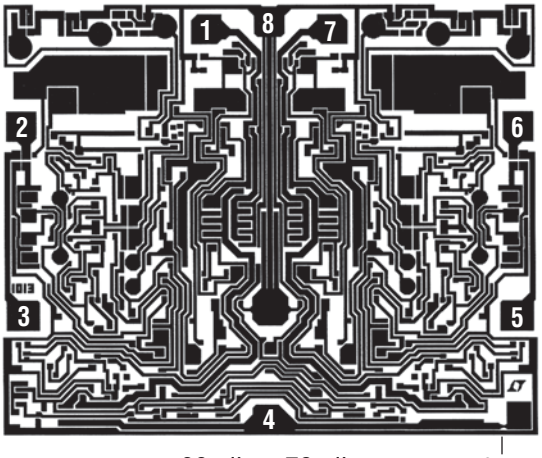
DICE SPECIFICATION

RH1013
Dual Precision Op Amp



96mils × 78mils,
12mils thick.
Backside metal: Gold
Backside potential: V⁻

PAD FUNCTION

1. OUTPUT A
2. –INA
3. +INA
4. V^-
5. +INB
6. –INB
7. OUTPUT B
8. V^+

DIE CROSS REFERENCE

LTC Finished Part Number	Order Part Number
RH1013	RH1013 DICE

Please refer to LTC standard product data sheet for other applicable product information.

DICE ELECTRICAL TEST LIMITS $V_S = \pm15V$, $V_{CM} = 0V$, $T_A = 25°C$, unless otherwise noted.

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNITS
V_{OS}	Input Offset Voltage			300	µV
		(Note 2)		450	µV
I_{OS}	Input Offset Current			10	nA
		(Note 2)		10	nA
I_B	Input Bias Current			30	nA
		(Note 2)		30	nA
A_{VOL}	Large-Signal Voltage Gain	$V_O = \pm10V$, $R_L \geq 2k$ $V_O = \pm10V$, $R_L \geq 600\Omega$	1.2 0.5		V/µV V/µV
	Input Voltage Range	(Note 1)	13.5 –15.0		V V
		(Notes 1, 2)	3.5 0		V V
CMRR	Common Mode Rejection Ratio	$V_{CM} = 13.5V, –15V$	97		dB
PSRR	Power Supply Rejection Ratio	$V_S = \pm2V$ to $\pm18V$	100		dB
	Channel Separation	$V_O = \pm10V$, $R_L = 2k$	120		dB
V_{OUT}	Output Saturation Swing	$R_L \geq 2k$ Output Low, No Load, (Note 2) Output Low, 600Ω to GND, (Note 2) Output Low, $I_{SINK} = 1mA$, (Note 2) Output High, No Load, (Note 2) Output High, 600Ω to GND, (Note 2)	±12.5 4.0 3.4	 25 10 350 	V mV mV mV V V
SR	Slew Rate		0.2		V/µs
I_S	Supply Curent	Per Amplifier		0.55	mA
		(Note 2)		0.50	mA

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Note 1: Guaranteed by design, characterization or correlation to other tested parameters.

Note 2: Specification applies for $V_S^+ = 5V$, $V_S^- = 0V$, $V_{CM} = 0V$, $V_{OUT} = 1.4V$.

Rad Hard die require special handling as compared to standard IC chips.

Rad Hard die are susceptible to surface damage because there is no silicon nitride passivation as on standard die. Silicon nitride protects the die surface from scratches by its hard and dense properties. The passivation on Rad Hard die is silicon dioxide that is much "softer" than silicon nitride.

LTC recommends that die handling be performed with extreme care so as to protect the die surface from scratches. If the need arises to move the die around from the chip tray, use a Teflon-tipped vacuum wand. This wand can be made by pushing a small diameter Teflon tubing onto the tip of a steel-tipped wand. The inside diameter of the Teflon tip should match the die size for efficient pickup. The tip of the Teflon should be cut square and flat to ensure good vacuum to die surface. Ensure the Teflon tip remains clean from debris by inspecting under stereoscope.

During die attach, care must be exercised to ensure no tweezers touch the top of the die.

Wafer level testing is performed per the indicated specifications for dice. Considerable differences in performance can often be observed for dice versus packaged units due to the influences of packaging and assembly on certain devices and/or parameters. Please consult factory for more information on dice performance and lot qualifications via lot sampling test procedures.

Dice data sheet subject to change. Please consult factory for current revision in production.

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