



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

2SK1578 — N-channel Junction FET Electret Condenser Microphone Applications

Features

- Especially suited for use in electret condenser microphone for audio equipments and telephones.
- Excellent voltage characteristics.
- Excellent transient characteristics.
- Adoption of FBET process.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Gate-to-Drain Voltage	VGDO		-20	V
Gate Current	IG		10	mA
Drain Current	ID		1	mA
Allowable Power Dissipation	PD		100	mW
Junction Temperature	TJ		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gate-to-Drain Breakdown Voltage	V(BR)GDO	IG=-100μA	-20			V
Gate-to-Source Leakage Current	IGSS	VGS=-0.15V, VDS=0V			-1.0	nA
Cutoff Voltage	VGS(off)	VDS=5V, ID=1μA	-0.2	-0.6	-1.5	V
Zero-Gate Voltage Drain Current	IDSS	VDS=5V, VGS=0V	100*		800*	μA

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* : The 2SK1578 is classified by IDSS as follows : (unit : μA)

Rank	A	B	C	D	E
hFE	100 to 170	150 to 240	210 to 350	320 to 480	440 to 800

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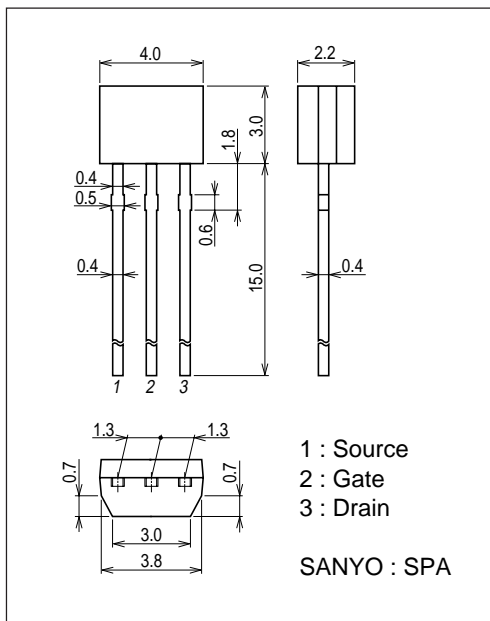
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=5V, V_{GS}=0V, f=1kHz$	0.4	1.2		mS
Input Capacitance	C_{iss}	$V_{DS}=5V, V_{GS}=0V, f=1MHz$		4.1		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=5V, V_{GS}=0V, f=1MHz$		0.88		pF
[$T_a=25^\circ C, V_{CC}=4.5V, R_L=1k\Omega, C_{in}=15pF$, See specified Test Circuit.]						
Voltage Gain	G_V	$V_{IN}=10mV, f=1kHz$		-3.0		dB
Reduced Voltage Characteristic	ΔG_{VV}	$V_{IN}=10mV, f=1kHz, V_{CC}=4.5 \rightarrow 1.5V$		-1.2	-3.5	dB
Frequency Characteristic	ΔG_{Vf}	$f=1kHz$ to 110Hz			-1.0	dB
Input Impedance	Z_{IN}	$f=1kHz$	25			M Ω
Output Impedance	Z_O	$f=1kHz$			700	Ω
Total Harmonic Distortion	THD	$V_{IN}=30mV, f=1kHz$		1.0		%
Output Noise Voltage	V_{NO}	$V_{IN}=0V, A$ curve			-110	dB

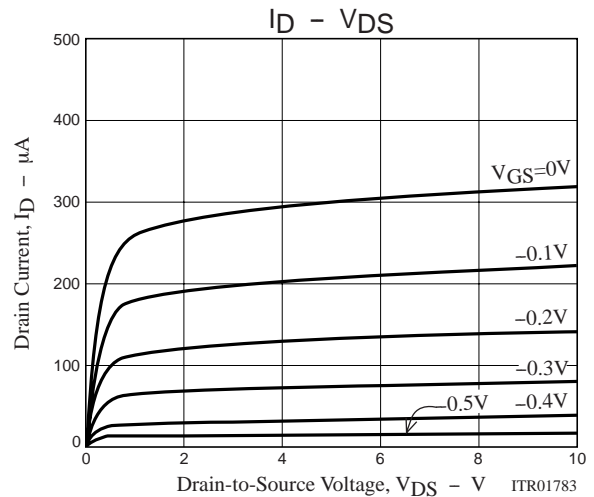
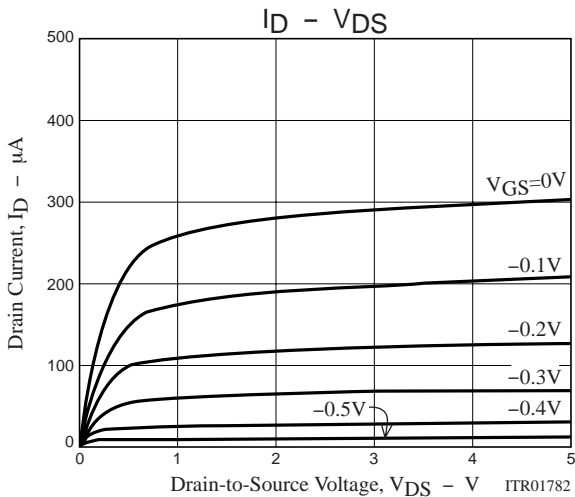
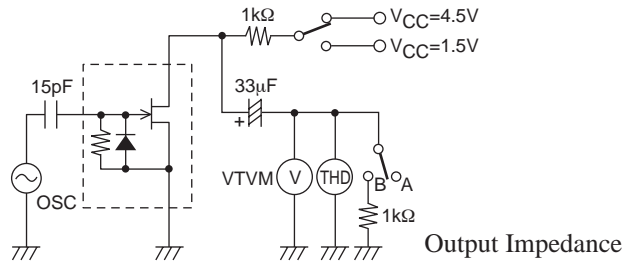
Package Dimensions

unit : mm (typ)
7524-005

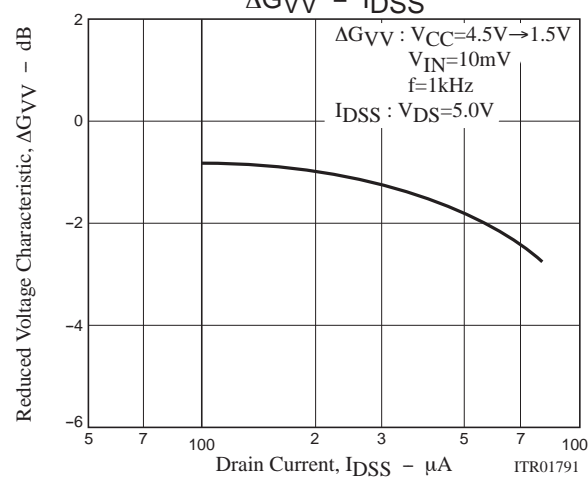
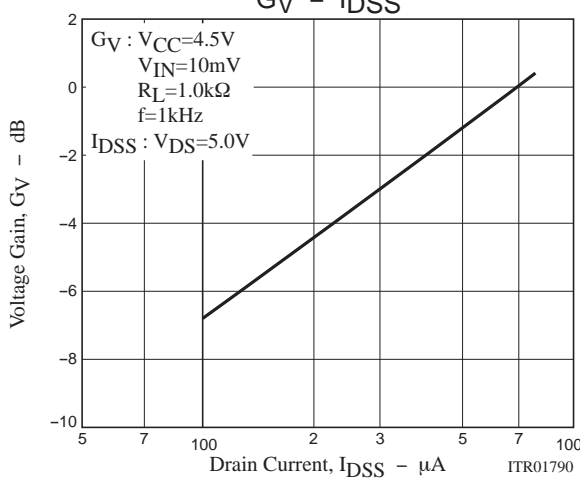
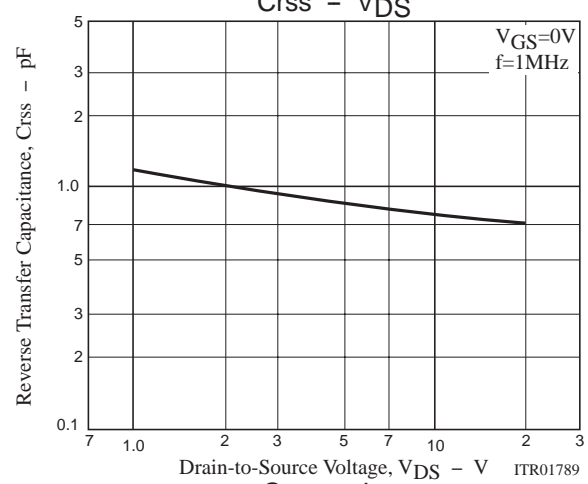
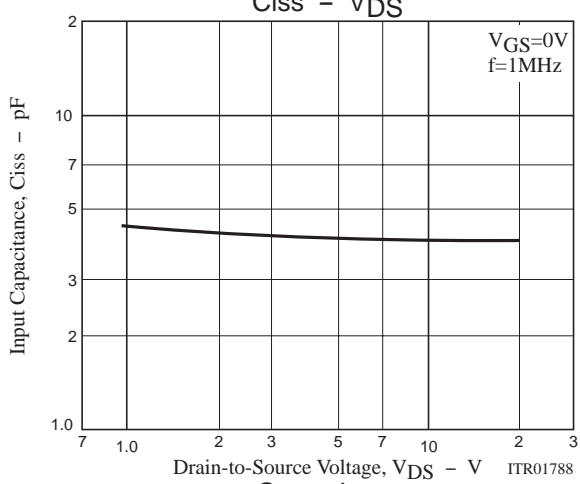
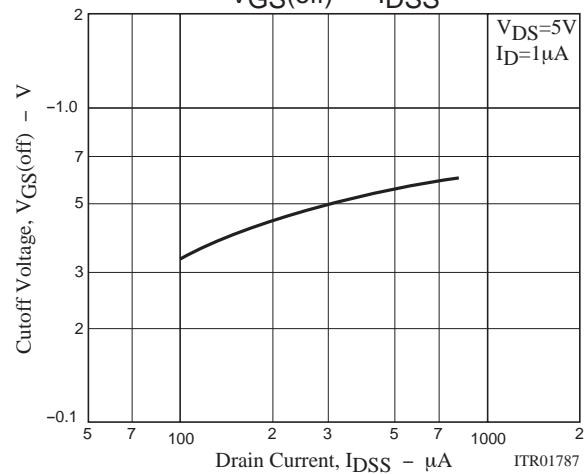
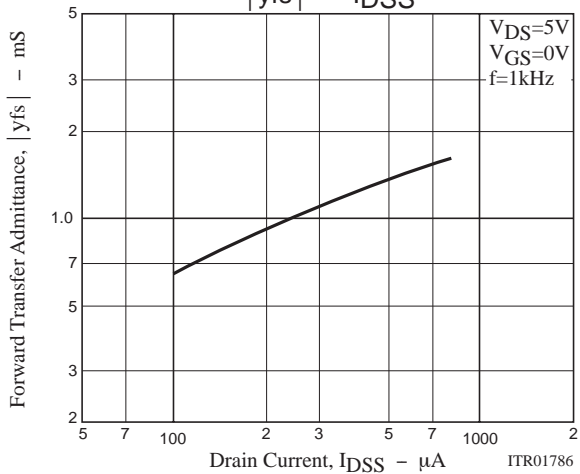
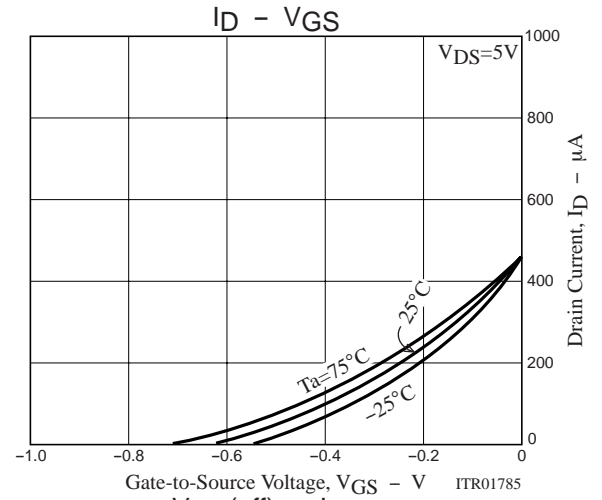
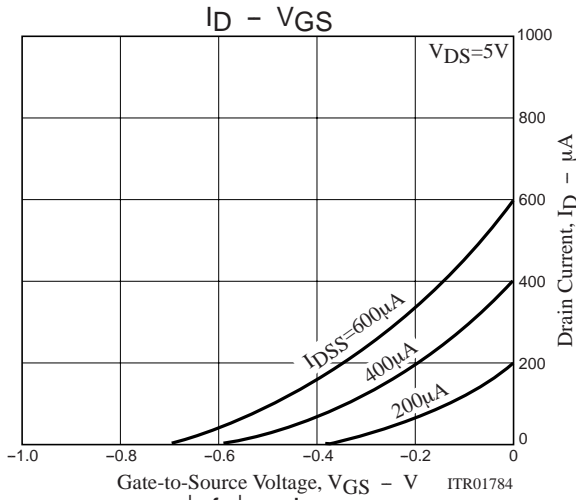


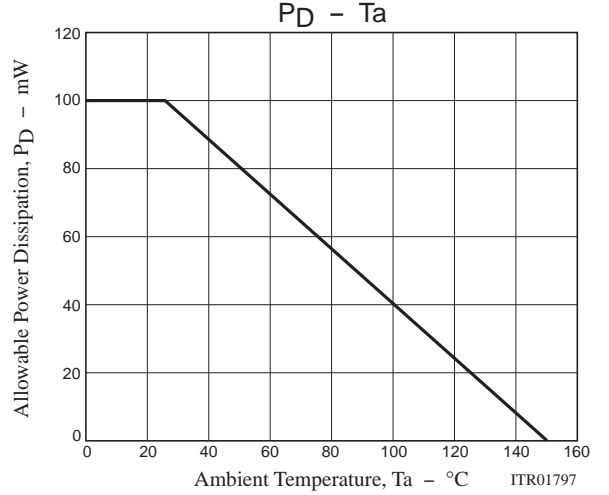
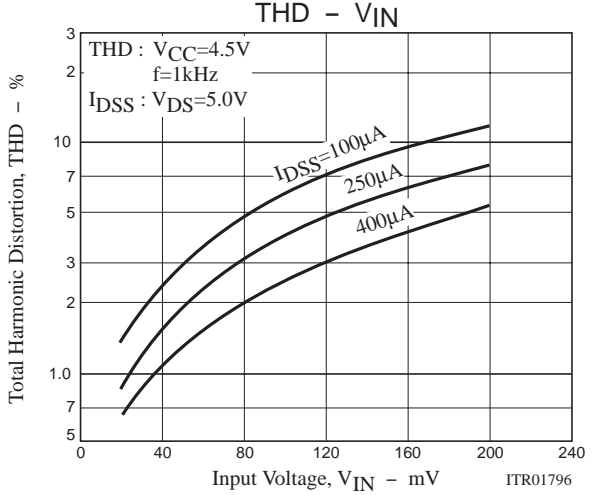
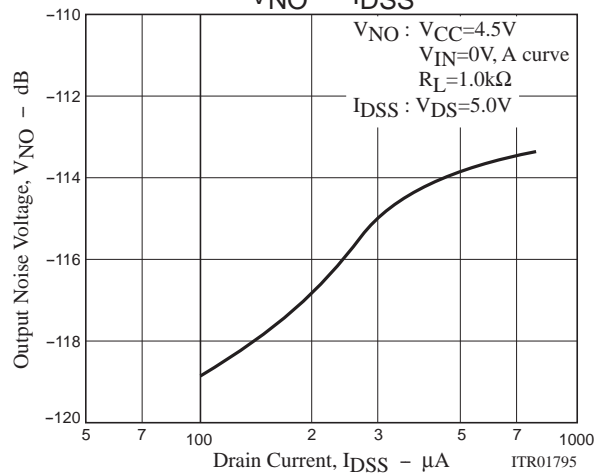
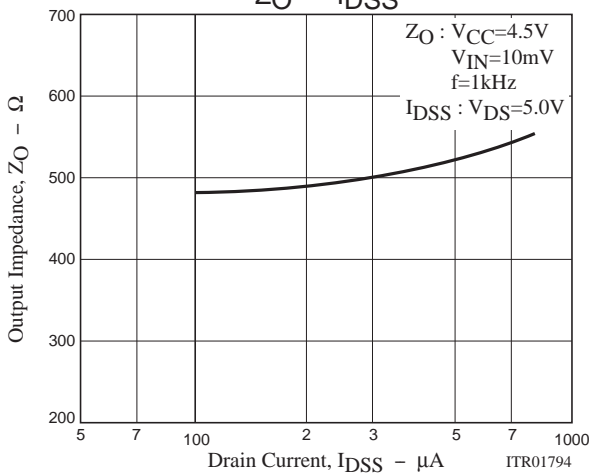
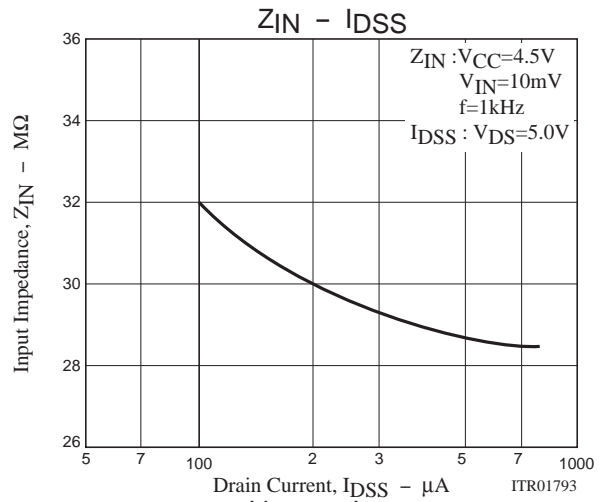
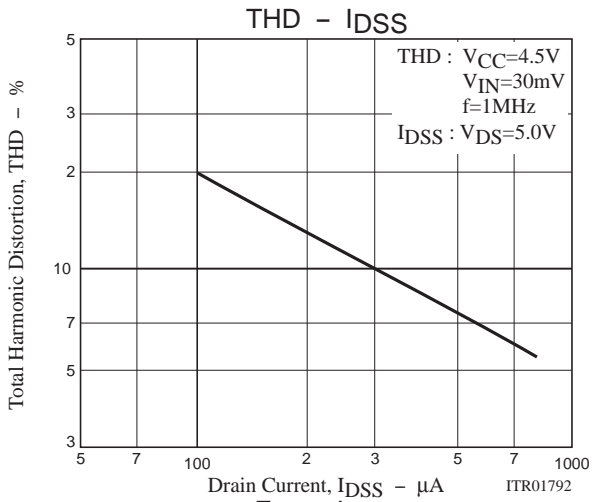
Test Circuit

Voltage Gain
Frequency Characteristic
Distortion
Reduced Voltage Characteristic



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