

**UTC** UNISONIC TECHNOLOGIES CO., LTD

# **UNE5532**

## LINEAR INTEGRATED CIRCUIT

# **DUAL LOW-NOISE OPERATIONAL AMPLIFIER**

#### DESCRIPTION

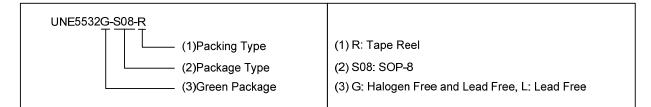
The UTC UNE5532 is high-performance operational amplifiers with excellent DC/AC and very low noise characteristics. It features high output-drive capability (with internal short-circuit protection), high unity-gain and maximum-output-swing bandwidths, low distortion, high slew rate, unity-gain operation,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

#### **FEATURES**

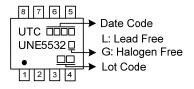
- \* Supply Voltage:±5~±15V
- \* Supply Current/Amplifier: 7mA (Max.)
- \* Input Offset Voltage: 4mV (Max.)
- \* Slew Rate: 8.5V/µs (Typ.)

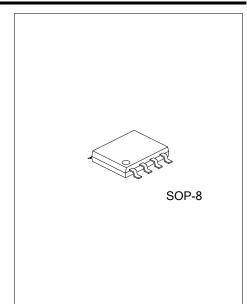
#### **ORDERING INFORMATION**

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



#### MARKING

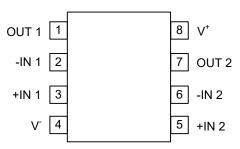




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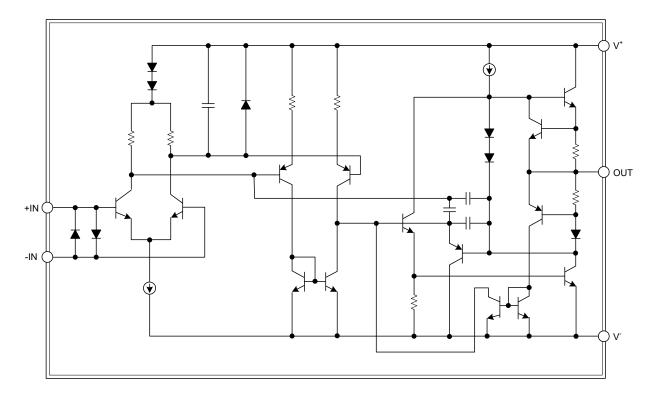
## ■ PIN CONFIGURATION



### 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 nee-an temperature range (unles	s ourier wise sp	collica)	
PARAMETER	SYMBOL	RATINGS	UNIT
Cumply Valtage (Nate 4)	V+	0 ~ 22	V
Supply Voltage (Note 1)	V-	-22 ~ 0	V
Differential Input Voltage (Note 2, 3)	V <sub>ID</sub>	Supply Voltage	V
Input Current (Note 4)		-10~10	mA
Junction Temperature	TJ	+150	°C
Storage Temperature	T <sub>STG</sub>	-65 ~ +150	°C

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

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<sup>+</sup> and V<sup>-</sup>.

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 <sup>+</sup>	5		15	V
Supply Voltage	V-	-5		-15	V
Operating Free-Air Temperature	TOPR	-40		+125	°C

#### THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ」Α	100	°C/W

#### ■ ELECTRICAL CHARACTERISTICS (V<sup>±</sup> =±15V, T<sub>A</sub>=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS (Note	MIN	TYP	MAX	UNIT	
Supply Current/Amplifier	lq	V <sub>0</sub> =0, No Load			3.2	7	mA
Power Supply Rejection Ratio	PSRR	$V^{\pm}=\pm 9V$ to $\pm 15V$ , $V_0=0$			100		dB
Input Offset Voltage	Vos	Vo=0			0.6	4.0	mV
Input Bias Current	IB				400	900	nA
Input Offset Current	los				30	150	nA
Common-Mode Voltage Range	V <sub>CM</sub>					12	V
Common-Mode Rejection Ratio	CMRR	V <sub>IC</sub> =±12V			100		dB
Large Signal Voltage Gain	Av	R∟≥600Ω, V₀=±10V	80	95		dB	
		R∟≥2kΩ, V₀=±10V		84	98		dB
Output Mathema	Vo	V <sup>±</sup> =±15V, R <sub>L</sub> ≥600Ω V <sub>OH</sub> V <sub>OL</sub>	Vон	12	13		
Output Voltage			Vol		-13	-12	V
Short-Circuit Current	lsc			10	47	70	mA
Slew Rate	SR				8.5		V/µs
Gain-Bandwidth Product	GBW	R∟=600Ω, C∟=100pF		7		MHz	
Input-Referred Voltage Noise	en	f=30Hz			9		nV/√Hz
		f=1kHz			7		nV/√Hz
Input-Referred Current Noise	in	f=30Hz		3		pA/ √Hz	
		f=1kHz			1		pA/√Hz

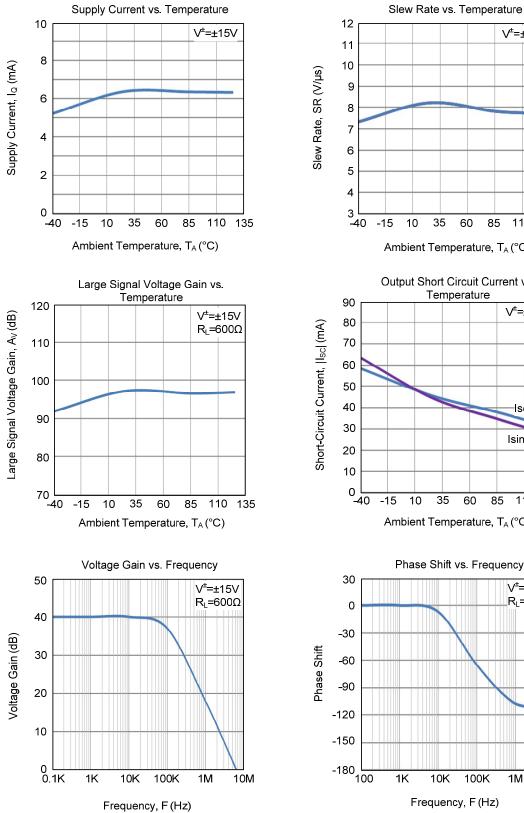


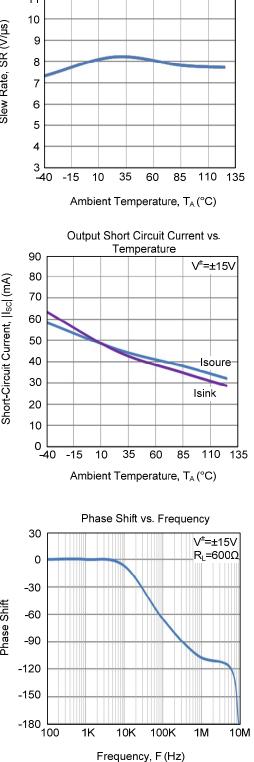
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V<sup>±</sup>=±15∨

### **TYPICAL CHARACTERISTICS**







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