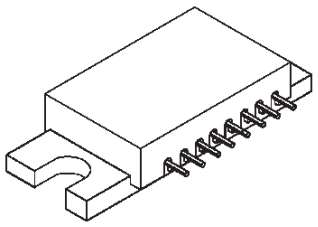
# STM351-2

## 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



**CASE STYLE H170**

| ORDER CODE | BRANDING |
|---|---|
| STM351-2 | STM351-2 |

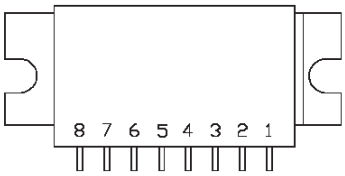
### DESCRIPTION

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 | |

### PIN CONNECTION




1. RF Input
2. N/C
3. GND
4. N/C
5. $I_{BB}$
6. GND
7. $V_{CC}$ (+20VDC)
8. RF output

### ABSOLUTE MAXIMUM RATINGS ($T_{case}$ =25°C)

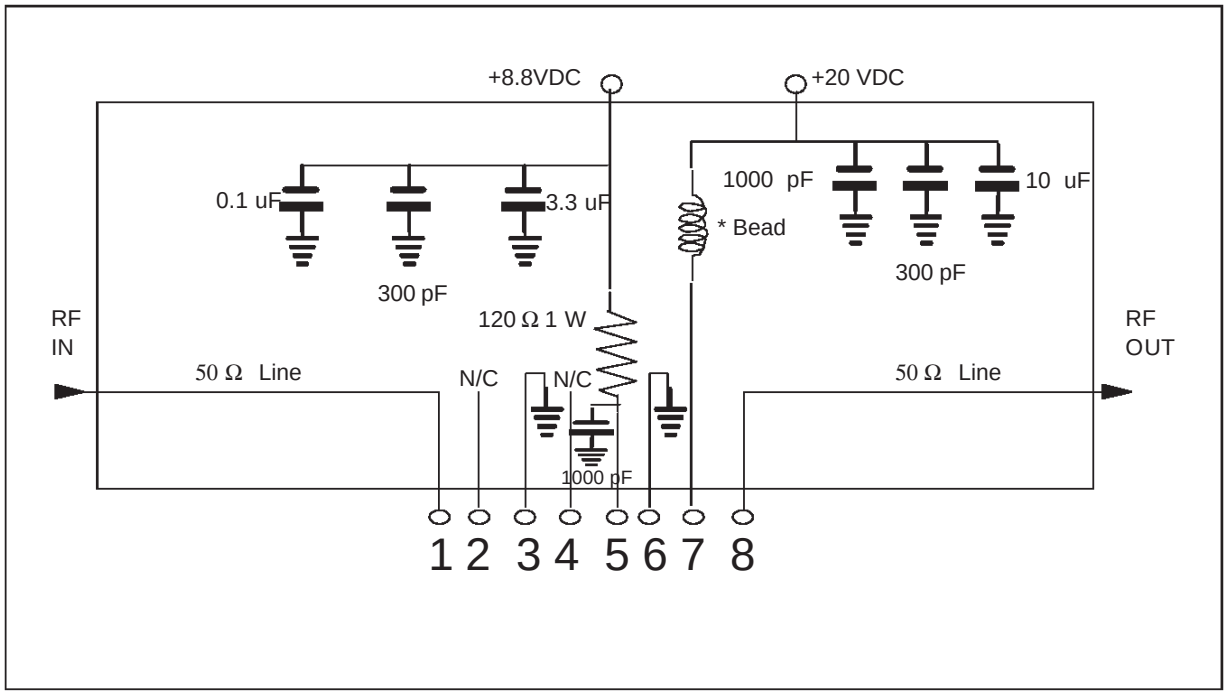
| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $V_{CC}$ | DC Supply Voltage | +21 | Vdc |
| $I_{CC(q)}$ | Quiescent Current (pin 7) | 200 | mAdc |
| $I_{CC}$ | Operating Current (pin 7) | 500 | mAdc |
| $P_{IN}$ | RF Input Power | 30 | mW |
| $P_{OUT}$ | RF Output Power | 2.0 | $W_{AVG}$ |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

## ELECTRICAL SPECIFICATIONS ($T_{case}$ = 30°C, $V_{CC}$ = 20.0Vdc, $V_{BB}$ = 8.8 Vdc)

| Symbol | Parameter | Test Conditions | Value | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | |
| BW | Frequency Range | | 325 | — | 351 | MHz |
| $G_P$ | Power Gain | $P_{OUT}$ = 1.0 W* | 21 | 23 | 25 | dB |
| η | Efficiency | $P_{OUT}$ = 1.0 W* | 11 | 12.5 | — | % |
| — | Input VSWR | $P_{OUT}$ = 1.0 W* $Z_S$, $Z_L$ = 50Ω | — | — | 1.5:1 | VSWR |
| $I_{CC(q)}$ | Quiescent Current | $P_{IN}$ = 0 W | 110 | 120 | 130 | mA |
| $I_{CC}$ | Collector Supply Current | $P_{OUT}$ = 1.0 W* | — | 375 | 425 | mA |
| $I_{BB}$ | Bias Current | $P_{OUT}$ = 1.0 W* | — | 65 | — | mA |
| H | Harmonics | $P_{OUT}$ = 1.0 W* F = 325 MHz | — | -34 | -30 | dBc |
| IMD | Intermodulation Distortion | $P_{OUT}$ = 1.0 W* | | -46 | -40 | dBc |
| — | Load Mismatch | Load VSWR = ∞:1 (All phase angles) $P_{OUT}$ = 1.0 W* | No Degradation in Output Power after Load Restoration | | | |
| — | Stability | Load VSWR = 5:1 (All phase angles) $P_{OUT}$ = 1.0 W* | All Spurious outputs more than 50dB below carrier | | | |

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

## MODULE DC AND TEST FIXTURE CONFIGURATION



## PACKAGE MECHANICAL DATA

Ref.: UDCS No. 1021374 rev. A