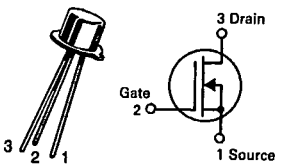
2N3796
2N3797

CASE 22-03, STYLE 2
TO-18 (TO-206AA)



MOSFETs
LOW POWER AUDIO

N-CHANNEL — DEPLETION

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Source Voltage 2N3796 2N3797	V_{DS}	 25 20	Vdc
Gate-Source Voltage	V_{GS}	±10	Vdc
Drain Current	I_D	20	mAdc
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	200 1.14	mW mW/°C
Junction Temperature Range	T_J	+175	°C
Storage Channel Temperature Range	T_{stg}	−65 to +200	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic		Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage (V_{GS} = −4.0 V, I_D = 5.0 μA) (V_{GS} = −7.0 V, I_D = 5.0 μA)	 2N3796 2N3797	$V_{(BR)DSX}$	 25 20	 30 25	 — —	Vdc
Gate Reverse Current(1) (V_{GS} = −10 V, V_{DS} = 0) (V_{GS} = −10 V, V_{DS} = 0, T_A = 150°C)		I_{GSS}	 — —	 — —	 1.0 200	pAdc
Gate Source Cutoff Voltage (I_D = 0.5 μA, V_{DS} = 10 V) (I_D = 2.0 μA, V_{DS} = 10 V)	 2N3796 2N3797	$V_{GS(off)}$	 — —	 −3.0 −5.0	 −4.0 −7.0	Vdc
Drain-Gate Reverse Current(1) (V_{DG} = 10 V, I_S = 0)		I_{DGO}	—	—	1.0	pAdc
ON CHARACTERISTICS						
Zero-Gate-Voltage Drain Current (V_{DS} = 10 V, V_{GS} = 0)	 2N3796 2N3797	I_{DSS}	 0.5 2.0	 1.5 2.9	 3.0 6.0	mAdc
On-State Drain Current (V_{DS} = 10 V, V_{GS} = +3.5 V)	 2N3796 2N3797	$I_{D(on)}$	 7.0 9.0	 8.3 14	 14 18	mAdc
SMALL-SIGNAL CHARACTERISTICS						
Forward Transfer Admittance (V_{DS} = 10 V, V_{GS} = 0, f = 1.0 kHz) (V_{DS} = 10 V, V_{GS} = 0, f = 1.0 MHz)	 2N3796 2N3797 2N3796 2N3797	$\lvert y_{fs}\rvert$	 900 1500 900 1500	 1200 2300 — —	 1800 3000 — —	μmhos
Output Admittance (V_{DS} = 10 V, V_{GS} = 0, f = 1.0 kHz)	 2N3796 2N3797	$\lvert y_{os}\rvert$	 — —	 12 27	 25 60	μmhos
Input Capacitance (V_{DS} = 10 V, V_{GS} = 0, f = 1.0 MHz)	 2N3796 2N3797	C_{iss}	 — —	 5.0 6.0	 7.0 8.0	pF
Reverse Transfer Capacitance (V_{DS} = 10 V, V_{GS} = 0, f = 1.0 MHz)		C_{rss}	—	0.5	0.8	pF
FUNCTIONAL CHARACTERISTICS						
Noise Figure (V_{DS} = 10 V, V_{GS} = 0, f = 1.0 kHz, R_S = 3 megohms)		NF	—	3.8	—	dB

(1) This value of current includes both the FET leakage current as well as the leakage current associated with the test socket and fixture when measured under best attainable conditions.

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TYPICAL DRAIN CHARACTERISTICS

FIGURE 1 — 2N3796

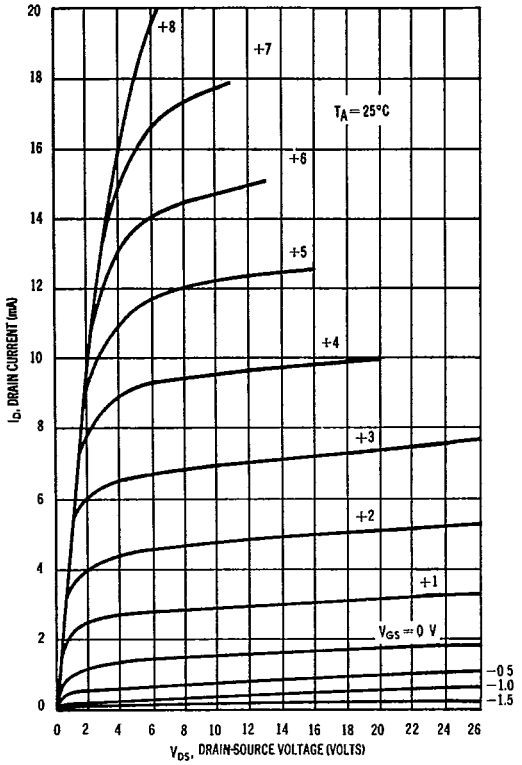
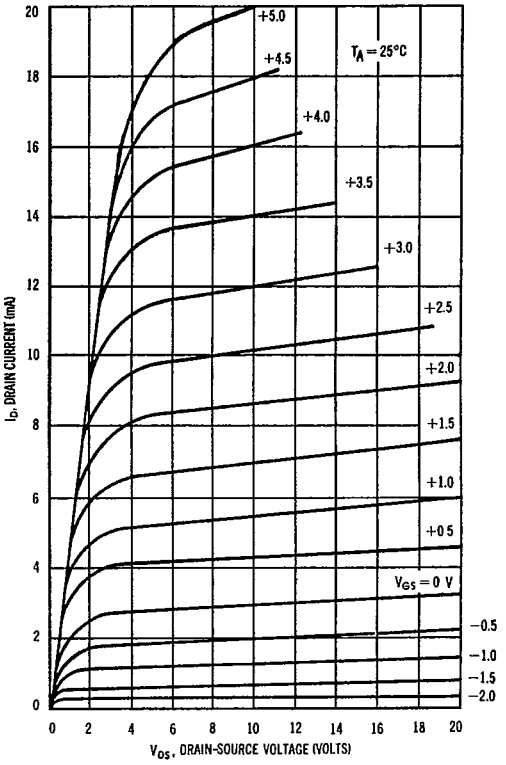


FIGURE 2 — 2N3797



COMMON SOURCE TRANSFER CHARACTERISTICS

FIGURE 3 — 2N3796

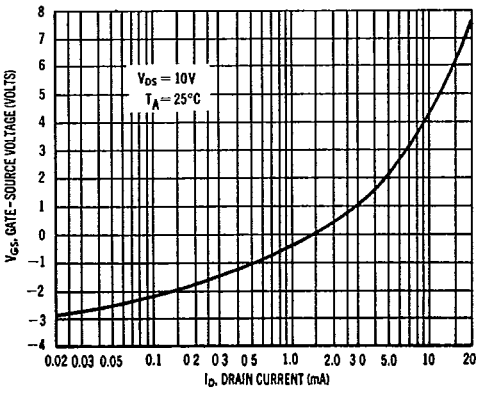


FIGURE 4 — 2N3797

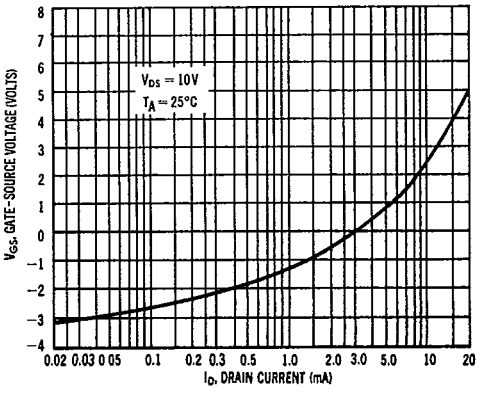


FIGURE 5 — FORWARD TRANSFER ADMITTANCE

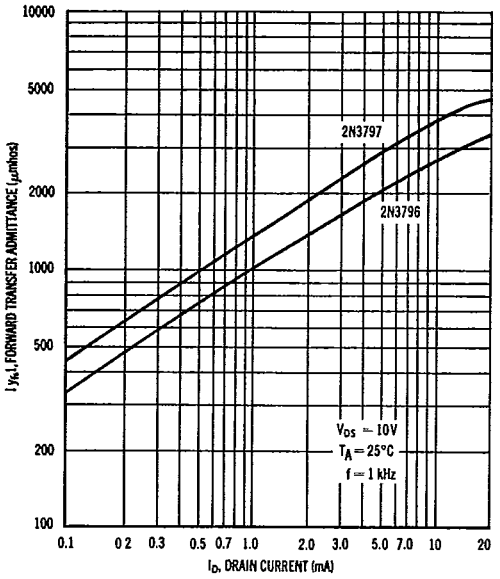


FIGURE 6 — OUTPUT ADMITTANCE

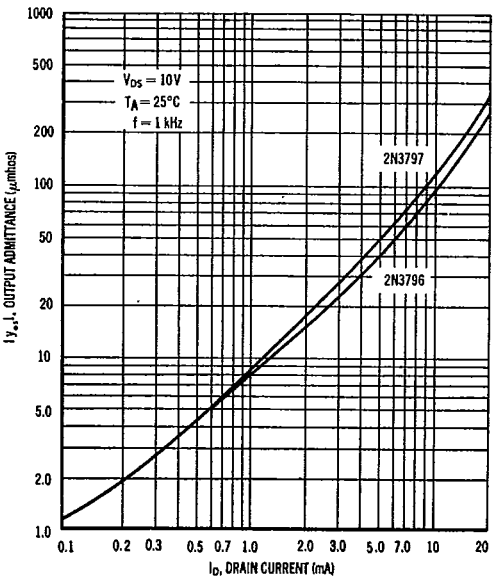


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FIGURE 7 — NOISE FIGURE