

## 5.25 – 5.875 GHz 3W prematched FETs

### FEATURES

- P<sub>1</sub> dB: 34.5dBm
- Small Signal Gain: 11 dB
- Power Added Efficiency: 45 %
- IP3: 43.5 dBm
- Input/Output Prematched
- Bias condition: 750 mA @ 8 V

### PHOTO ENLARGEMENT



### DESCRIPTION

The TC3873 is a prematched GaAs PHEMT hybrid device. It is designed for use in low cost, high volume, and 5.25~5.875 GHz 3W amplifiers. It provides a typical gain of 11dB and P1dB of 34.5dBm. The device is packed in a copper based ceramic 10 pins SMT packages. The copper based carrier of the package allows direct soldering of the device to the PCB..

### ELECTRICAL SPECIFICATIONS (T<sub>A</sub>=25 °C)

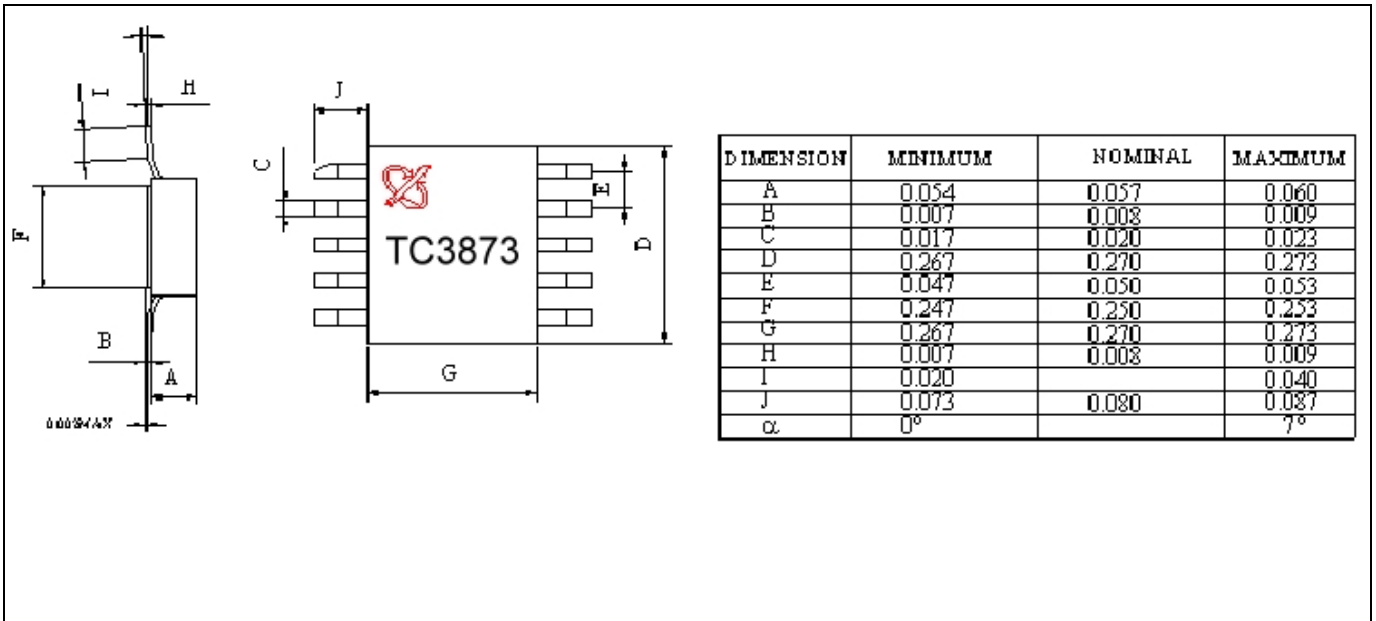
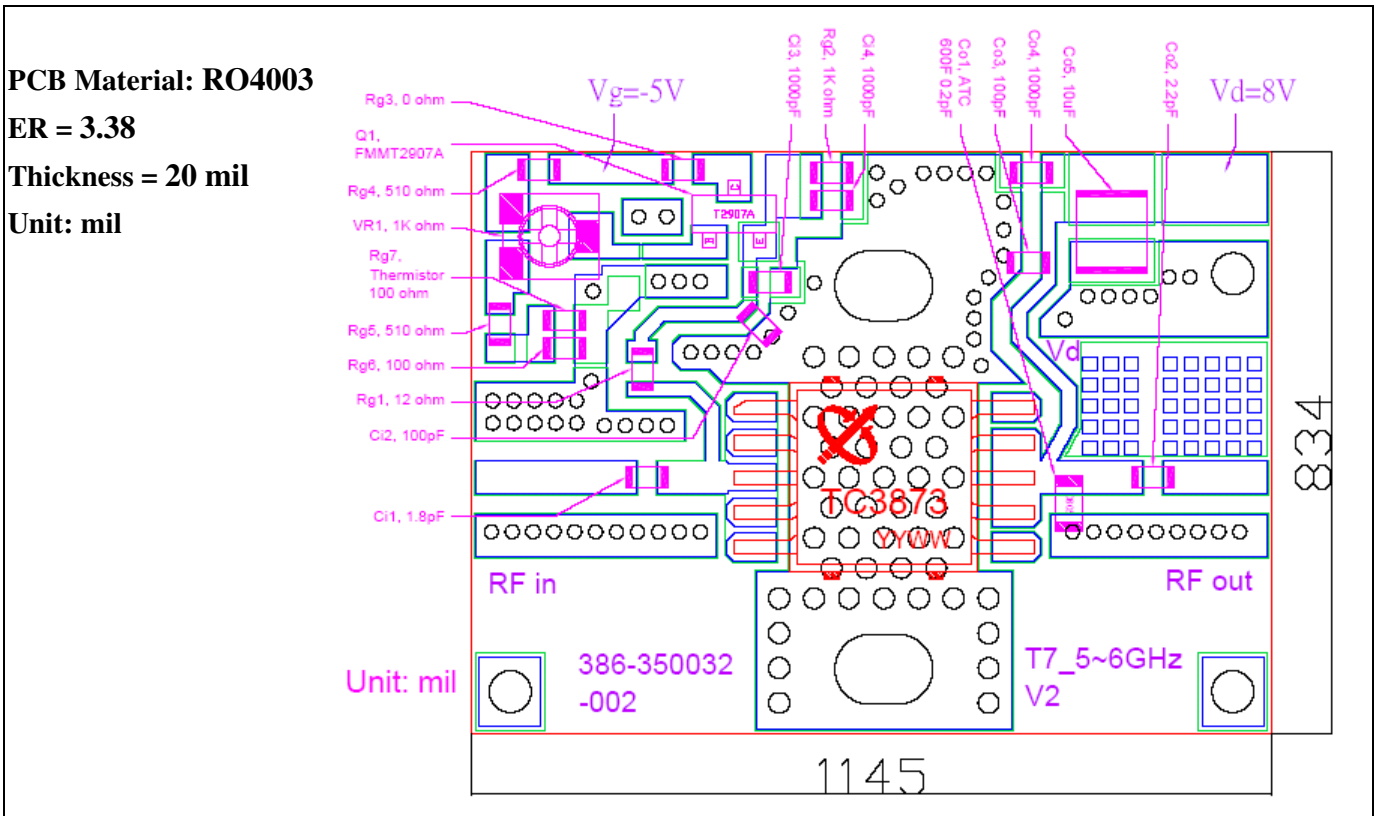
Symbol	Conditions	MIN	TYP	MAX	UNIT
<b>FREQ</b>	Frequency Range	5.25		5.875	GHz
<b>SSG</b>	Small Signal Gain	10	11		dB
<b>P<sub>1</sub> dB</b>	Output Power at 1 dB Gain Compression	33.5	34.5		dBm
<b>IP3</b>	Third Order Intercept Point @ P <sub>SCL</sub> =21 dbm	42.5	43.5		dBm
<b>VDD</b>	Supply Voltage		8		Volt
<b>IDD</b>	Current Supply Without RF		750		mA
<b>Vg</b>	Gate Voltage	-0.5	-1.0	-1.5	Volt
<b>η<sub>a</sub></b>	Power Added Efficiency		45		%

### Absolute Maximum Ratings

Symbol	Parameter/Conditions	Min.	Max.	Units
V <sub>dd</sub>	Drain-Source Voltage		10	Volts
P <sub>in</sub>	RF Input Power	27.5		dBm
P <sub>t</sub>	Power Dissipation	11.5		W
T <sub>ch</sub>	Operating Channel Temperature		175	°C
T <sub>STG</sub>	Storage Temperature	-65	175	°C

#### Note:

1. This GaAs FET is susceptible to damage from Electrostatic Discharge. Proper precautions should be used when handling these devices.
2. Specifications subject to change without notice.

**PHYSICAL DIMENSIONS (Unit : inches)**

**EVALUATION BOARD**


**Evaluation Board Parts List**

Qt'y	Description	Reference Designator	Manufacturer	Inventory ID
1	Chip Cap (0603) 1.8PF±0.25PF	Ci1	Murata	GRM39COG1R8C50V
2	Chip Cap (0603) 100PF±5%	Ci2, Co3	Murata	GRM39X7R101K50V
3	Chip Cap (0603) 1000PF±5%	Ci3, Ci4, Co4	Murata	GRM39X7R102K50V
1	Chip Resistor (0603) 12Ω±5%	Rg1		
1	Chip Resistor (0603) 1KΩ±5%	Rg2		
1	Chip Resistor (0603) 0Ω±5%	Rg3		
2	Chip Resistor (0603) 510Ω±5%	Rg4, Rg5		
1	Chip Resistor (0603) 100Ω±5%	Rg6		
1	Thermistor (0402) 100Ω ±5%	Rg7		
1	SMT Trimmer Potentiometers (3.0*3.0mm) 1KΩ	VR1		
1	PNP, FMMT2907A (SOT-23)	Q1		
1	Chip Cap (0805) 0.2PF±0.1PF	Co1	ATC	ATC 600F 0R2BT (0.2pF±0.1pF 250WVDC)
1	Chip Cap (0603) 2.2PF±0.25PF	Co2	Murata	GRM39COG2R2C50V
1	Chip Cap (1210) 10μF±20% (or Chip Cap (1206)10μF±20%)	Co5	Murata	GRM42-6Y5V106Z25V or GRM31CF5E106ZA01L