TRANSCOM

TC3532

REV.4_04/12/2004

4.9 - 6 GHz 29dBm MMIC

FEATURES

- P_{-1} dB: 29 dBm
- Small Signal Gain: 21 dB
- Power Added Efficiency: 25 %
- IP3: 39 dBm
- Match to 50 Ω operation
- Bias condition: 400 mA @ 8 V

PHOTO ENLARGEMENT

DESCRIPTION

The TC3532 is a 2 stage PHEMT MMIC power amplifier. It is designed for use in low cost, high volume, 4.9~6 GHz band applications. The MMIC is matched to 50Ω operation. No external matching component is required. It provides a typical gain of 21 dB and P1dB power of more than 29 dBm. Typical bias condition is 8V at 400 mA. The MMIC is packaged in a Ceramic 10 Pins package. The copper based carrier of the package allows direct soldering of the device to the PCB.

APPLICATIONS

- Wireless Internet Access

ELECTRICAL SPECIFICATIONS (Ta = 25 °C)

SYMBOL	DESCRIPTION	MIN	TYP	MAX	UNITS
FREQ	Frequency Range	4.9		6	GHz
SSG	Small Signal Gain	19	21		dB
GOF	Small Signal Gain Flatness		±0.5	±0.75	dB
P_{-1} dB	Output Power at 1 dB Gain Compression	28	29		dBm
P_{-3} dB	Output Power at 3 dB Gain Compression	29	30		dBm
IP3	Third Order Intercept Point	37	39		dBm
VSWR, IN	Input VSWR		2:1		
VDD	Supply Voltage		8		Volt
IDD	Current Supply Without RF		400		mA
IDP_{-1}	Current Supply @ Pout=P_{-1} dB		400	450	mA
ηa	Power Added Efficiency		25		%

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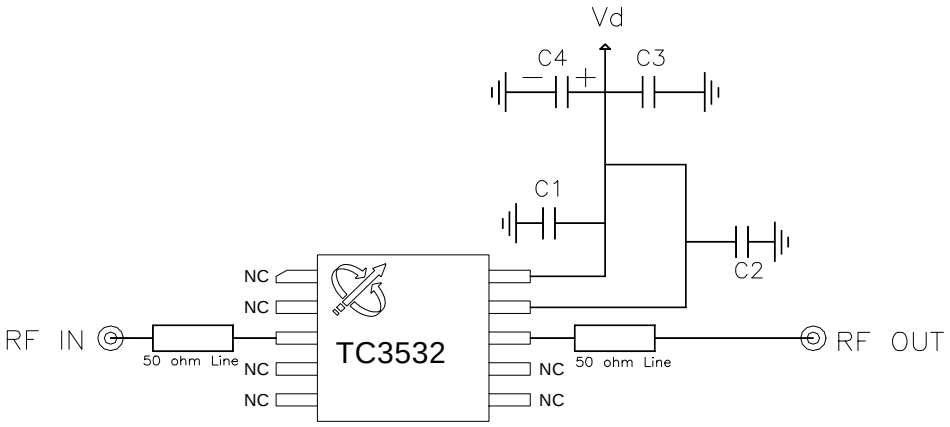
TEST CIRCUITS

Evaluation Board Schematic



EVALUATION BOARD

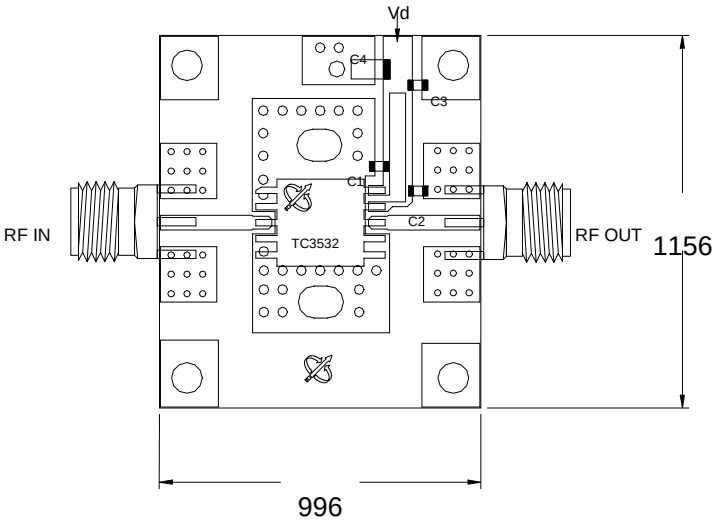
DXF file of the PCB can be downloaded from our web-site at **www.transcominc.com.tw**

PCB Material: RO4003

ER = 3.38

Thickness = 20 mil

Unit: mil



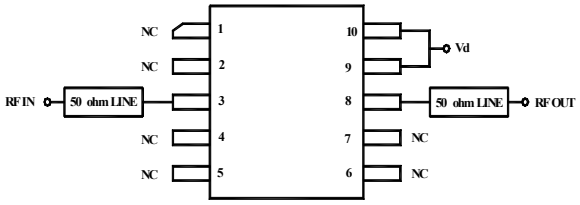
Application Notes:

For better heat sinking and grounding, it's recommended to have the via holes beneath TC3532 filled with solder and have two screws besides TC3532 installed on the PCB area.

Evaluation Board Parts List

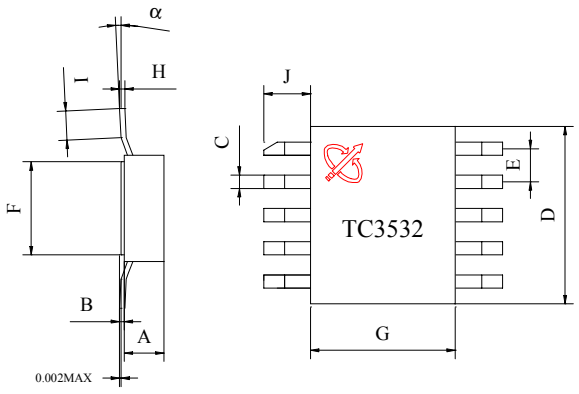
Part Type	Reference Designator	Description	Manufacturer	Part Number
Capacitor	C1, C2	0.1 uF 0603	Murata	GRM39Y5V104Z25V
Capacitor	C3	1000pF 0603	Murata	GRM39C0G102J50V
Capacitor	C4	4.7uF Tantalum Cap.		

CONNECTION DIAGRAM AND PIN DESCRIPTIONS



Pin #	Name	Description
3	RF IN	RF input
9, 10	Vd	MMIC Drain bias
8	RF OUT	RF output (internally DC blocked)
Others	NC	No Connection

PHYSICAL DIMENSIONS (Unit: inches)



DIMENSION	MINIMUM	NOMINAL	MAXIMUM
A	0.054	0.057	0.060
B	0.007	0.008	0.009
C	0.017	0.020	0.023
D	0.267	0.270	0.273
E	0.047	0.050	0.053
F	0.247	0.250	0.253
G	0.267	0.270	0.273
H	0.007	0.008	0.009
I	0.020		0.040
J	0.073	0.080	0.087
α	0°		7°