



STM376-2

RF POWER MODULE WIRELESS LOCAL LOOP APPLICATIONS

PRELIMINARY DATA

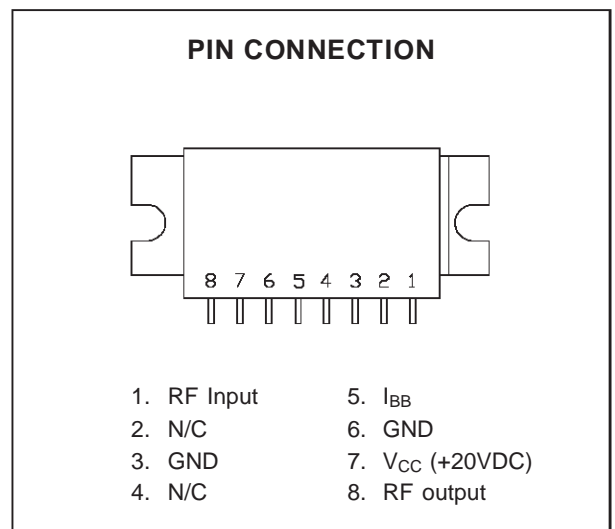
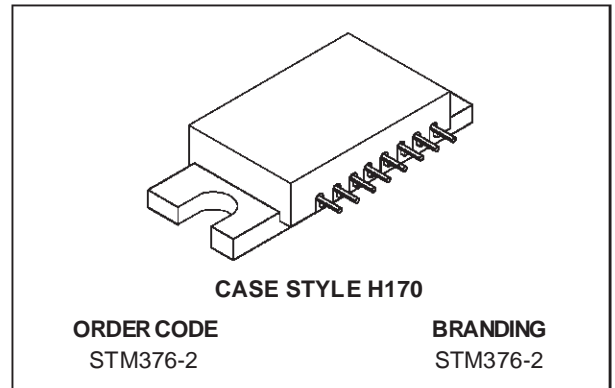
- LINEAR POWER AMPLIFIER
- 350-376 MHz
- 20 VOLTS
- INPUT/OUTPUT 50 OHMS
- $P_{OUT} = 1.0 W_{AVG}$ (2.0 W PEP)
- GAIN = 21 dB

DESCRIPTION

The STM376-2 module is designed to be used as a linear RF Power Amplifier for WLL or other fixed radio access subscriber applications. This particular model is one of several in design covering the 300-500 MHz frequency range in individual bandwidths of 25 MHz each.

Band splits and corresponding part numbers for all bands are as follows:

STM326-2	300-326 MHz	
STM351-2	325-351 MHz	PROTOTYPES
STM376-2	350-376 MHz	AVAILABLE
STM401-2	375-401 MHz	
STM426-2	400-426 MHz	
STM451-2	425-451 MHz	
STM476-2	450-476 MHz	
STM500-2	475-500 MHz	



ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$)

Symbol	Parameter	Value	Unit
V_{CC}	DC Supply Voltage	+21	Vdc
$I_{CC(q)}$	Quiescent Current (pin 7)	200	mAdc
I_{CC}	Operating Current (pin 7)	500	mAdc
P_{IN}	RF Input Power	30	mW
P_{OUT}	RF Output Power	2.0	W_{AVG}
T_{STG}	Storage Temperature	-30 to +100	$^{\circ}C$
T_C	Operating Case Temperature	- 20 to +60	$^{\circ}C$

ELECTRICAL SPECIFICATIONS ($T_{\text{case}} = 30^{\circ}\text{C}$, $V_{\text{CC}} = 20.0\text{Vdc}$, $V_{\text{BB}} = 8.8\text{Vdc}$)

Symbol	Parameter	Test Conditions	Value			Unit
			Min.	Typ.	Max.	
BW	Frequency Range		350	—	376	MHz
G_P	Power Gain	$P_{\text{OUT}} = 1.0\text{ W}^*$	21	23	25	dB
η	Efficiency	$P_{\text{OUT}} = 1.0\text{ W}^*$	11	12.5	—	%
—	Input VSWR	$P_{\text{OUT}} = 1.0\text{ W}^*$ $Z_S, Z_L = 50\Omega$	—	—	1.5:1	VSWR
$I_{\text{CC}(q)}$	Quiescent Current	$P_{\text{IN}} = 0\text{ W}$	110	120	130	mA
I_{CC}	Collector Supply Current	$P_{\text{OUT}} = 1.0\text{ W}^*$	—	375	425	mA
I_{BB}	Bias Current	$P_{\text{OUT}} = 1.0\text{ W}^*$	—	65	—	mA
H	Harmonics	$P_{\text{OUT}} = 1.0\text{ W}^*$ $F = 350\text{ MHz}$	—	-34	-30	dBc
IMD	Intermodulation Distortion	$P_{\text{OUT}} = 1.0\text{ W}^*$		-46	-40	dBc
—	Load Mismatch	Load VSWR = ∞ :1 (All phase angles) $P_{\text{OUT}} = 1.0\text{ W}^*$	No Degradation in Output Power after Load Restoration			
—	Stability	Load VSWR = 5:1 (All phase angles) $P_{\text{OUT}} = 1.0\text{ W}^*$	All Spurious outputs more than 50dB below carrier			

* 2 Tone Test, 50 KHz spacing: $P_{\text{OUT}} = 1.0\text{ W}_{\text{AVG}}$ ($2.0\text{ W}_{\text{PEP}}$)

MODULE DC AND TEST FIXTURE CONFIGURATION