

FJZ594J

Capacitor Microphone Applications

- Especially Suited for use in Audio, Telephone Capacitor Microphones
- Excellent Voltage Characteristic
- Excellent Transient Characteristic



1. Drain 2. Source 3. Gate

Si N-channel Junction FET

Absolute Maximum Ratings T_a=25°C unless otherwise noted

Symbol	Parameter	Ratings	Units
V_{GDO}	Gate-Drain Voltage	-20	V
I _G	Gate Current	10	mA
I _D	Drain Current	1	mA
P _D	Power Dissipation	100	mW
T _J	Junction Temperature	150	°C
T _{STG}	Storage Temperature	-55 ~ 150	°C

Electrical Characteristics T_a =25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Тур.	Max.	Units
BV _{GDO}	Gate-Drain Breakdown Voltage	I _G = -100uA	-20			V
V _{GS} (off)	Gate-Source Cut-off Voltage	V _{DS} =5V, I _D =1μA		-0.6	-1.5	V
I _{DSS}	Drain Current	V _{DS} =5V, V _{GS} =0	150		350	μΑ
ly _{fs} l	Forward Transfer Admittance	V _{DS} =5V, V _{GS} =0, f=1MHz	0.4	1.2		mS
C _{ISS}	Input Capacitance	V _{DS} =5V, V _{GS} =0, f=1MHz 3.		3.5		pF
C _{RSS}	Output Capacitance	V _{DS} =5V, V _{GS} =0, f=1MHz	V _{DS} =5V, V _{GS} =0, f=1MHz			pF
V_{CC} =4.5V, R_L =1k Ω , Cin=15pF, See the Specified Test Circuit						
G _V	Voltage Gain	V _{IN} =10mV, f=1KHz -3		-3		dB
ΔG_{VV}	Reduced Voltage Characteristic	$V_{IN}=10$ mV, f=1KHz -1.2 $V_{CC}=4.5$ V $\rightarrow 1.5$ V		-3.5	dB	
ΔG_{Vf}	Frequency Characteristic	f=1KHz to 110Hz			-1	dB
Z _{IN}	Input Resistance	f=1KHz	25			MΩ
Z _O	Output Resistance	f=1KHz			700	Ω
THD	Total Harmonic Distortion	V _{IN} =10mV, f=1KHz		1		%
V _{NO}	Output Noise Voltage	V _{IN} =0, A curve			-110	dB

Thermal Characteristics $T_C=25$ °C unless otherwise noted

Symbol	Parameter	Max	Units
$R_{\theta jA}$	Thermal Resistance, Junction to Ambient	1250	°C/W

Typical Characteristics

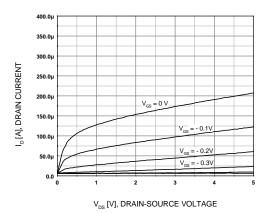


Figure 1. Static Characteristics

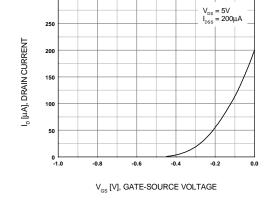


Figure 2. Transfer Characteristic

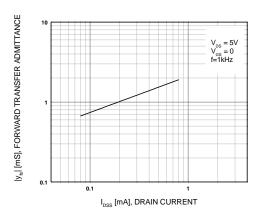


Figure 3. Forward Transfer Admittance

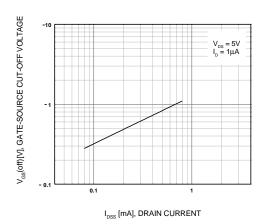


Figure 4. Cut-Off Voltage

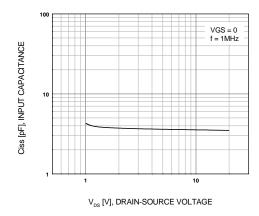


Figure 5. Input Capacitance

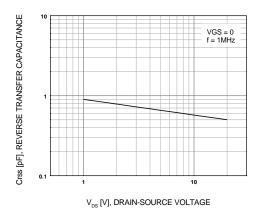


Figure 6. Reverse Transfer Capacitance

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Typical Characteristics (Continued)

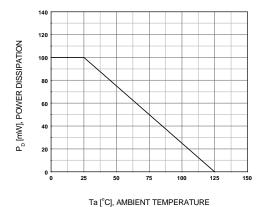


Figure 7. Power Derating

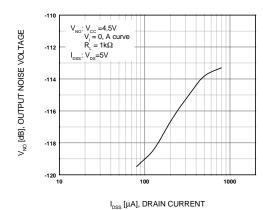
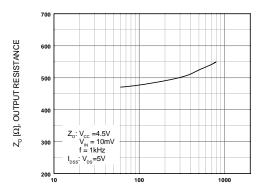


Figure 8. Output Noise Voltage



I_{DSS} [μΑ], DRAIN CURRENT

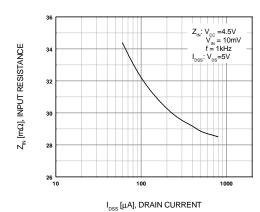


Figure 10. Input Resistance



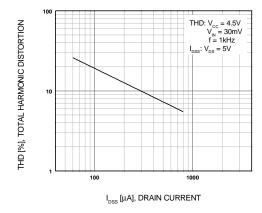


Figure 11. Total Hamonic Distortion vs. I_{DSS}

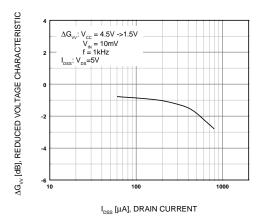
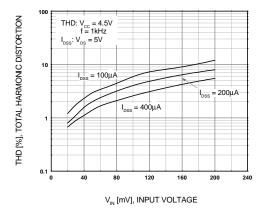


Figure 12. Reduced Voltage Characteristic

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Typical Characteristics (Continued)



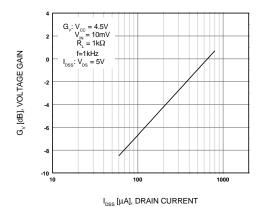
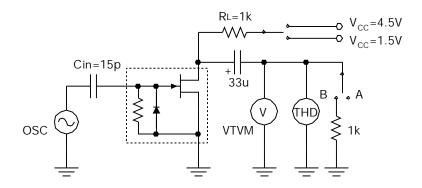


Figure 13. Total Harmonic Distortion vs. V_{IN}

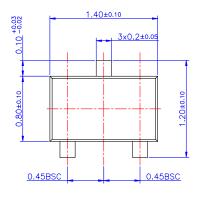
Figure 14. Voltage Gain

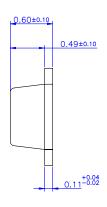


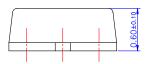
Specified Test Circuit

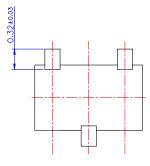
Package Demensions

SOT-623F









Dimensions in Millimeters

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