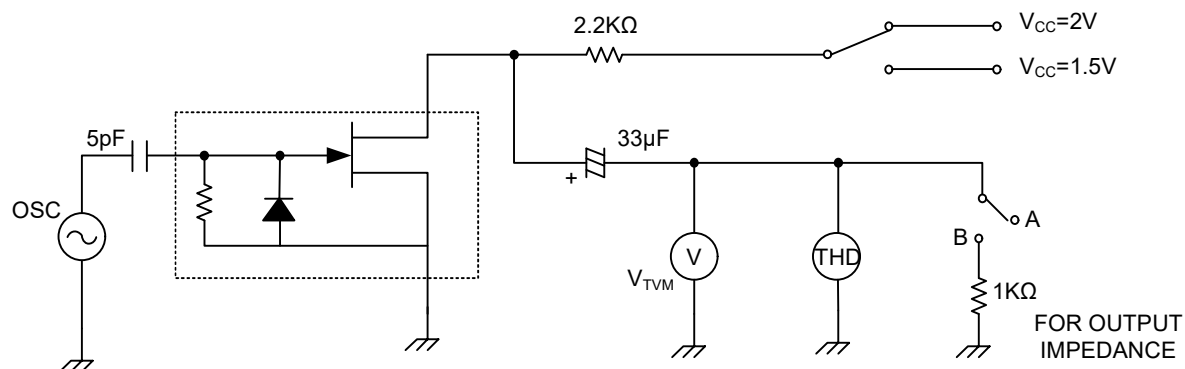
PARAMETER	SYMBOL	RATING	UNIT
Gate Drain Voltage	V_{GDO}	-20	V
Gate Current	I_G	10	mA
Drain Current	I_D	1	mA
Power Dissipation	P_D	80	mW
Junction Temperature	T_J	+150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

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	$V_{GS(OFF)}$	$V_{DS}=2\text{V}$, $I_D=1\mu\text{A}$	-0.2		-0.8	V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=2\text{V}$, $V_{GS}=0\text{V}$	100		400	μA
Forward Transfer Admittance	Y_{fs}	$V_{DS}=2\text{V}$, $V_{GS}=0\text{V}$		1.3		mS
Voltage Gain	G_V	$V_{DD}=2\text{V}$, $R_L=2.2\text{k}\Omega$, $C_g=5\text{pF}$, $f=1\text{kHz}$, $V_{IN}=10\text{mV}$		-8.9		dB
Delta Voltage Gain	ΔG_V	$V_{IN}=10\text{mV}$, $R_L=2.2\text{k}\Omega$, $C_g=5\text{pF}$, $f=1\text{kHz}$, $V_{DD}=4.5\text{V}$ to 1.5V		-1.8		dB
Frequency Characteristic	$\Delta G_V(f)$	$V_{IN}=10\text{mV}$, $R_L=2.2\text{k}\Omega$, $C_g=5\text{pF}$, $V_{DD}=2\text{V}$, $f=40\text{Hz}$ to 1kHz		-0.02		dB
Output Noise Voltage	V_{NO}	$V_{DD}=2\text{V}$, $R_L=2.2\text{k}\Omega$, $C_g=5\text{pF}$		-91		dB
Total Harmonic distortion	THD	$V_{DD}=2\text{V}$, $R_L=2.2\text{k}\Omega$, $C_g=5\text{pF}$, $f=1\text{kHz}$, $V_{IN}=50\text{mV}$		0.18		%

■ TEST CIRCUIT



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