



ULV3542

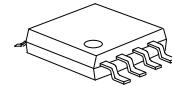
LINEAR INTEGRATED CIRCUIT

160V/ μ s, RAIL-TO-RAIL I/O, CMOS OPERATIONAL AMPLIFIER

■ DESCRIPTION

The UTC **ULV3542** is high-speed, voltage-feedback CMOS operational amplifiers. It is optimized for operation on single or dual supplies as low as 2.7V (± 1.35 V) and up to 5.5V (± 2.75 V). Input common mode range extends beyond the supplies. Quiescent current is only 4.5mA/Amplifier.

The UTC **ULV3542** is suitable for applications requiring high continuous output current. It is designed for video and other applications which require wide bandwidth. It is unity-gain stable and can provide large output current.



MSOP-8

■ FEATURES

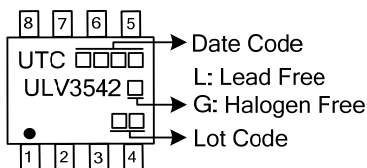
- * Supply Voltage: 2.7V ~ 5.5V
- * Supply Current/Amplifier: 7 mA (Max.)
- * Input Offset Voltage: 10mV (Max.)
- * Rail-to-Rail Input and Output
- * Slew Rate: 160V/ μ s (Typ.)
- * Thermal Shutdown

■ ORDERING INFORMATION

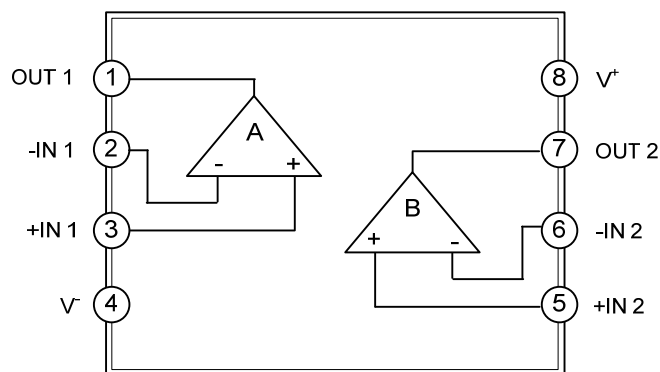
Ordering Number		Package	Packing
Lead Free	Halogen Free		
ULV3542L-SM1-R	ULV3542G-SM1-R	MSOP-8	Tape Reel

<p>ULV3542G-SM1-R</p> <ul style="list-style-type: none">(1) Packing Type(2) Package Type(3) Green Package	<p>(1) R: Tape Reel (2) SM1: MSOP-8 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ MARKING



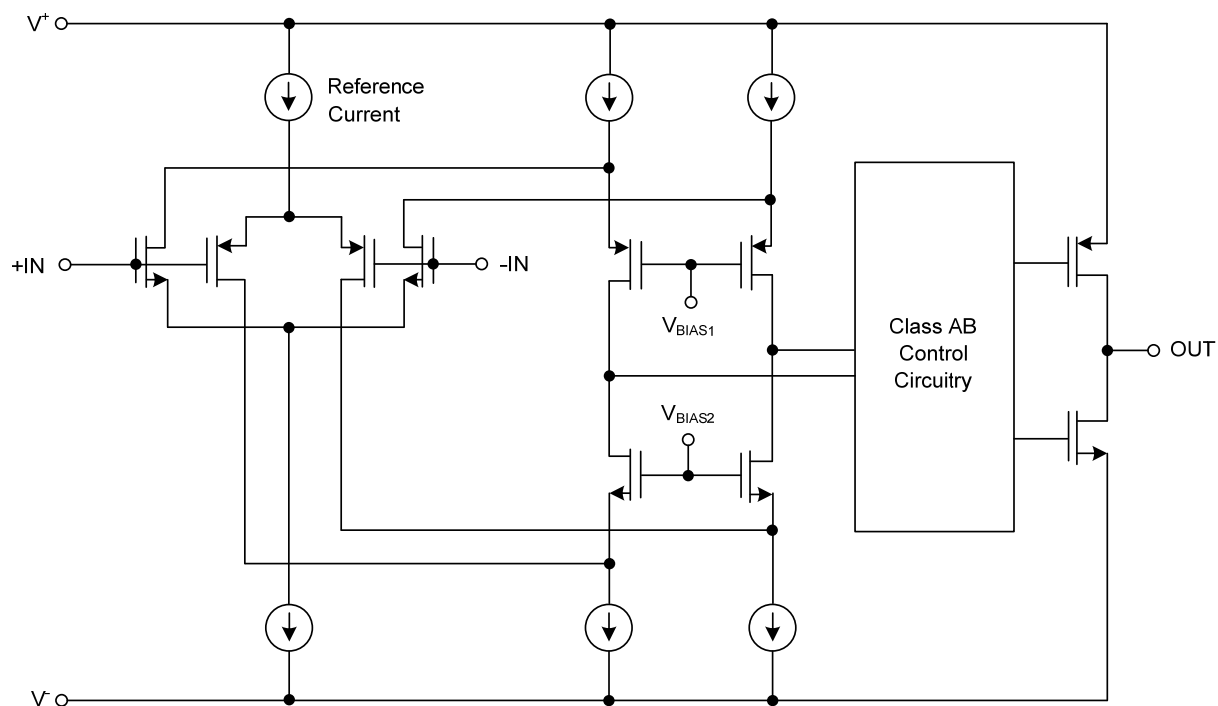
PIN CONFIGURATION



PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	OUT 1	Output of 1 AMP
2	-IN 1	Inverting input of 1 AMP
3	+IN 1	Non-inverting input of 1 AMP
4	V ⁻	Negative power supply
5	+IN 2	Non-inverting input of 2 AMP
6	-IN 2	Inverting input of 2 AMP
7	OUT 2	Output of 2 AMP
8	V ⁺	Positive power supply

BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$(V^+ - V^-)$	6	V
Input Common Mode Voltage Range	V_{CM}	$V^- - 0.1 \sim V^+ + 0.1$	V
Junction Temperature (Note 3)	T_J	+150	°C
Storage Temperature	T_{STG}	-65 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ RECOMMENDED OPERATING CONDITIONS

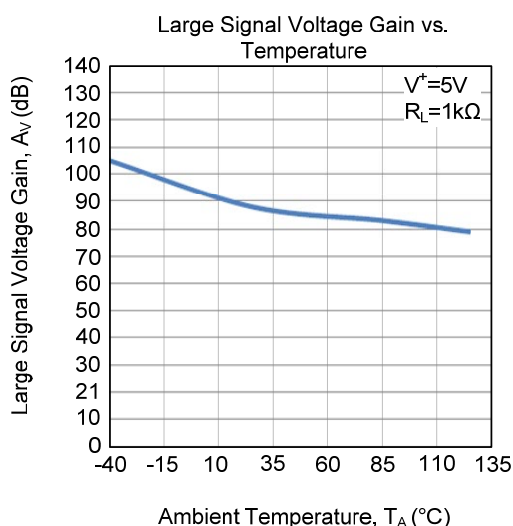
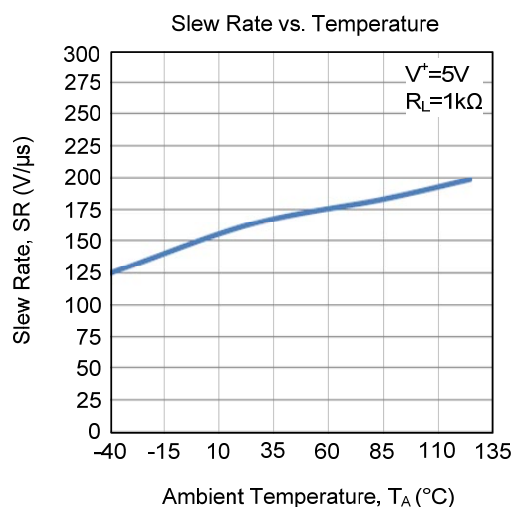
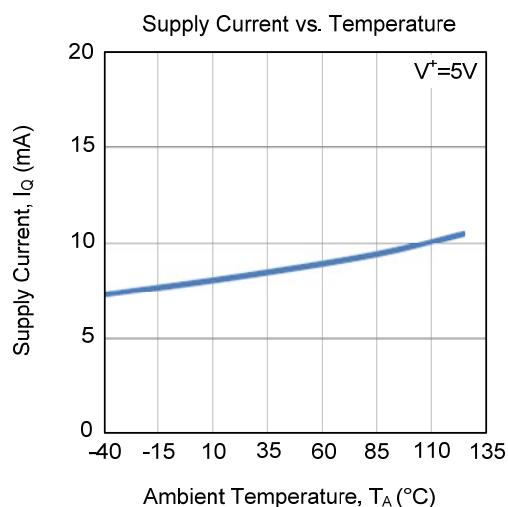
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage Range	$V^+ - V^-$	2.7 ~ 5.5	V
Operating Temperature Range	T_{OPR}	-40 ~ +125	°C

■ ELECTRICAL CHARACTERISTICS

($T_A = 25^\circ\text{C}$, $V^+ = 2.7 \sim 5.5\text{V}$, $V^- = 0\text{V}$, $V_{IC} = V^+/2\text{V}$, $V_O = V^+/2\text{V}$ and $R_L = 1\text{k}\Omega$ connected to GND.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Current/Amplifier	I_Q			4.3	7	mA
Power Supply Rejection Ratio	PSRR	$2.7\text{V} \leq V^+ \leq 5.5\text{V}$, $V_{IC} = 0\text{V}$	70	100		dB
Input Offset Voltage	V_{OS}			-2	± 10	mV
Input Bias Current	I_B			5		pA
Input Offset Current	I_{OS}			0.8		pA
Common-Mode Voltage Range	V_{CM}		$V^- - 0.1$		$V^+ + 0.1$	V
Common Mode Rejection Ratio	CMRR	$V^- - 0.1 \leq V_{IC} \leq V^+ + 0.1$	60	90		dB
Large Signal Voltage Gain	A_V	$R_L = 1\text{k}\Omega$, $V_O = V^+ + 0.3\text{V} \sim V^+ - 0.3\text{V}$	70	85		dB
Output Voltage	V_O	$R_L = 1\text{k}\Omega$	V_{OH}	$V^+ - 0.09$	$V^+ - 0.07$	V
			V_{OL}	0.005	0.06	V
Short-Circuit Current	I_{SC}	Sourcing, $V^+ = 3\text{V}$, $V_O = 0\text{V}$		90		mA
		Sinking, $V^+ = 3\text{V}$, $V_O = V^+$		90		mA
Slew Rate	SR	$V^+ = 5\text{V}$, $V_O = 2V_{PP}$		160		V/ μs
Gain-Bandwidth Product	GBW	$G = +10$, $V_O = 100\text{mV}_{PP}$		100		MHz
Input-Referred Voltage Noise	e_n	$f = 1\text{MHz}$		10		nV/ $\sqrt{\text{Hz}}$
Input-Referred Current Noise	i_n	$f = 1\text{MHz}$		20		fA/ $\sqrt{\text{Hz}}$
Thermal Shutdown				150		°C

■ TYPICAL CHARACTERISTICS



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.