

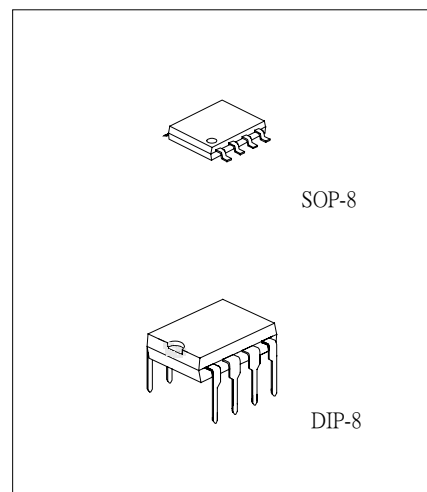
CLASS AB STEREO HEADPHONE DRIVER WITH MUTE

DESCRIPTION

The UTC 3541 is a class AB stereo headphone driver with Mute feature.

FEATURES

- * Built-in Mute Function
- * No Switch ON/OFF pops
- * Short-circuit protection
- * Low Power Consumption
- * Large Output Voltage Swing
- * High Signal-to-Noise Ratio

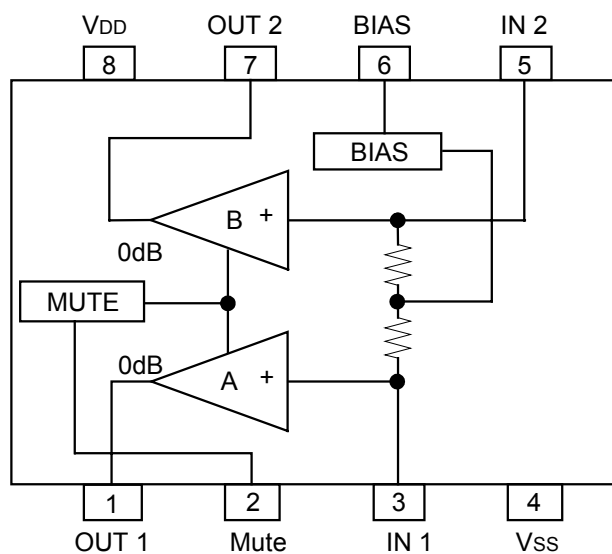


*Pb-free plating product number: 3541L

PIN DESCRIPTION

PIN NO.	PIN NAME	I/O	DESCRIPTION
1	OUT 1	O	Output pin for Channel A
2	Mute	I	Mute control input, high for normal operation
3	IN 1	I	Input pin for Channel A
4	Vss		Power ground
5	IN 2	I	Input pin for Channel B
6	BIAS	I	Right channel bias input pin
7	OUT 2	O	Output pin for Channel B
8	VDD		Power supply input

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{DD}	7	V
Electrostatic Discharge	V_{ESD}	-3000 ~ 3000 * ¹	V
Output Short-circuit Duration ($T_a=25^{\circ}\text{C}$, $P_{tot}=1\text{W}$)	$t_{sc(o)}$	20	S
Operating Ambient Temperature range	T_a	-40 ~ 85	$^{\circ}\text{C}$
Maximum Junction Temperature	T_j	150	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-65 ~ 150	$^{\circ}\text{C}$
Soldering Temperature (10 seconds)	T_{solder}	260	$^{\circ}\text{C}$

*1. Human body model: $C=100\text{pF}$, $R=1500\Omega$, 3 positive pulses plus 3 negative pulses.

THERMAL CHARACTERISTICS

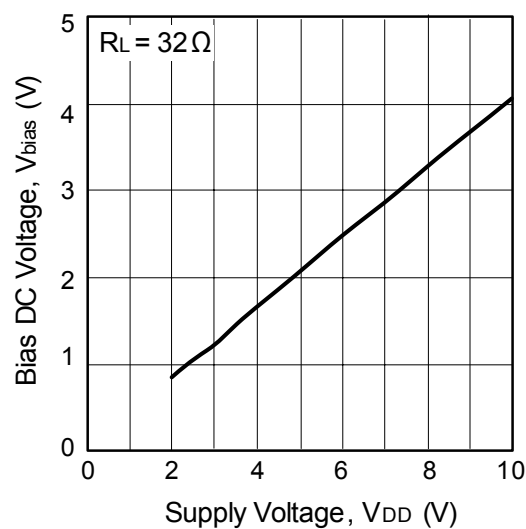
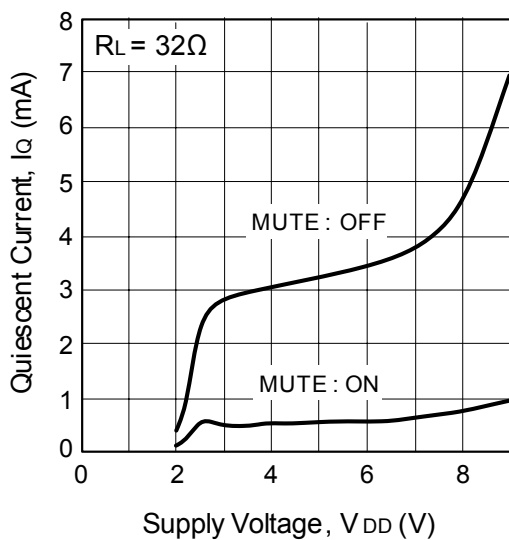
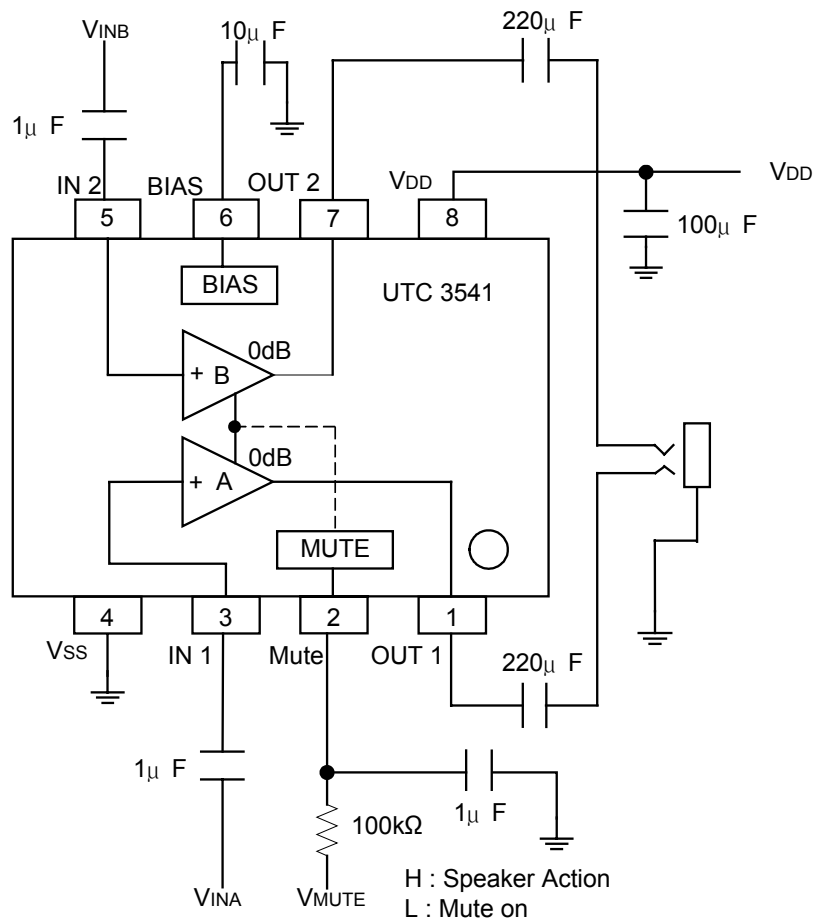
PARAMETER		SYMBOL	RATINGS	UNIT
Thermal Resistance from Junction to Ambient in Free Air	DIP-8	θ_{JA}	109	K/W
	SOP-8		210	
Thermal Resistance from Junction to Case	DIP-8	θ_{JC}	45	K/W
	SOP-8		40	

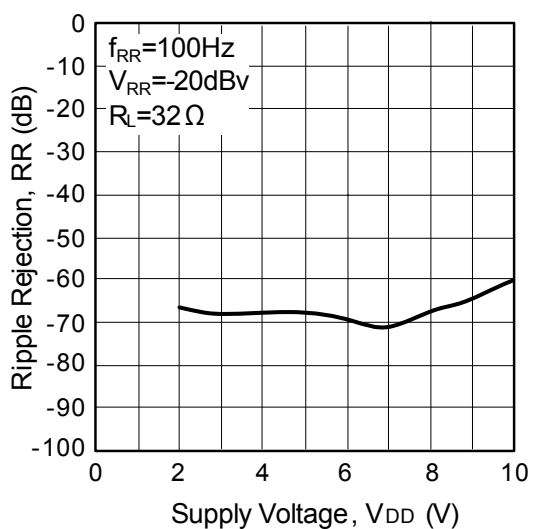
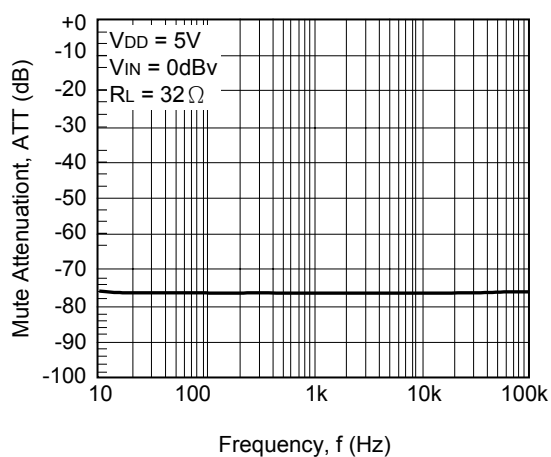
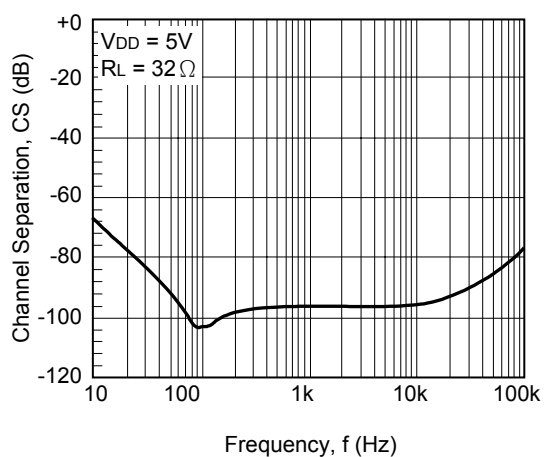
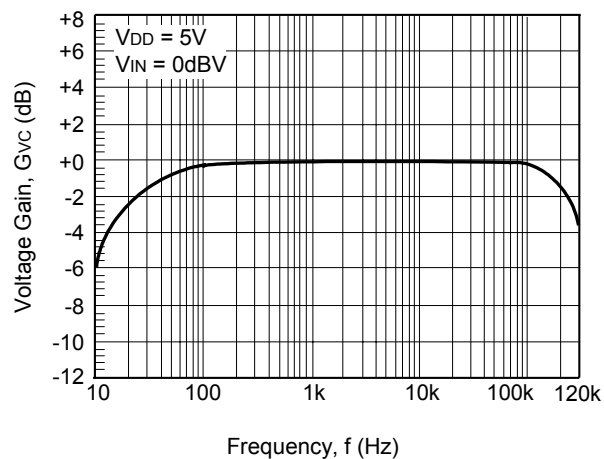
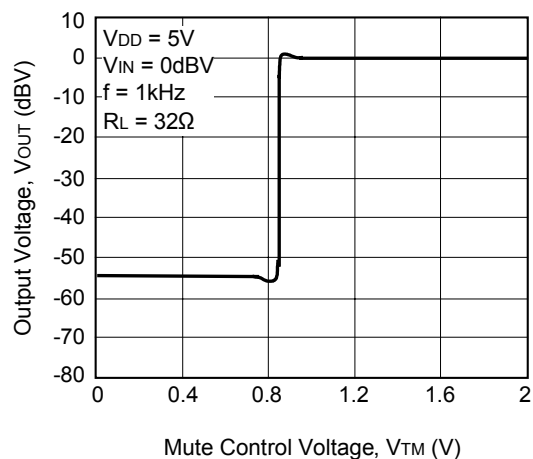
ELECTRICAL CHARACTERISTICS

($V_{IN}=0\text{dBV}$, $V_{CC}=5\text{V}$, $T_a=25^{\circ}\text{C}$, $f=1\text{kHz}$, $R_L=32\Omega$, unless otherwise noted.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V_{DD}		3.0	5.0	6.0	V
Mute Terminal Voltage	V_{TM}		0.3	0.7	1.6	V
Quiescent Current	I_Q	$V_{IN} = 0\text{Vrms}$		3.5	5	mA
Mute Current	I_{mute}			200		μA
Voltage Gain	G_{VCL}	$V_{IN} = 1\text{Vrms}$, $f=1\text{kHz}$, $R_L=32\Omega$	-2	0	2	dB
Differential Channel Voltage Gain	ΔG_{VCL}		-0.5	0	0.5	dB
Total Harmonic Channel Distortion Factor	THD	$BW < 120\text{ kHz}$		0.03	0.1	%
Rated Output Power 1	P_{O1}	$R_L=32\Omega$, $\text{THD+N} = 0.1\%$, $BW < 120\text{ kHz}$	50	55		mW
Rated Output Power 2	P_{O2}	$R_L=16\Omega$, $\text{THD+N} = 0.1\%$, $BW < 120\text{ kHz}$	105	110		mW
Output Noise Voltage	V_{NO}	$BW = 20 \sim 20\text{ kHz}$, $V_{IN} = 0\text{Vrms}$		-93	-85	dBv
Channel Separation	CS	$f = 1\text{ kHz}$	-90	-92.5		dB
Mute Attenuation	ATT	$V_{IN} = 1\text{Vrms}$, $f = 1\text{ kHz}$, $\text{Mute}=\text{L}$	65	70		dB
Ripple Rejection	RR	$F_{RR} = 100\text{Hz}$, $V_{RR} = -20\text{dBV}$	50	60		dB

TEST AND APPLICATION CIRCUIT





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