

# MAPLST1617-030CF



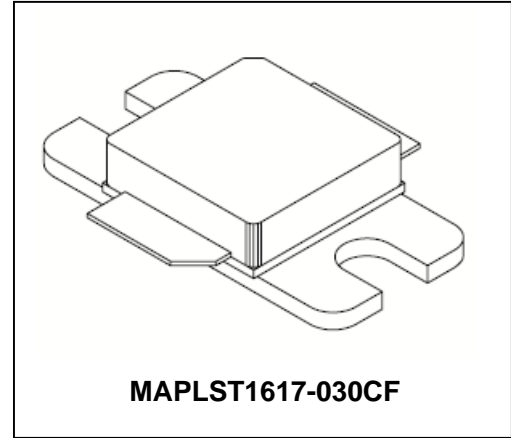
LDMOS RF Line Power FET Transistor  
30 W , 1600-1700 MHz, 28V

Discontinued  
(For Reference Only)

## Product Image

Designed for INMARSAT applications in the 1620-1670 MHz frequency band.

- Typical two tone performance (IMD=-30 dBc):  
Average output power: 15W  
Gain: 14dB (typ.)  
Efficiency: 38% (typ.)
- 10:1 VSWR ruggedness at 30W, 28V,1670MHz)



## MAXIMUM RATINGS

Parameter	Symbol	Rating	Units
Drain—Source Voltage	$V_{DSS}$	65	$V_{dc}$
Gate—Source Voltage	$V_{GS}$	20	$V_{dc}$
Total Power Dissipation @ $T_C = 25\text{ }^\circ\text{C}$	$P_D$	97	W
Storage Temperature	$T_{STG}$	-40 to +150	$^\circ\text{C}$
Junction Temperature	$T_J$	+200	$^\circ\text{C}$

## THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.8	$^\circ\text{C/W}$

NOTE—**CAUTION**—MOS devices are susceptible to damage from electrostatic charge. Precautions in handling and packaging MOS devices should be observed.

1

**ADVANCED:** Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.  
**PRELIMINARY:** Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

• **North America** Tel: 800.366.2266 / Fax: 978.366.2266  
• **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300  
• **Asia/Pacific** Tel: 81.44.844.8296 / Fax: 81.44.844.8298  
Visit [www.macomtech.com](http://www.macomtech.com) for additional data sheets and product information.

M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

# MAPLST1617-030CF



**LDMOS RF Line Power FET Transistor**  
**30 W , 1600-1700 MHz, 28V**

**Discontinued**  
**(For Reference Only)**

Characteristic	Symbol	Min	Typ	Max	Unit
<b>DC CHARACTERISTICS @ 25°C</b>					
Drain-Source Breakdown Voltage ( $V_{GS} = 0$ Vdc, $I_D = 20$ $\mu$ Adc)	$V_{(BR)DSS}$	65	—	—	Vdc
Zero Gate Voltage Drain Leakage Current ( $V_{DS} = 28$ Vdc, $V_{GS} = 0$ )	$I_{DSS}$	—	—	1	$\mu$ Adc
Gate—Source Leakage Current ( $V_{GS} = 5$ Vdc, $V_{DS} = 0$ )	$I_{GSS}$	—	—	1	$\mu$ Adc
Gate Threshold Voltage ( $V_{DS} = 10$ Vdc, $I_D = 1$ mA)	$V_{GS(th)}$	2	—	4	Vdc
Gate Quiescent Voltage ( $V_{DS} = 28$ Vdc, $I_D = 250$ mA)	$V_{DS(Q)}$	2	—	4.5	Vdc
Drain-Source On-Voltage ( $V_{GS} = 10$ Vdc, $I_D = 1$ A)	$V_{DS(on)}$	—	0.2	—	Vdc
Forward Transconductance ( $V_{GS} = 10$ Vdc, $I_D = 1$ A)	Gm	—	1.2	—	S
<b>DYNAMIC CHARACTERISTICS @ 25°C</b>					
Input Capacitance (Including Input Matching Capacitor in Package) ( $V_{DS} = 28$ Vdc, $V_{GS} = 0$ , $f = 1$ MHz)	$C_{iss}$	—	90	—	pF
Output Capacitance ( $V_{DS} = 28$ Vdc, $V_{GS} = 0$ , $f = 1$ MHz)	$C_{oss}$	—	32.5	—	pF
Reverse Transfer Capacitance ( $V_{DS} = 28$ Vdc, $V_{GS} = 0$ , $f = 1$ MHz)	$C_{rss}$	—	1.5	—	pF
<b>RF FUNCTIONAL TESTS @ 25°C (In M/A-COM Test Fixture)</b>					
CW Gain ( $V_{DS} = 28$ Vdc, $P_{OUT} = 30$ W (avg.), $I_{DQ} = 250$ mA, $f_0 = 1670$ MHz)	$G_{ps}$	—	14	—	dB
CW Drain Efficiency ( $V_{DS} = 28$ Vdc, $P_{OUT} = 30$ W (avg.), $I_{DQ} = 250$ mA, $f_0 = 1670$ MHz)	EFF ( $\eta$ )	—	50	—	%
CW Input Return Loss ( $V_{DS} = 28$ Vdc, $P_{OUT} = 30$ W (avg.), $I_{DQ} = 250$ mA, $f_0 = 1670$ MHz)	IRL	—	-10	-9	dB
IMD ( $V_{DS} = 28$ Vdc, $P_{OUT} = 15$ W (avg.) (30 W PEP), $I_{DQ} = 250$ mA, $f_0 = 1670$ MHz, $f_1 = 1670.1$ MHz)	IMD	—	-30	—	dBc
Output VSWR Tolerance ( $V_{DS} = 28$ Vdc, $P_{OUT} = 30$ W (avg.), $I_{DQ} = 250$ mA, $f_0 = 1670$ MHz)	$\Psi$	No Degradation In Output Power Before and After Test			

(1) Device specifications obtained on a Production Test Fixture.

# MAPLST1617-030CF

LDMOS RF Line Power FET Transistor  
30 W , 1600-1700 MHz, 28V

Discontinued  
(For Reference Only)

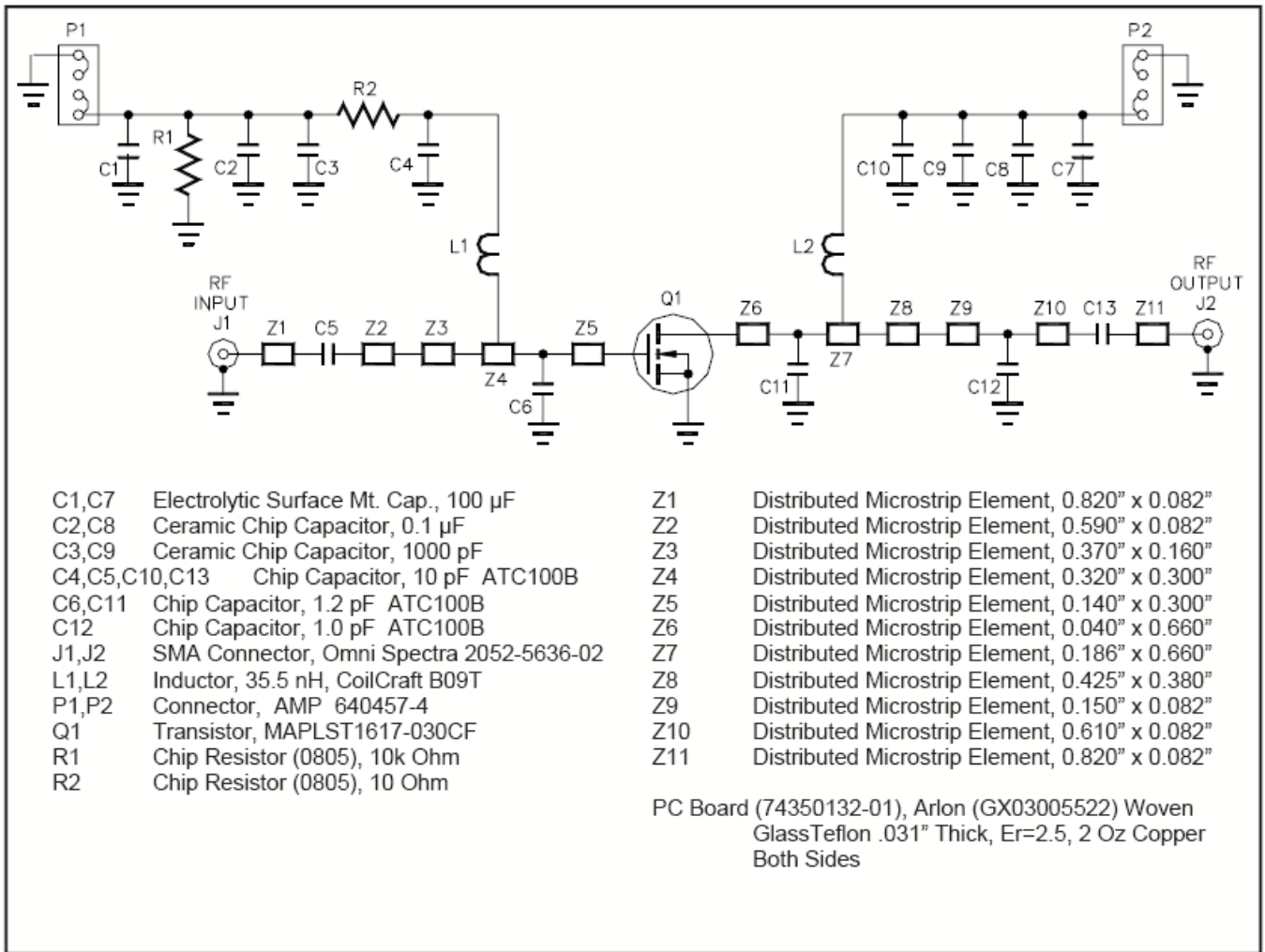


FIGURE 1. 1620—1670 MHZ TEST FIXTURE SCHEMATIC

# MAPLST1617-030CF

LDMOS RF Line Power FET Transistor  
30 W , 1600-1700 MHz, 28V

Discontinued  
(For Reference Only)

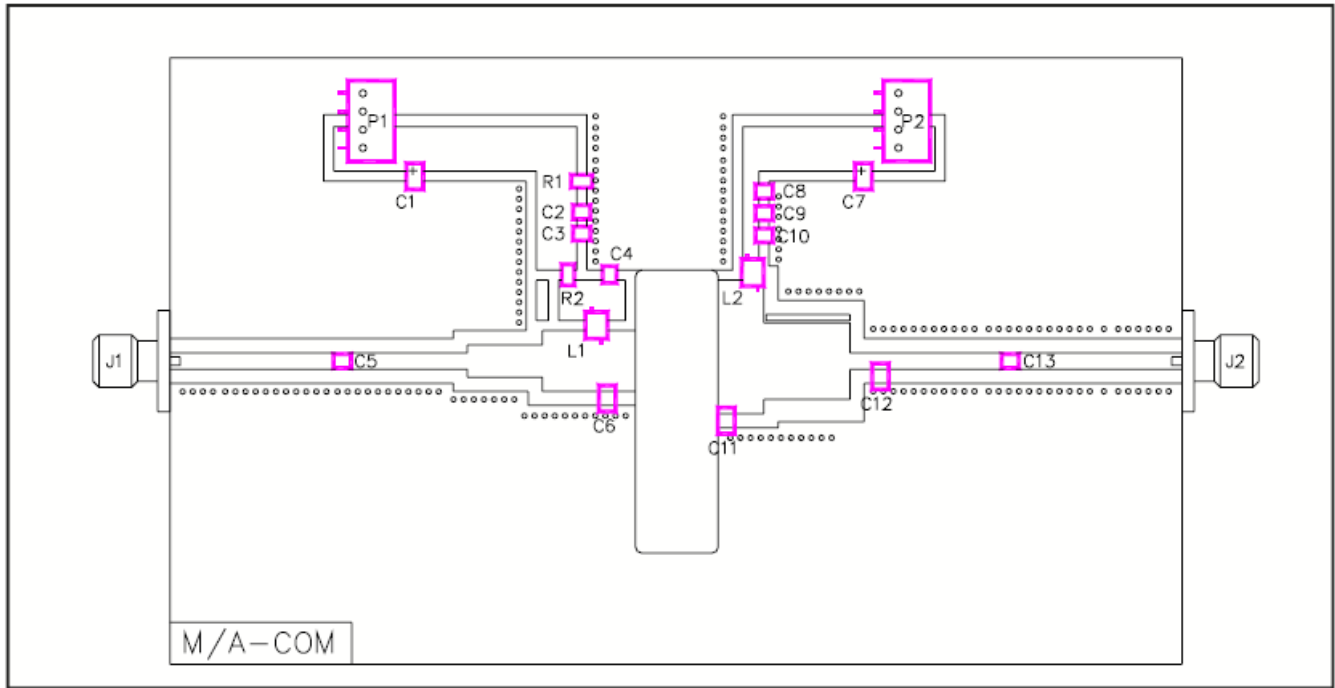
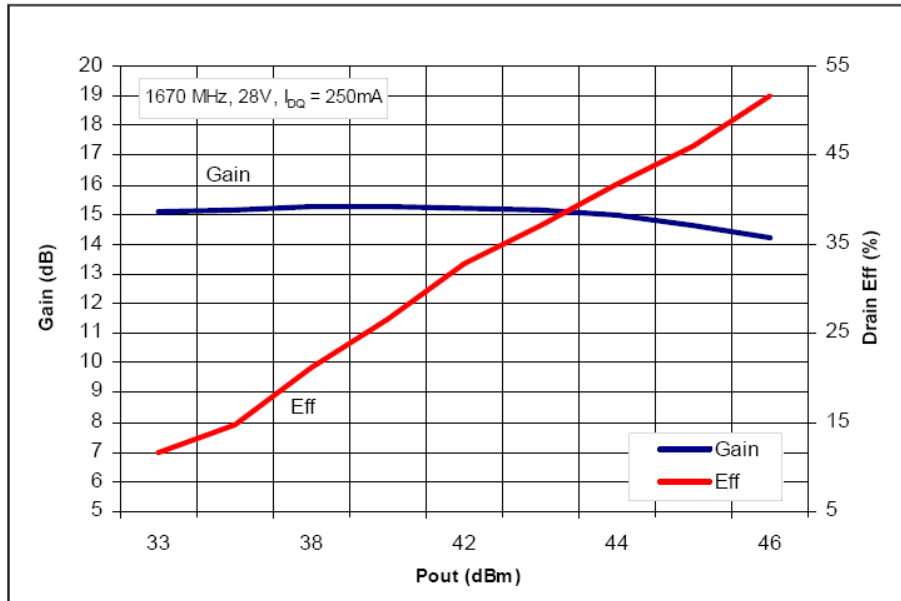
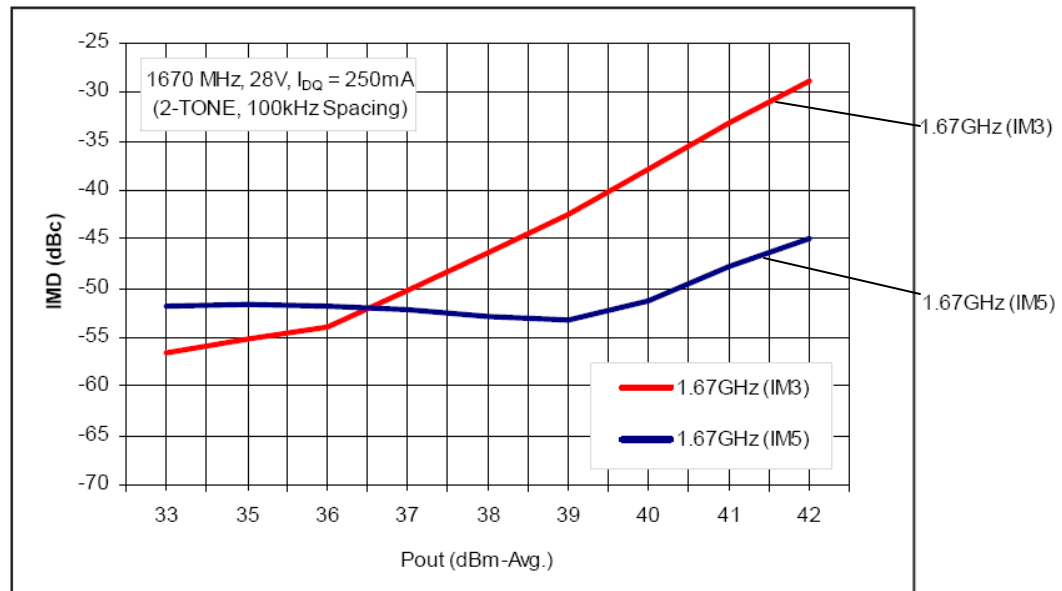


FIGURE 2. 1620—1670 MHz TEST FIXTURE COMPONENT LAYOUT



GRAPH 1. CW: GAIN AND EFFICIENCY VS. OUTPUT POWER



GRAPH 2. TWO TONE: INTERMODULATION DISTORTION VS. OUTPUT POWER

# MAPLST1617-030CF

LDMOS RF Line Power FET Transistor  
 30 W , 1600-1700 MHz, 28V

Discontinued  
 (For Reference Only)

## PACKAGE DIMENSIONS

