


2N3796
2N3797

TO-18



MOSFET
LOW-POWER AUDIO
N-CHANNEL — DEPLETION

MAXIMUM RATINGS

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

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted.)

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

