



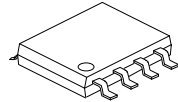
UNE5532

LINEAR INTEGRATED CIRCUIT

DUAL LOW-NOISE OPERATIONAL AMPLIFIER

■ DESCRIPTION

The UTC **UNE5532** is high-performance operational amplifiers with excellent DC/AC and very low noise characteristics. It features high output-drive capability (with internal short-circuit protection), high unity-gain and maximum-output-swing bandwidths, low distortion, high slew rate, unity-gain operation, differential mode input clamp diodes. The device has specified maximum limits for equivalent input noise voltage.



SOP-8

■ FEATURES

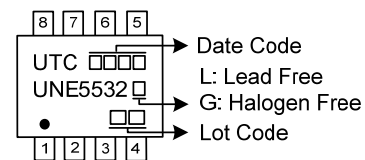
- * Supply Voltage: $\pm 5 \sim \pm 15V$
- * Supply Current/Amplifier: 4mA (Max.)
- * Input Offset Voltage: 4mV (Max.)
- * Slew Rate: 8.5V/ μs (Typ.)

■ ORDERING INFORMATION

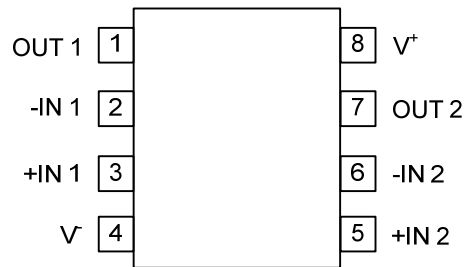
Ordering Number		Package	Packing
Lead Free	Halogen Free		
UNE5532L-S08-R	UNE5532G-S08-R	SOP-8	Tape Reel

<p>UNE5532G-S08-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel (2) S08: SOP-8 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ MARKING



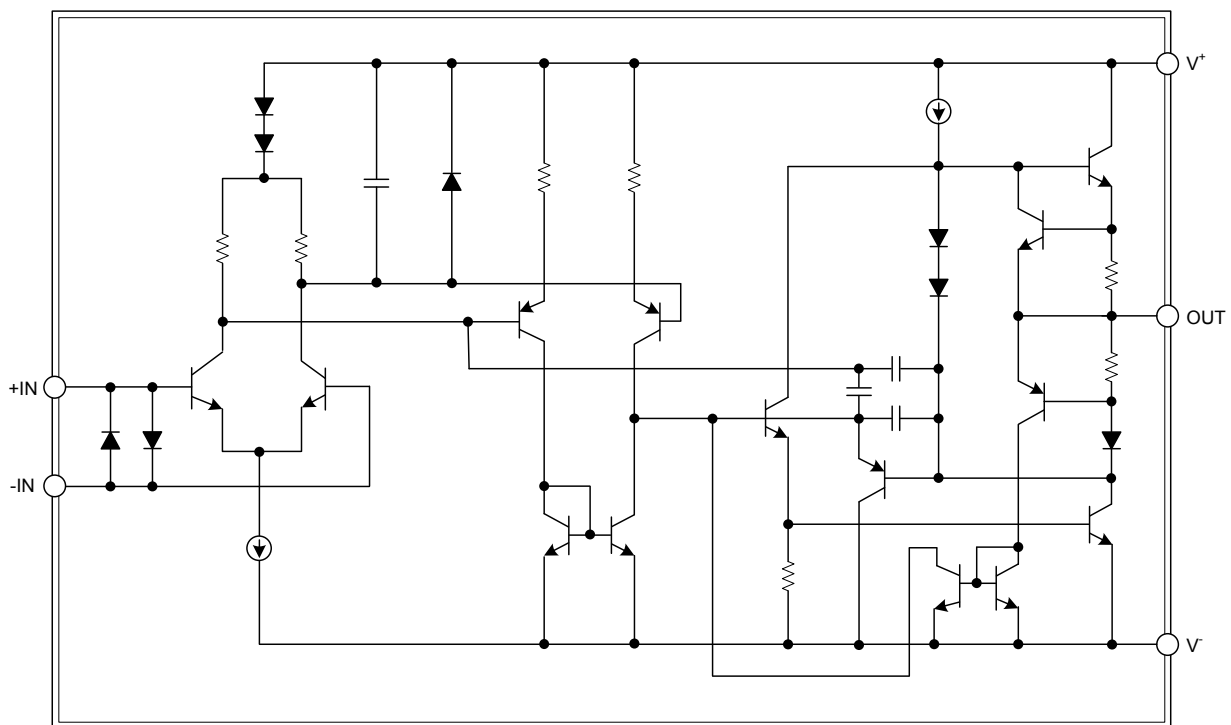
■ PIN CONFIGURATION



■ 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

over operating free-air temperature range (unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage (Note 1)	V ⁺	0 ~ 22	V
	V ⁻	-22 ~ 0	V
Differential Input Voltage (Note 2, 3)	V _{ID}	Supply Voltage	V
Input Current (Note 4)		-10~10	mA
Junction Temperature	T _J	+150	°C
Storage Temperature	T _{STG}	-65 ~ +150	°C

Notes: 1. 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.

2. All voltage values, except differential voltages, are with respect to the midpoint between V⁺ and V⁻.

3. The magnitude of the input voltage must never exceed the magnitude of the supply voltage.

4. Excessive input current will flow if a differential input voltage in excess of approximately 0.6V is applied between the inputs, unless some limiting resistance is used.

■ RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Supply Voltage	V ⁺	5		15	V
Supply Voltage	V ⁻	-5		-15	V
Operating Free-Air Temperature	T _{OPR}	-40		+125	°C

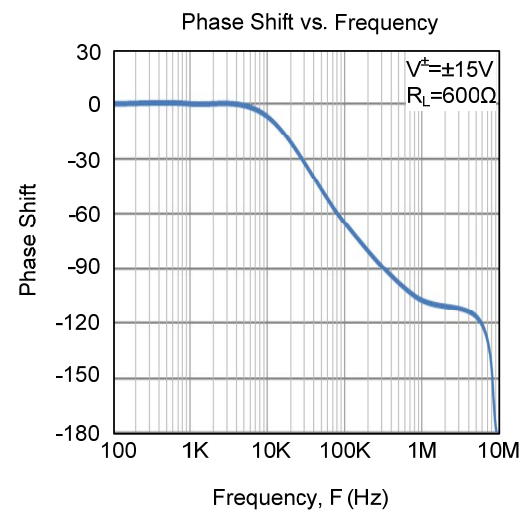
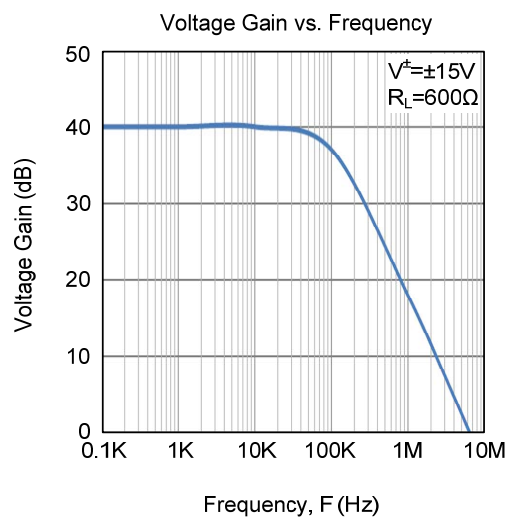
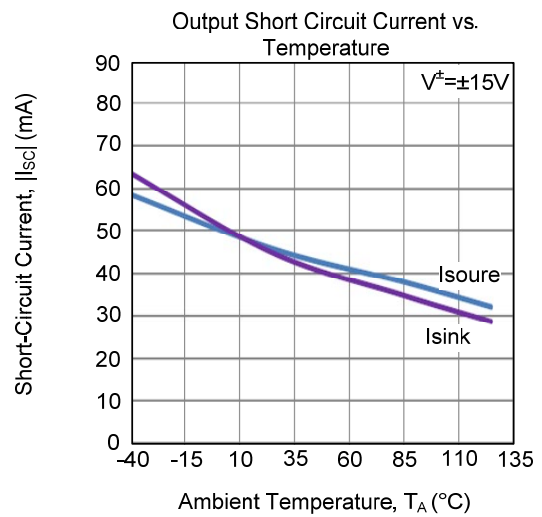
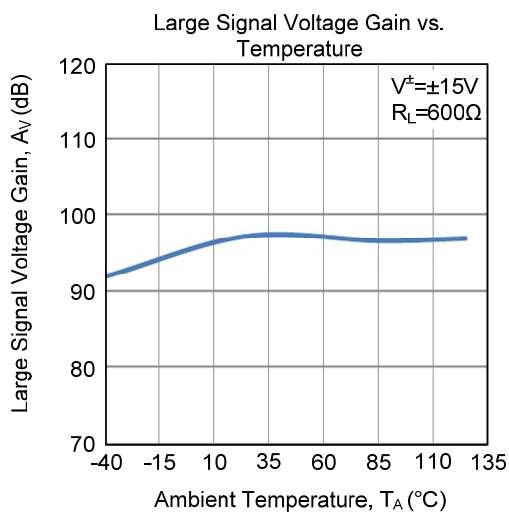
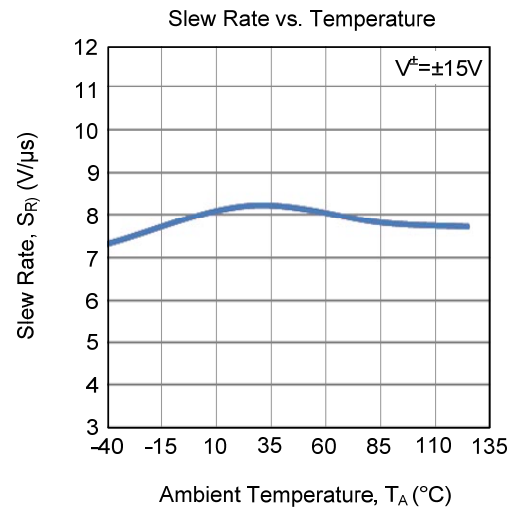
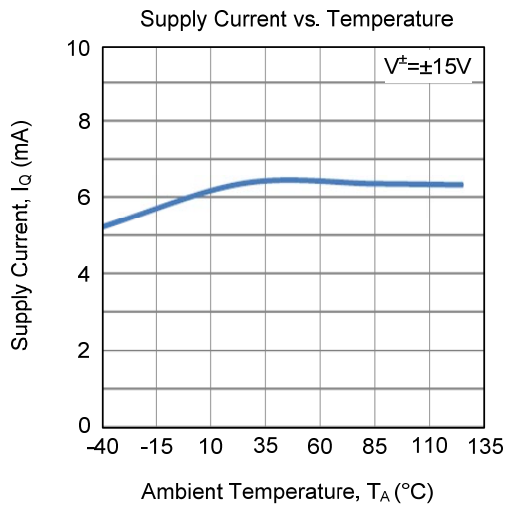
■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ _{JA}	100	°C/W

■ ELECTRICAL CHARACTERISTICS (V[±] = ±15V, T_A = 25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS (Note 1)	MIN	TYP	MAX	UNIT
Supply Current/Amplifier	I _Q	V _O = 0, No Load		1.8	4	mA
Power Supply Rejection Ratio	PSRR	V [±] = ±9V to ±15V, V _O = 0	80	100		dB
Input Offset Voltage	V _{OS}	V _O = 0		0.6	4	mV
Input Bias Current	I _B			400	900	nA
Input Offset Current	I _{OS}			20	150	nA
Common-Mode Voltage Range	V _{CM}		-12		12	V
Common-Mode Rejection Ratio	CMRR	V _{IC} = ±12V	70	100		dB
Large Signal Voltage Gain	A _V	R _L ≥ 600Ω, V _O = ±10V	80	95		dB
		R _L ≥ 2kΩ, V _O = ±10V	84	98		dB
Output Voltage	V _O	V [±] = ±15V, R _L ≥ 600Ω				V
			V _{OH}	12	13	
			V _{OL}	-13	-12	
Short-Circuit Current	I _{SC}		10	38	60	mA
Slew Rate	SR			8.5		V/μs
Gain-Bandwidth Product	GBW	R _L = 600Ω, C _L = 100pF		9		MHz
Input-Referred Voltage Noise	e _n	f = 30Hz		9		nV/√Hz
		f = 1kHz		7		nV/√Hz
Input-Referred Current Noise	i _n	f = 30Hz		3		pA/√Hz
		f = 1kHz		1		pA/√Hz

■ TYPICAL CHARACTERISTICS



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