

PRELIMINARY DATA SHEET



NEC's 2.4 GHz Si LD MOS POWER AMPLIFIER

UPD5702TU

FEATURES

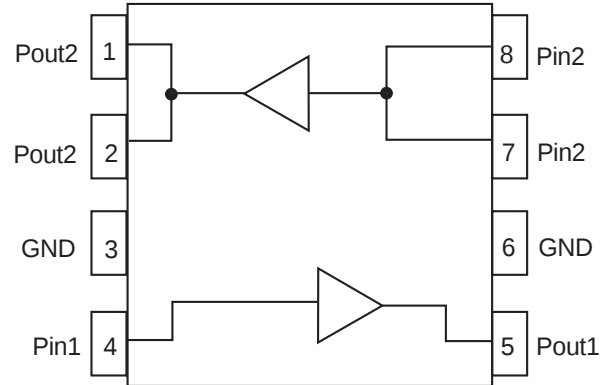
- **MEDIUM OUTPUT POWER:**
P_{OUT} = +21 dBm TYP @P_{IN} = -2 dBm, f = 2.45 GHz
- **ON CHIP OUTPUT POWER CONTROL FUNCTION**
- **SINGLE SUPPLY VOLTAGE:**
V_{DS} = 3.0 V TYP
- **PACKAGED IN 8 PIN L2MM (2.0 X 2.2 X 0.5mm)**
SUITABLE FOR HIGH- DENSITY SURFACE MOUNT

DESCRIPTION

NEC's UPD5702TU is a silicon LD MOS IC designed for use as a power amplifier up to 2.4 GHz application. This IC consists of two stage amplifiers. The device is packaged in a low cost, surface mount 8 pin L2MM (Leadless Mini Mold) plastic package. Ideally suited for high density surface mount designs.

NEC's stringent quality assurance and test procedures ensure the highest reliability and performance.

INTERNAL BLOCK DIAGRAM



APPLICATIONS

- **1.9 GHZ Application Ex. PHS etc.**
- **2.4 GHz application Ex. Bluetooth, Wireless LAN, etc.**
- **General purpose medium power AGC amplifier**

ELECTRICAL CHARACTERISTICS (T_A = 25°C, V_{DS} = 3.0 V, f = 1.9 GHz, unless otherwise specified)

PART NUMBER			UPD5702TU		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
I _{DS}	Circuit Current, P _{IN} = -5 dBm, P _{OUT} = +20.5 dBm	mA		150	
V _{GS}	Gate Bias Voltage, P _{IN} = -5 dBm, P _{OUT} = +20.5 dBm	V		2.0	
P _{OUT}	Output Power, P _{IN} = -5 dBm	dBm	20.5		
PAE	Power Added Efficiency, P _{IN} = -5 dBm, P _{OUT} = +20.5 dBm	%		27	
Padj1	Adjacent Channel Power 1, P _{IN} = -5 dBm, P _{OUT} = +20.5 dBm	dBc		-61	
Padj2	Adjacent Channel Power 2, P _{IN} = -5 dBm, P _{OUT} = +20.5 dBm	dBc		-76	
IRL	Input Return Loss, P _{IN} = -20 dBm	dB		10	
ORL	Output Return Loss, P _{IN} = -20 dBm	dB		10	
ISOL	Isolation, P _{IN} = -20 dBm	dB		45	
OBW	Occupied Bandwidth, P _{IN} = -5 dBm, P _{OUT} = +20.5 dBm	dB		TBD	

ABSOLUTE MAXIMUM RATINGS¹

(T_A = 25°C unless otherwise specified)

SYMBOLS	PARAMETERS	UNITS	RATINGS
V _{DS}	Supply Voltage 1	V	6.0
V _{GS}	Supply Voltage 2	V	6.0
P _D	Power Dissipation ²	W	0.866
T _A	Operating Ambient Temp.	°C	-40 to +85
T _{STG}	Storage Temp. Range	°C	-65 to +150
P _{IN(MAX)}	Maximum Input Level	dBm	+10
T _J	Junction Temperature	°C	+150

Notes:

- 1. Operation in excess of any one of these conditions may result in permanent damage.
- 2. T_A = 25°C, mounted on 330 x 21 mm epoxy glass PWB.

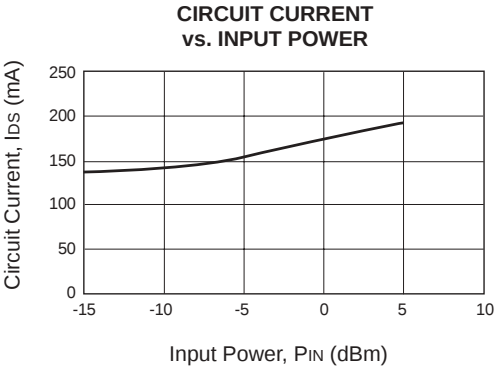
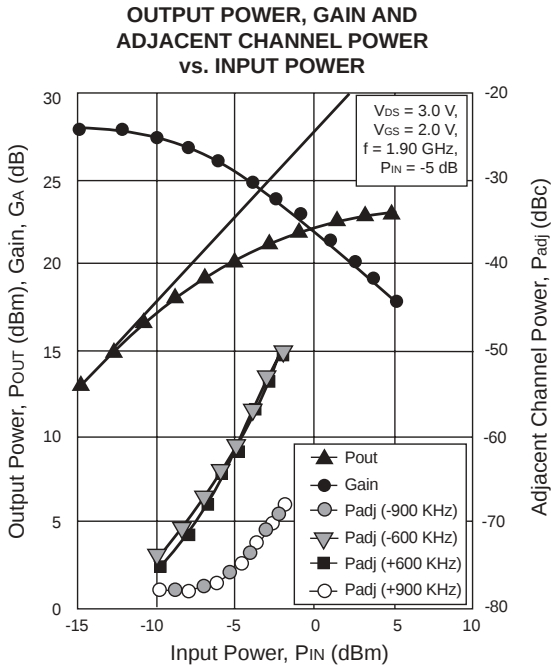
RECOMMENDED
OPERATING CONDITIONS

SYMBOLS	PARAMETERS	UNITS	MIN	TYP	MAX
V _{DS}	Supply Voltage 1	V	2.7	3.0	3.6
V _{GS}	Supply Voltage 2	V	0.0	0.2	—
P _{IN}	Maximum Input Power	dBm	—	+5	—
I _D	Drain Current	mA	—	165	—

ORDERING INFORMATION

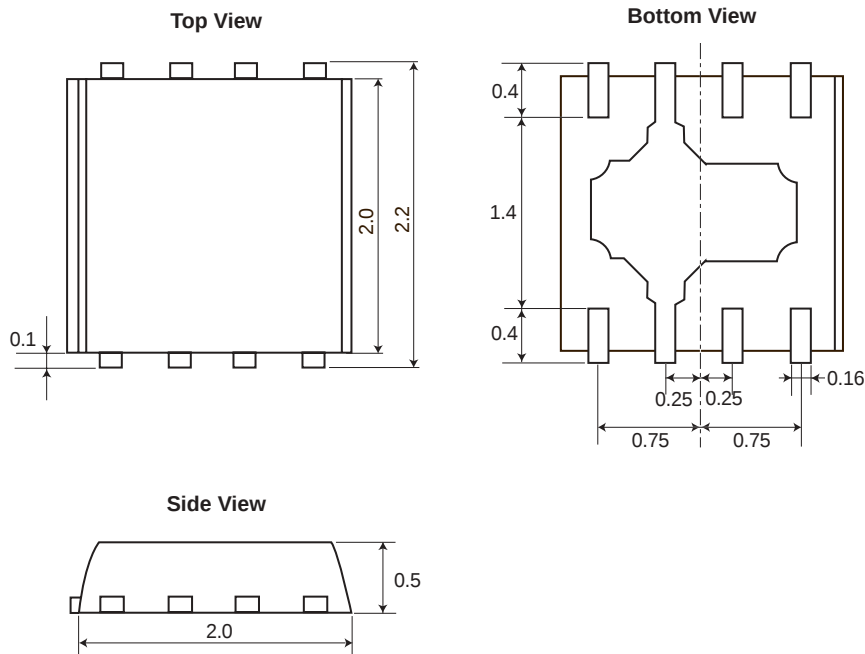
PART NUMBER	QUANTITY
UPD5702TU-E2	TBD

TYPICAL PERFORMANCE CURVES (T_A = 25°C, f = 1.9 GHz, V_{GS} = 2.0 V unless otherwise specified)



PACKAGE DIMENSIONS (Units in mm)

PACKAGE OUTLINE TU



Life Support Applications

These NEC products are not intended for use in life support devices, appliances, or systems where the malfunction of these products can reasonably be expected to result in personal injury. The customers of CEL using or selling these products for use in such applications do so at their own risk and agree to fully indemnify CEL for all damages resulting from such improper use or sale.

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