2.7 GHz SILICON MIMIC WIDE BAND AMPLIFIER

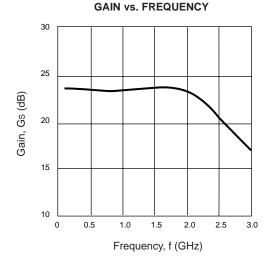
UPC2776T

FEATURES

- WIDE FREQUENCY RESPONSE: 2.7 GHz
- FLAT GAIN RESPONSE: ±1.0 dB

NEC

- HIGH GAIN: 23 dB
- MEDIUM OUTPUT POWER: PldB: 6.0 dBm @ 1.0 GHz
- 5 V SINGLE SUPPLY VOLTAGE
- SMALL SURFACE MOUNT PACKAGE : T06
- TAPE AND REEL PACKAGING AVAILABLE



DESCRIPTION AND APPLICATIONS

The UPC2776T is a Silicon Monolithic integrated circuit manufactured using the NESAT III process. This device is suitable for wide band IF blocks due to its high gain and flat response. The UPC2776T is designed as a low cost IC gain stage in DBS, TVRO, PCS, WLAN and other communication receivers.

ELECTRICAL CHARACTERISTICS (Vcc = 5.0 V, TA = 25 °C, ZIN = ZOUT = 50Ω)

PART NUMBER PACKAGE OUTLINE				UPC2776T TO6	
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	ТҮР	MAX
lcc	Circuit Current (no signal)	mA	18	25	33
Gs	Small Signal Gain, f = 1 GHz	dB	21	23	26
fu	Upper Limit Operating Frequency (The gain at fu is 3 dB down from the gain at 0.1 GHz)	GHz	2.3	2.7	
∆Gs	Gain Flatness, f = 0.1 ~ 2.0 GHz	dB		±1.0	
P1dB	Output Power at 1 dB Compression f = 1 GHz	dBm	+4	+6.0	
NF	Noise Figure, f = 1 GHz	dB		6.0	7.5
RLIN	Input Return Loss, f = 1 GHz	dB	4.5	7.5	
RLout	Output return Loss, f = 1 GHz	dB	15	20	
ISOL	Isolation, f = 1 GHz	dB	27	32	
PSAT	Saturated Output Power, f = 1 GHz	dBm		8.5	
IМз	$ \begin{array}{l} \mbox{3rd Order Intermodulation Distortion, f = 1 GHz } \\ \mbox{Po = 0 dBm each tone, f1 = 1000 MHz, f2 = 1002 MHz } \end{array} $	dBc		-30	
Rтн	Thermal Resistance (Junction to Ambient)	°C/W			200

California Eastern Laboratories

ABSOLUTE MAXIMUM RATINGS¹ (TA = 25°C)

SYMBOLS	PARAMETERS	UNITS	RATINGS
Vcc	Supply Voltage	V	6
Icc	Total Circuit Current	mA	60
Pin	Input Power	dBm	+10
Рт	Power Dissipation ²	mW	280
Тор	Operating Temperature	°C	-40 to +85
Тѕтс	Storage Temperature	°C	-55 to +150

Notes:

1. Operation in excess of any one of these parameters may result in permanent damage.

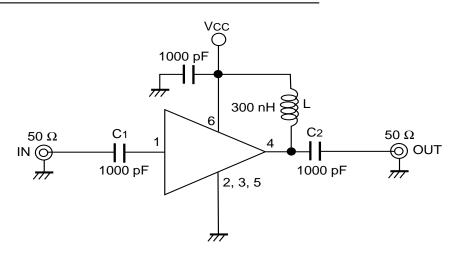
2. Mounted on 50 x 50 x 1.6 mm epoxy glass PWB (TA = +85 $^{\circ}$ C)

RECOMMENDED OPERATING CONDITIONS

SYMBOL	PARAMETER	UNITS	MIN	ТҮР	MAX
Vcc	Supply Voltage	V	4.5	5.0	5.5

PIN FUNCTIONS APPLIED SYMBOL PIN VOLTAGE DESCRIPTION EQUIVALENT CIRCUIT (v) 1 INPUT RF signal input pin. An internal matching circuit, 6 configured with resistors, improves match to 50 Ω (4) over a wide band. A multi-feedback circuit is incorporated to minimize variations in hFE and resistance values. GND 0 2 Ground pin. Form the ground pattern as large as 3 possible to minimize ground impedance. 5 ≶ OUTPUT 4 4.5 - 5.5 RF signal output pin. Connect an inductor between this pin and Vcc to supply current to the internal output transistors. @ @ 6 6 Vcc Power supply pin. This pin biases the internal input transistor.

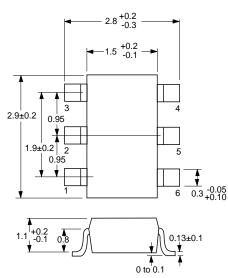
TEST CIRCUIT



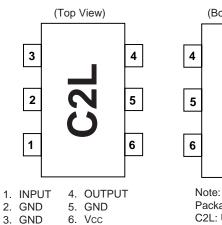
Downloaded from Elcodis.com electronic components distributor

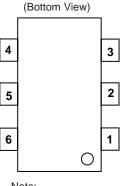
OUTLINE DIMENSIONS (Units in mm)

UPC2776T PACKAGE OUTLINE T06



LEAD CONNECTIONS





Package Markings C2L: UPC2776T

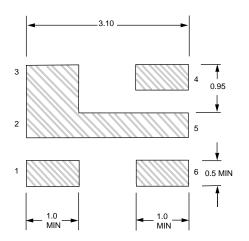
Note:

All dimensions are typical unless otherwise specified.

ORDERING INFORMATION

PART NUMBER	QTY
UPC2776T-E3	3K/Reel

RECOMMENDED P.C.B. LAYOUT (Units in mm)



EXCLUSIVE NORTH AMERICAN AGENT FOR **NEC** RF, MICROWAVE & OPTOELECTRONIC SEMICONDUCTORS CALIFORNIA EASTERN LABORATORIES • Headquarters • 4590 Patrick Henry Drive • Santa Clara, CA 95054-1817 • (408) 988-3500 • Telex 34-6393 • FAX (408) 988-0279 24-Hour Fax-On-Demand: 800-390-3232 (U.S. and Canada only) • Internet: http://WWW_CEL.COM

DATA SUBJECT TO CHANGE WITHOUT NOTICE

PRINTED IN USA ON RECYCLED PAPER - 1/96