

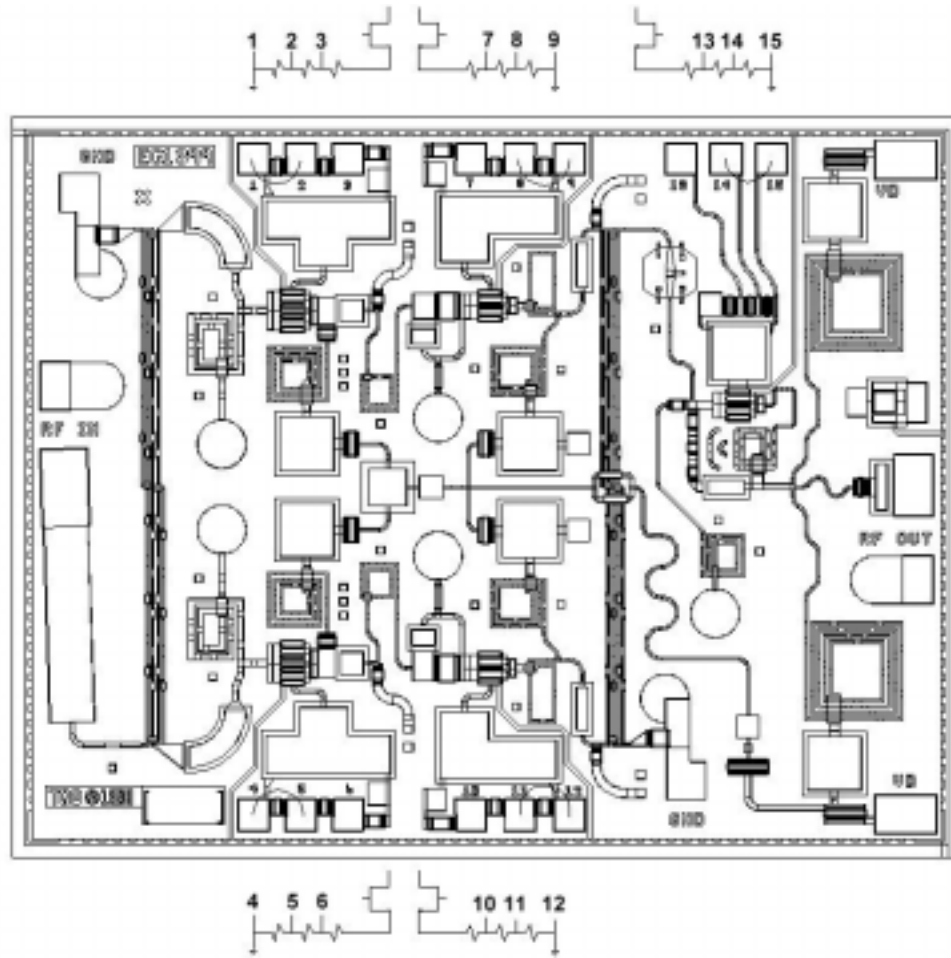
**DRAIN CURRENT ADJUSTMENT  
OF THE  
TGA8399B AND TGA8399C**

**BACKGROUND:** TriQuint Semiconductor Texas has two self-biased amplifiers which can be modified to increase or decrease the drain current. These devices are the TGA8399B (6-13 GHz Low Noise Amplifier) and the TGA8399C (8-18 GHz Wideband Driver).

**METHOD:** The user of the device should make the on-MMIC bond pad connections to achieve the desired bias current as shown in the appropriate connection table below. For example on the TGA8399B MMIC: To obtain the highest bias current, functional connect bond pad 1 to bond pad 3, bond pad 4 to bond pad 6, bond pad 7 to bond pad 9, bond pad 10 to bond pad 12 and bond pad 13 to bond pad 15 using a total of five 1 mil diameter, 20-2 mil length gold bond wires. The recommended approach below should be followed to achieve these connections.

A chain of resistors on the chip can be bonded out of the circuit. A pictorial is supplied with this application note to demonstrate the recommended bonding scheme for the desired current. Tables are provided listing bond pads which would be used to obtain a higher or lower current.

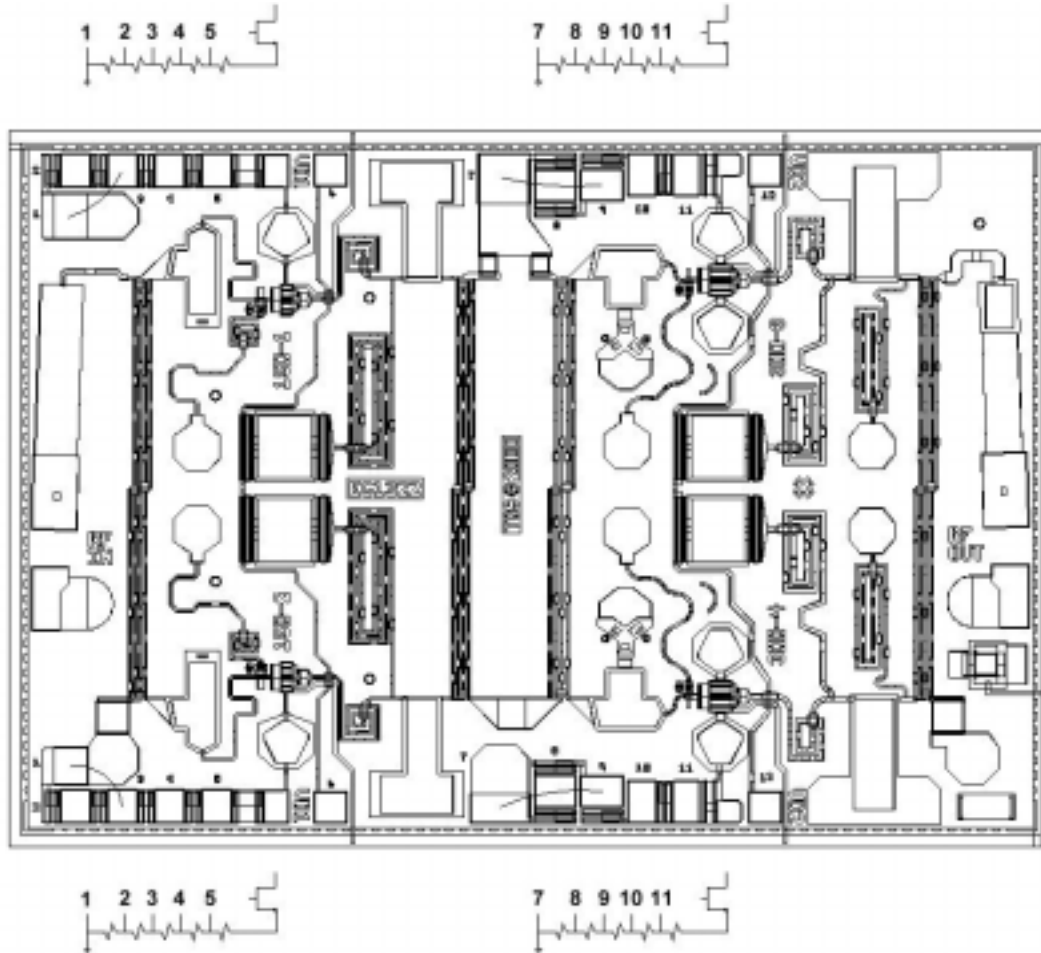
**RECOMMENDED APPROACH:** We recommend that the number of resistors that are bonded out of the circuit be the same for all resistor chains on the chip. Also, these resistors can be bonded to either the on-chip ground or an off-chip ground. We also recommend bonding each pad to an off-chip ground in order to easily modify the drain current by simply pulling one wire off at a time. This will also prevent the on-chip ground pad from being damaged.



TGA8399B Layout with Nominal Current Bonds Shown

Current	Connection
Highest (~75mA)	1 to 3, 4 to 6, 7 to 9, 10 to 12, 13 to 15
Nominal (~65mA)	1 to 2, 4 to 5, 8 to 9, 11 to 12, 14 to 15
Lowest (~55mA)	No Connection

TGA8399B Connections  
(On-Chip Ground Pads – 1, 4, 9, 12, & 15)



TGA8399C Layout with Nominal Current Bonds Shown

<b>Current</b>	<b>Connection</b>
Highest (~60mA)	1 to 5, 7 to 11
Higher (~55mA)	1 to 4, 7 to 10
Nominal (~50mA)	1 to 3, 7 to 9
Lower (~45mA)	1 to 2, 7 to 8
Lowest (~40mA)	No Connection

TGA8399C Connections  
(On-Chip Ground Pads – 1 & 7)

For additional information, please contact TriQuint Texas Applications Engineering Department at 972-994-3647.