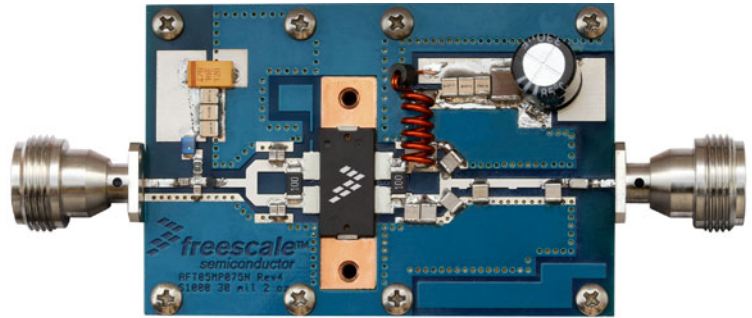


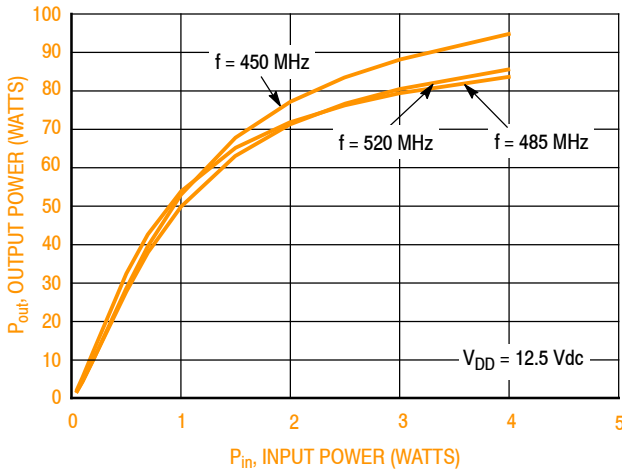
AFT05MP075N — 450–520 MHz Mobile Radio

Reference Design Characteristics

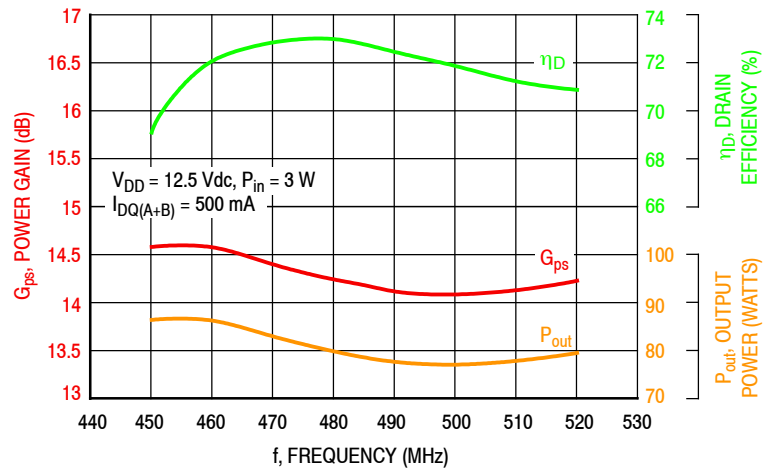
- Designed for mobile two-way radio applications
- Frequency band: 450–520 MHz
- Typical performance @ 12.5 V
 - Output power: 75 W
 - Gain: 14 dB
 - Drain efficiency (Min): 69%
- Extreme ruggedness
 - > 65:1 VSWR capable at 3 dB overdrive



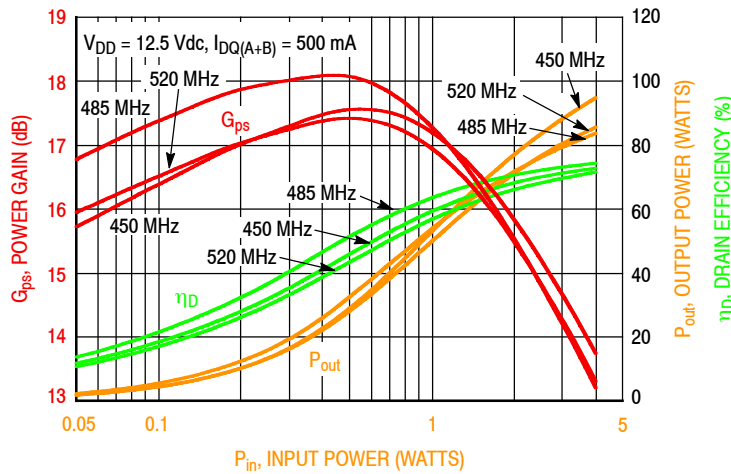
PCB actual size: 2" x 3" (5 cm x 7 cm)



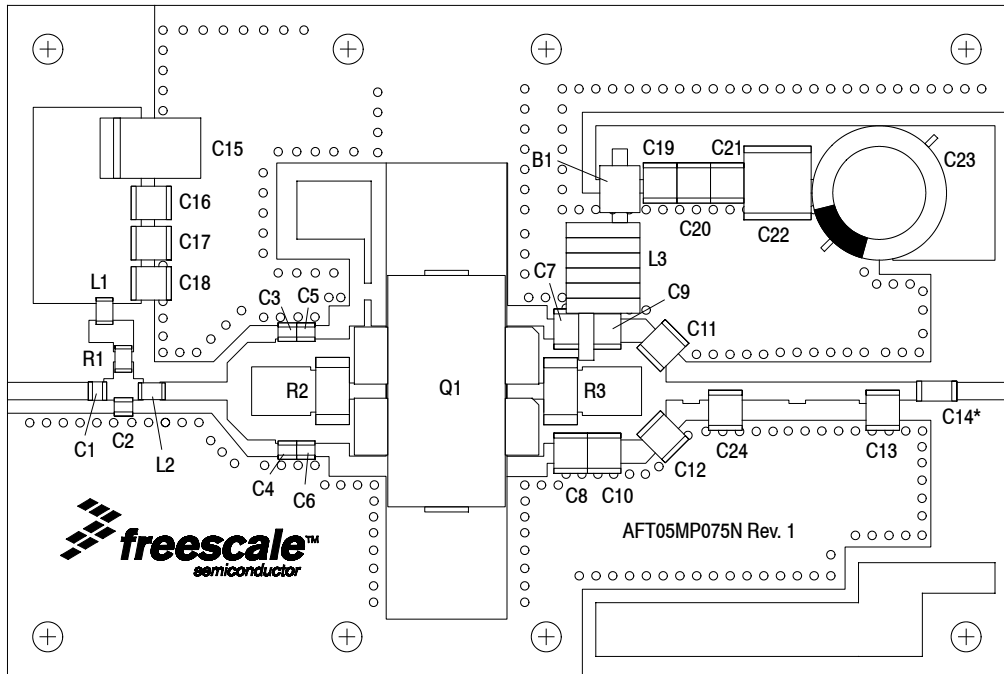
P_{out} versus P_{in}



Gain, Eff. and P_{out} versus Frequency



Gain, P_{out} and Eff. versus P_{in} and Frequency



*C14 is mounted vertically.

Reference Circuit Layout

Reference Circuit Component Designations and Values

Part	Description	Part Number	Manufacturer
B1	Ferrite Bead	2661000101	Fair-Rite
C1, C3, C4	10 pF Chip Capacitors	ATC600F100JT250XT	ATC
C2	15 pF Chip Capacitor	ATC600F150JT250XT	ATC
C5, C6	56 pF Chip Capacitors	ATC600F560JT250XT	ATC
C7, C8	33 pF Chip Capacitors	ATC800B330JT500XT	ATC
C9, C10	30 pF Chip Capacitors	ATC800B300JT500XT	ATC
C11, C12	5.6 pF Chip Capacitors	ATC800B5R6CT500XT	ATC
C13	16 pF Chip Capacitor	ATC800B160JT500XT	ATC
C14	100 pF Chip Capacitor	ATC800B101JT500XT	ATC
C15	47 μ F, 16 V Tantalum Capacitor	T491D476K016AT	Kemet
C16, C21	1000 pF Chip Capacitors	ATC100B102JT50XT	ATC
C17, C20	200 pF Chip Capacitors	ATC100B201JT300XT	ATC
C18, C19	100 pF Chip Capacitors	ATC100B101JT500XT	ATC
C22	10 μ F Chip Capacitor	GRM55DR61H106KA88L	Murata
C23	330 μ F, 35 V Electrolytic Capacitor	MCGPR35V337M10X16-RH	Multicomp
C24	1.5 pF Chip Capacitor	ATC800B1R5CT500XT	ATC
L1	120 nH Chip Inductor	0805CS-121X-LB	CoilCraft
L2	2.55 nH, 3 Turn Inductor	0906-3JLC	CoilCraft
L3	6 Turns, #22 AWG, 0.125" ID	8075 Copper Magnetic Wire	Beldon
Q1	RF Power LDMOS Transistor	AFT05MP075NR1	Freescale
R1	180 Ω , 1/10 W Chip Resistor	RR1220P-181-B-T5	Vishay
R2, R3	10 Ω , 3/4 W Chip Resistors	CRCW201010R0FKEF	Vishay
PCB	Shengyi S1000-2, FR4, 0.030", $\epsilon_r = 4.8$	—	MTL

Available at: <http://freescale.com/AFT05MP075N>