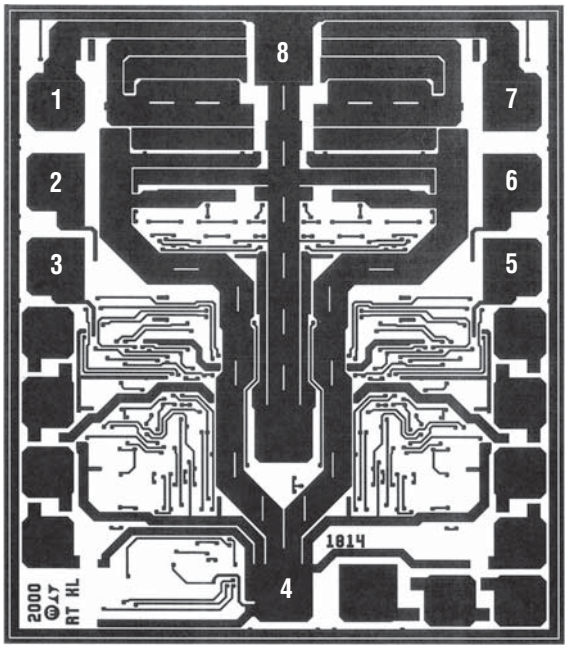
DICE SPECIFICATION

RH1814
Dual 3mA, 100MHz, 750V/µs Operational Amplifier



40mils × 45mils,
Thickness: 12mils.
Backside metal: Gold.

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 DICE CANDIDATE Part Number Below
RH1814	RH1814 DICE

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

Note: Backside (substrate) maybe connected to V^- or no connection.

ABSOLUTE MAXIMUM RATINGS

(Note 1)

Supply Voltage 12.6V
Differential Input Voltage (Note 2) ..... ±6V
Input Voltage ..... $\pm V_S$
Output Short-Circuit Duration ..... Indefinite
Junction Temperature ..... 150°C

DICE ELECTRICAL TEST LIMITS

V_S = ±5V, V_{CM} = 0V, T_A = 25°C unless otherwise noted.

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNITS
V_{OS}	Input Offset Voltage	(Note 3)		1.5	mV
I_{OS}	Input Offset Current			400	nA
I_B	Input Bias Current			±4	µA
R_{IN}	Input Resistance	V_{CM} = ±3.5V	3		MΩ
A_{VOL}	Large-Signal Voltage Gain	V_O = ±3V, $R_L \geq 500\Omega$	1.5		V/mV
		V_O = ±3V, $R_L \geq 100\Omega$	1		V/mV
	Input Voltage Range	Guaranteed by CMRR	±3.5		V
CMRR	Common-Mode Rejection Ratio	V_{CM} = ±3.5V	75		dB

DICE ELECTRICAL TEST LIMITS

V_S = ±5V, V_{CM} = 0V, T_A = 25°C unless otherwise noted.

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNITS
PSRR	Power Supply Rejection Ratio	V_S = ±2V to ±5.5V	78		dB
	Channel Separation	V_O = ±3V, R_L = 100Ω	82		dB
V_{OUT}	Output Voltage Swing	R_L = 500Ω, 30mV Overdrive	±3.8		V
		R_L = 100Ω, 30mV Overdrive	±3.35		V
I_{OUT}	Maximum Output Current	V_{OUT} = ±3V, 30mV Overdrive	±40		mA
I_{SC}	Output Short-Circuit Current	V_{OUT} = 0V, 1V Overdrive	±75		mA
I_S	Supply Current	Per Amplifier		3.6	mA

DICE ELECTRICAL TEST LIMITS (Pre-Irradiation)

V_S = 5V, V_{CM} = 0V, T_A = 25°C unless otherwise noted.

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNITS
V_{OS}	Input Offset Voltage	(Note 3)		2	mV
I_{OS}	Input Offset Current			400	nA
I_B	Input Bias Current			±4	µA
R_{IN}	Input Resistance	V_{CM} = 1.5V to 3.5V	3		MΩ
A_{VOL}	Large-Signal Voltage Gain	V_O = 1.5V to 3.5V, $R_L \geq$ 500Ω	1		V/mV
		V_O = 1.5V to 3.5V, $R_L \geq$ 100Ω	0.7		V/mV
	Input Voltage Range (Positive)	Guaranteed by CMRR	3.5		V
	Input Voltage Range (Negative)	Guaranteed by CMRR		1.5	V
CMRR	Common-Mode Rejection Ratio	V_{CM} = 1.5V to 3.5V	73		dB
PSRR	Power Supply Rejection Ratio	V_S = ±2V to ±5.5V	78		dB
	Channel Separation	V_{OUT} = 1.5V to 3.5V, R_L = 100Ω	81		mA
V_{OUT}	Output Voltage Swing (Positive)	R_L = 500Ω, 30mV Overdrive	3.9		V
		R_L = 100Ω, 30mV Overdrive	3.7		V
V_{OUT}	Output Voltage Swing (Negative)	R_L = 500Ω, 30mV Overdrive		1.1	V
		R_L = 100Ω, 30mV Overdrive		1.3	V
I_{OUT}	Maximum Output Current	V_{OUT} = 1.5V to 3.5V, 30mV Overdrive	±25		mA
I_{SC}	Output Short-Circuit Current	V_{OUT} = 2.5V, 1V Overdrive	±55		mA
I_S	Supply Current	Per Amplifier		4	mA

Note 1: Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. Exposure to any Absolute Maximum Rating condition for extended periods may affect device reliability and lifetime.

Note 2: Differential inputs of ±6V are appropriate for transient operation only, such as during slewing. Large sustained differential inputs can cause excessive power dissipation and may damage the part.

Note 3: Input offset voltage is pulse tested and is exclusive of warm-up drift.

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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