



# STM351-2

## RF POWER MODULE WIRELESS LOCAL LOOP APPLICATIONS

PRELIMINARY DATA

- LINEAR POWER AMPLIFIER
- 325-351 MHz
- 20 VOLTS
- INPUT/OUTPUT 50 OHMS
- $P_{OUT} = 1.0 W_{AVG}$  (2.0 W PEP)
- GAIN = 21 dB

### DESCRIPTION

The STM351-2 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

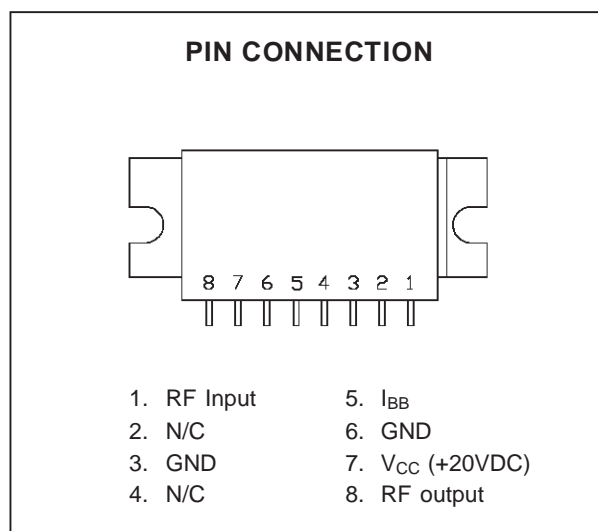
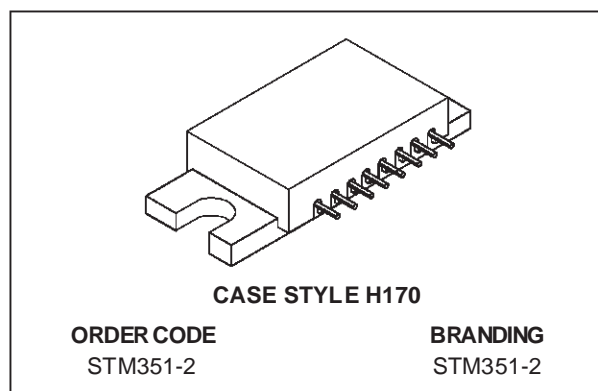
STM401-2    375-401 MHz

STM426-2    400-426 MHz

STM451-2    425-451 MHz

STM476-2    450-476 MHz

STM500-2    475-500 MHz



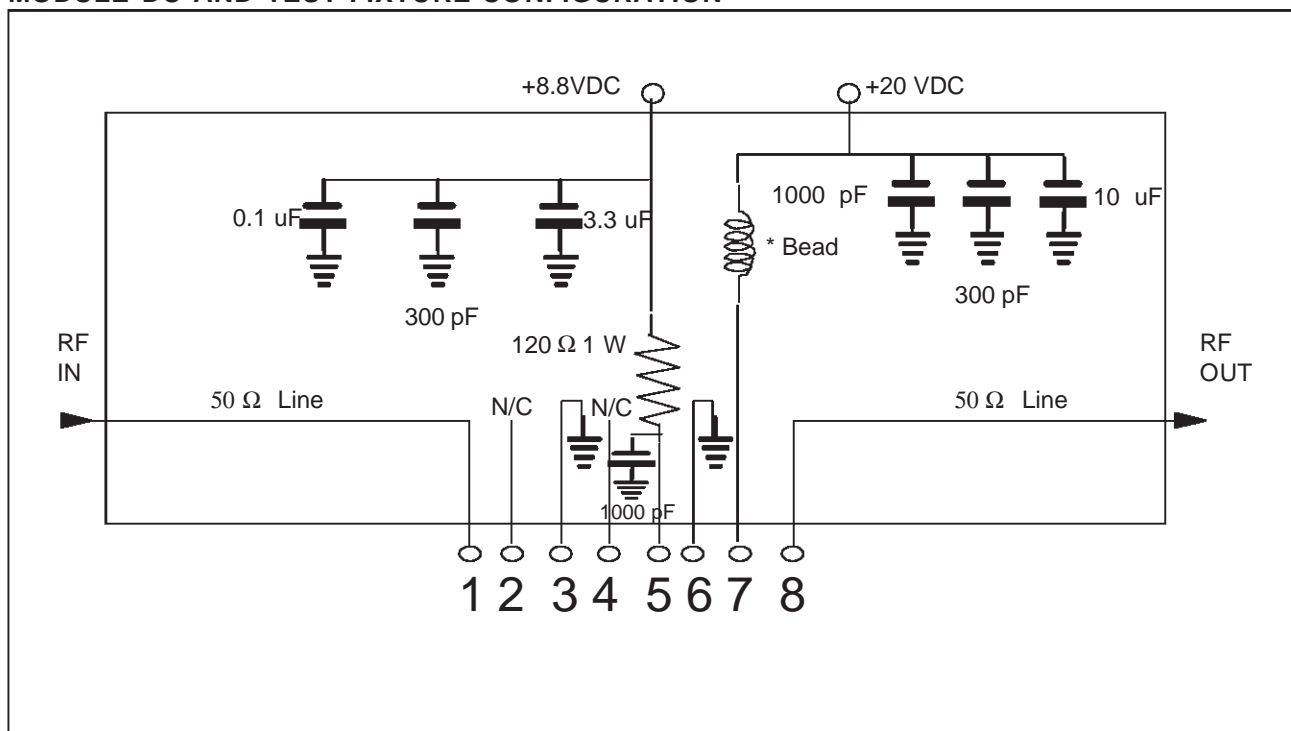
### ABSOLUTE MAXIMUM RATINGS ( $T_{case} = 25^{\circ}C$ )

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

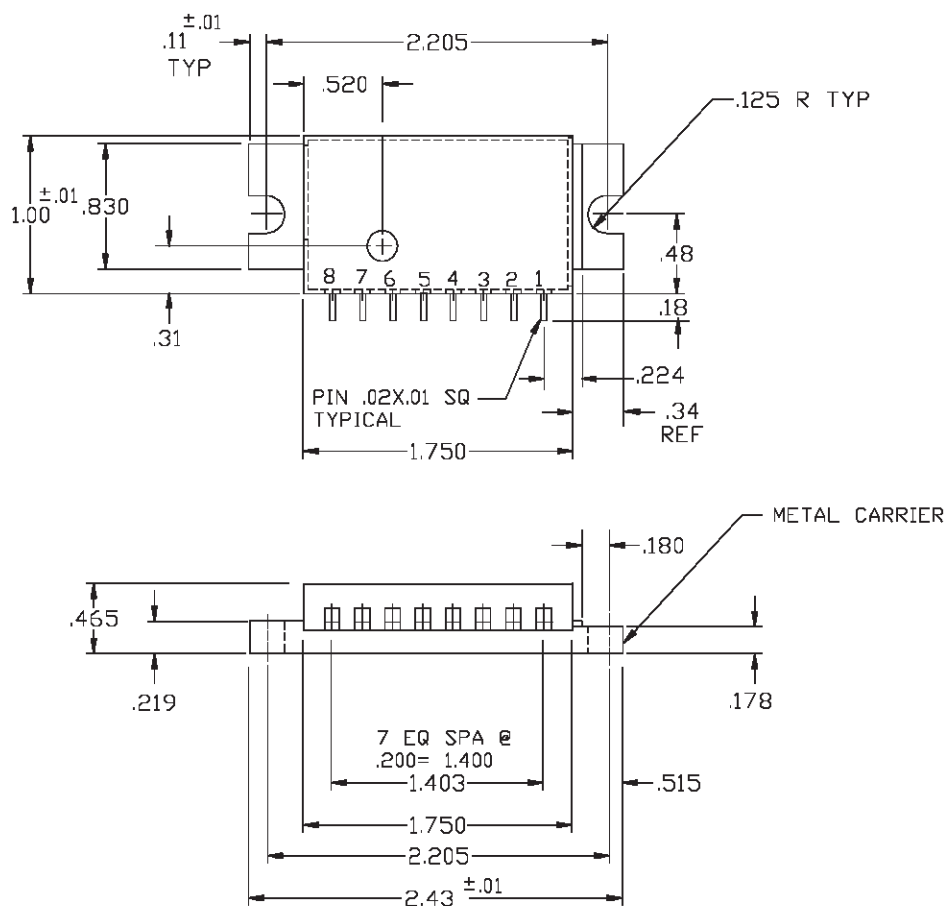
Symbol	Parameter	Test Conditions	Value			Unit
			Min.	Typ.	Max.	
BW	Frequency Range		325	—	351	MHz
$G_P$	Power Gain	$P_{\text{OUT}} = 1.0\text{ W}^*$	21	23	25	dB
$\eta$	Efficiency	$P_{\text{OUT}} = 1.0\text{ W}^*$	11	12.5	—	%
—	Input VSWR	$P_{\text{OUT}} = 1.0\text{ W}^*$ $Z_S, Z_L = 50\Omega$	—	—	1.5:1	VSWR
$I_{\text{CC}(q)}$	Quiescent Current	$P_{\text{IN}} = 0\text{ W}$	110	120	130	mA
$I_{\text{CC}}$	Collector Supply Current	$P_{\text{OUT}} = 1.0\text{ W}^*$	—	375	425	mA
$I_{\text{BB}}$	Bias Current	$P_{\text{OUT}} = 1.0\text{ W}^*$	—	65	—	mA
H	Harmonics	$P_{\text{OUT}} = 1.0\text{ W}^*$ $F = 325\text{ MHz}$	—	-34	-30	dBc
IMD	Intermodulation Distortion	$P_{\text{OUT}} = 1.0\text{ W}^*$		-46	-40	dBc
—	Load Mismatch	Load VSWR = $\infty$ :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**

## PACKAGE MECHANICAL DATA

Ref.: UDCS No. 1021374 rev. A



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