UNISONIC TECHNOLOGIES CO., LTD

UTC571N

LINEAR INTEGRATED CIRCUIT

COMPANDOR

■ DESCRIPTION

The UTC571N is a versatile low cost dual gain control circuit in which either channel may be used as a dynamic range compressor or expandor. Each channel has a full-wave rectifier to detect the average value of the signal, a linerarized temperature-compensated variable gain cell and an operational amplifier.

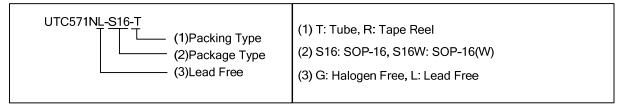
The UTC571N is well suited for use in cellular radio and radio communication systems, modems, telephone, and satellite broadcast/receive audio systems.

■ FEATURES

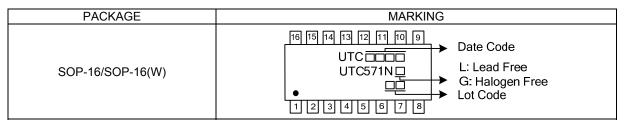
- * Complete compressor and expandor in one Chip
- * Temperature compensated
- * Greater than 110dB dynamic range
- * Operates down to 6VDC
- * System levels adjustable with external components
- * Distortion may be trimmed out
- * Dynamic noise reduction systems
- * Voltage-controlled amplifier

■ OPDEDING INFORMATION

- ORDERING INI ORIVIA				
Ordering Number		Dookses	Dealing	
Lead Free	Halogen Free	Package	Packing	
UTC571NL-S16-T	UTC571NG-S16-T	SOP-16	Tube	
UTC571NL-S16-R	UTC571NG-S16-R	SOP-16	Tape Reel	
UTC571NL-S16W-T	UTC571NG-S16W-T	SOP-16W	Tube	
UTC571NL-S16W-R	UTC571NG-S16W-R	SOP-16W	Tape Reel	



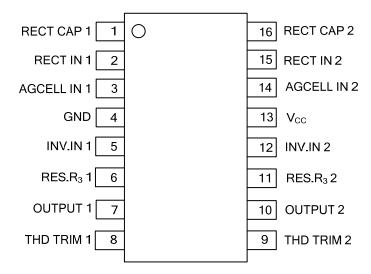
MARKING INFORMATION



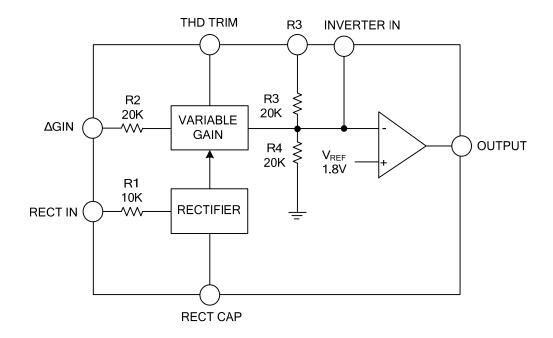
SOP-16 SOP-16W

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■ PIN CONNECTIONS



■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS(T_A=25 °C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNITS	
Operating Voltage		V _{CC}	18	V	
Power Dissipation	SOP-16		400	mW	
	SOP-16(W)	P _D	625		
Junction Temperature		TJ	+150	°C	
Operating Temperature		T _{OPR}	-20 ~ +85	°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.

■ THERMAL DATA

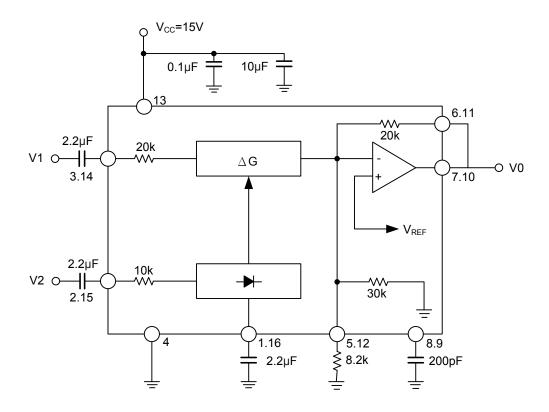
PARAMETER		SYMBOL	RATINGS	UNIT	
Junction to Ambient	SOP-16	0	130	°C/M	
	SOP-16(W)	$\Theta_{ m JA}$	105	°C/W	

■ AC ELECTRICAL CHARACTERISTICS(T_A=25 °C, V_{CC}=+5V, unless otherwise specified)

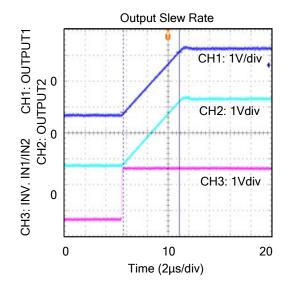
PARAMETER	SYMBOL	CONDITIONS		MIN	TYP	MAX	UNITS
Supply Voltage	V_{CC}			6		18	V
Supply Current	I _{CC}	No signal 3.2		3.2	4.8	m Λ	
Output Current capability	I _{OUT}			20			mA
Output Slew Rate	SR				0.5		V/µs
Gsin Cell Distortion		Untrimmed Trimmed			0.5	2.0	%
					0.1		
Resister Tolerance					5	15	%
Internal Reference Voltage				1.7	1.85	2.0	V
Output DC Shift (Note 3)		Untrimmed			30	150	mV
Expandor Output Noise		No signal, 15Hz-20kHz (Note 1)			20	60	V
Unity Gain Level (Note 5)		1kHz		-1.5	0	+1.5	dBm
Gain Change (Note 2,4)					0.1		dB
Reference Drift (Note 4)					+2,-25	+20,-50	mV
Resistor Drift (Note 4)					+8,-0		%
Tracking Error(measured relative		Rectifier input,	V2=+6dBm,V1=0dB		+0.2		
to value at unity gain) Equals [V _{OUT} -V _{OUT} (unity gain)]dB-V2dBm			V2=-30dBm, V1=0dB		+0.2	-1,+1.5	dB
Channel Separation			·		60		dB

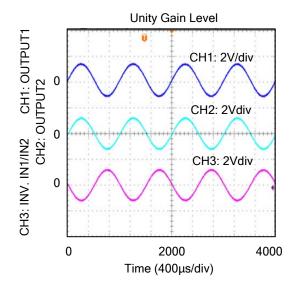
- Note: 1. Input to V1 and V2 grounded.
 - 2. Measured at 0dBm, 1kHz.
 - 3. Expandor AC input change from no signal to 0dBm.
 - 4. Relative to value at $T_A = 25$ °C.
 - 5. 0dBm = 775mV RMS.
 - 6. Electrical characteristics for the **UTC571N** only are specified over -20 to +85°C temperature range.

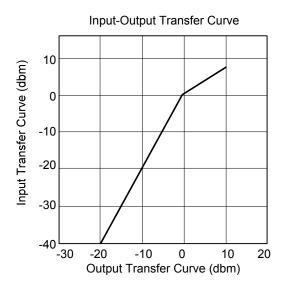
■ TYPICAL APPLICATION CIRCUIT



■ TYPICAL CHARACTERISTICS







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