T-73-29

BURR-BROWN®

MPY534 DIE

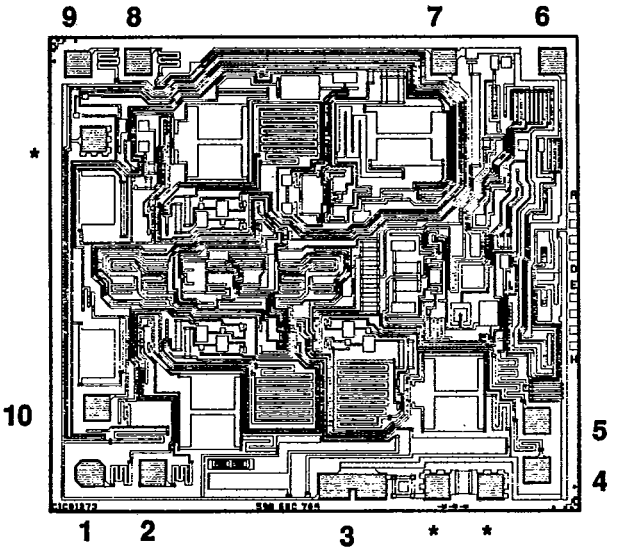
Precision ANALOG MULTIPLIER DIE

DESCRIPTION

The MPY534 is a high accuracy, general purpose four-quadrant analog multiplier. Its laser trimmed accuracy makes it easy to use in a variety of applications requiring a multiplier transfer function. Differential X, Y, and Z inputs allow configuration as a multiplier, squarer, divider, square-rooter, and other functions.

The wide bandwidth of this new design allows accurate signal processing at higher frequencies. It is suitable for video signal processing, IF an RF frequency mixing, modulation, and demodulation with excellent carrier rejection. Through the Z input, the user can select scale factors from 0.1 to 10 using external feedback resistors.

DIE TOPOGRAPHY



* Do Not Connect

PAD	FUNCTION	PAD	FUNCTION	
1	Y_1	6	Output	Die Size: 100 X 921mils
2	Y_2	7	$+V_S$	Die Thickness: 20mils (±0.4mils)
3	$-V_S$	8	X_1	Bonding Pad Size: 5 X 5mils
4	Z_2	9	X_2	Backside Potential: $-V_{CC}$
5	Z_1	10	SF (Scale Factor)	

NOTE: The back of the die should not be used for the $-V_{CC}$ connection.

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SPECIFICATIONS

ELECTRICAL PROBE LIMITS[1]

At T_{DIE} = +25°C and $\pm V_{CC}$ = ±15VDC, unless otherwise specified.

PARAMETER	CONDITIONS	MPY534AD/CD			MPY534AD/LAT,MD-B			UNITS
		MIN	TYP	MAX	MIN	TYP	MAX	
TOTAL ERROR				±1.0			±1.5	%
OUTPUT SWING	R_L = 2kΩ	±11			±11			V
OFFSET VOLTAGE	X,Y Z			20 30			20 30	mV mV
CMRR	X,Y	60					60	dB
BIAS CURRENT				±2			2	µA
POWER SUPPLY Voltage Quiescent Current	 I_O = 0mADC	 ±8		 ±18 ±6		 ±8	 ±18 ±6	 V mA

NOTES: (1) Electrical Probe Limits — All dice are 100% probe tested to the specification limits listed. Due to possible wafer saw and assembly shifts, parameters are not guaranteed for assembled units. (2) Guaranteed Limits — Specification limits are guaranteed for a sample plan of $10^{(1)}$, when die sample is prepared in the following manner: die attached eutectically to a 14-pin ceramic sidebraze package or 10-pin TO-100 metal can, wire bonded with 1-mil (0.001 inch) aluminum wire, and sealed in a nitrogen atmosphere, resulting in an internal water vapor content of less than 5,000ppm.

ORDERING INFORMATION

MPY534 (A) D (/LAT, -B)

Basic Model Number

Grade Temperature Range
A = –25°C to +85°C
C = –55°C to +125°C
M = –55°C to +125°C

Package Code
D = Die

Screening Option
/LAT = Lot Acceptance Testing
-B = MIL-STD-883, Method 5008, Class B, Table III, Para. 3.2.2.4

ABSOLUTE MAXIMUM RATINGS

Supply Voltage ($+V_{CC}$ to $-V_{CC}$)	±18VDC
Output Short-Circuit-to-Ground	Indefinite
Input Voltage (all X, Y, and Z)	$\pm V_S$
Storage Temperature Range	–65°C to +150°C
Junction Temperature	+150°C
Power Dissipation	300°C/mW

RECOMMENDED OPERATING CONDITIONS

Supply Voltage $\pm V_{CC}$	±15VDC
Temperature Range	–55°C to +125°C

VISUAL

MPY534AD dice are visually inspected to MIL-STD-883, Method 2010, Test Condition B (AD, AD/LAT, CD, and MD-B).

PACKAGING

Dice are packaged face-up in individually compartmented antistatic plastic carriers (waffle packs) and may be oriented for automated assembly. Carriers are heat-sealed in antistatic plastic bags.

MARKING

Each die carrier is marked with:

1. Burr-Brown part number
2. Lot number
3. Wafer number
4. QA seal and date
5. Quantity
6. QC identification number

If required, the customer part number and order number can be marked on each package.

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