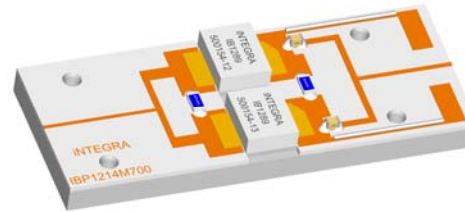


L-Band Radar Pallet

Part number IBP1214M700 is a 50 Ω matched high power pulsed radar pallet amplifier for L-Band radar systems operating over the instantaneous bandwidth of 1210-1400 MHz. The pallet amplifier supplies a minimum of 700 watts of peak pulse power under the conditions of 150 μ s pulse width and 10% duty cycle. All units are 100% screened for large signal RF parameters.



Silicon Bipolar

- Ultra-high f_T

Class C Operation

- High Efficiency

Common Base Configuration

- Single Power Supply

Gold Metal

- Maximum Reliability

Emitter Ballasting

- Optimum Thermal Distribution

Impedance Matched to 50 Ω

- Ease of Use

Pallet Carrier

- Nickel Plated Copper Carrier

Maintained

- 100% Device RF Screening
- No External Tuning Allowed

TYPICAL DATA

TYPICAL DATA

TYPICAL DATA

TYPICAL DATA

| Device | Freq (MHz) | V _{CC} (V) | P _{IN} (W) | IRL (dB) | P _{OUT} (W) | G _P (dB) | I _C (A) | η_c (%) | Droop (dB) |
|---------|------------|---------------------|---------------------|----------|----------------------|---------------------|--------------------|--------------|------------|
| D4615-1 | 1210 | 42 | 100.0 | 17.0 | 792.2 | 8.99 | 38.50 | 48.99 | -0.05 |
| | 1300 | 42 | 100.0 | 11.2 | 780.7 | 8.93 | 37.50 | 49.57 | -0.05 |
| | 1400 | 42 | 100.0 | 16.4 | 723.3 | 8.59 | 34.70 | 49.63 | -0.13 |

Pulse Format = 150us, 10%

MAXIMUM RATINGS

| Screen | Parameter | Symbol | Min | Max | Units | Test Conditions |
|--------|--|-----------|-----|------|-------|-----------------|
| BD | Collector-Emitter Voltage | V_{CES} | -- | 85 | V | -- |
| BD | Emitter-Base Voltage | V_{EBO} | -- | 3 | V | -- |
| BD | Storage Temperature Range | T_{STG} | -40 | +150 | °C | -- |
| BD | Operating Junction Temperature Range | T_J | -40 | +200 | °C | -- |
| Note | Screen 'BD' = parameter qualified By Design. | | | | | |

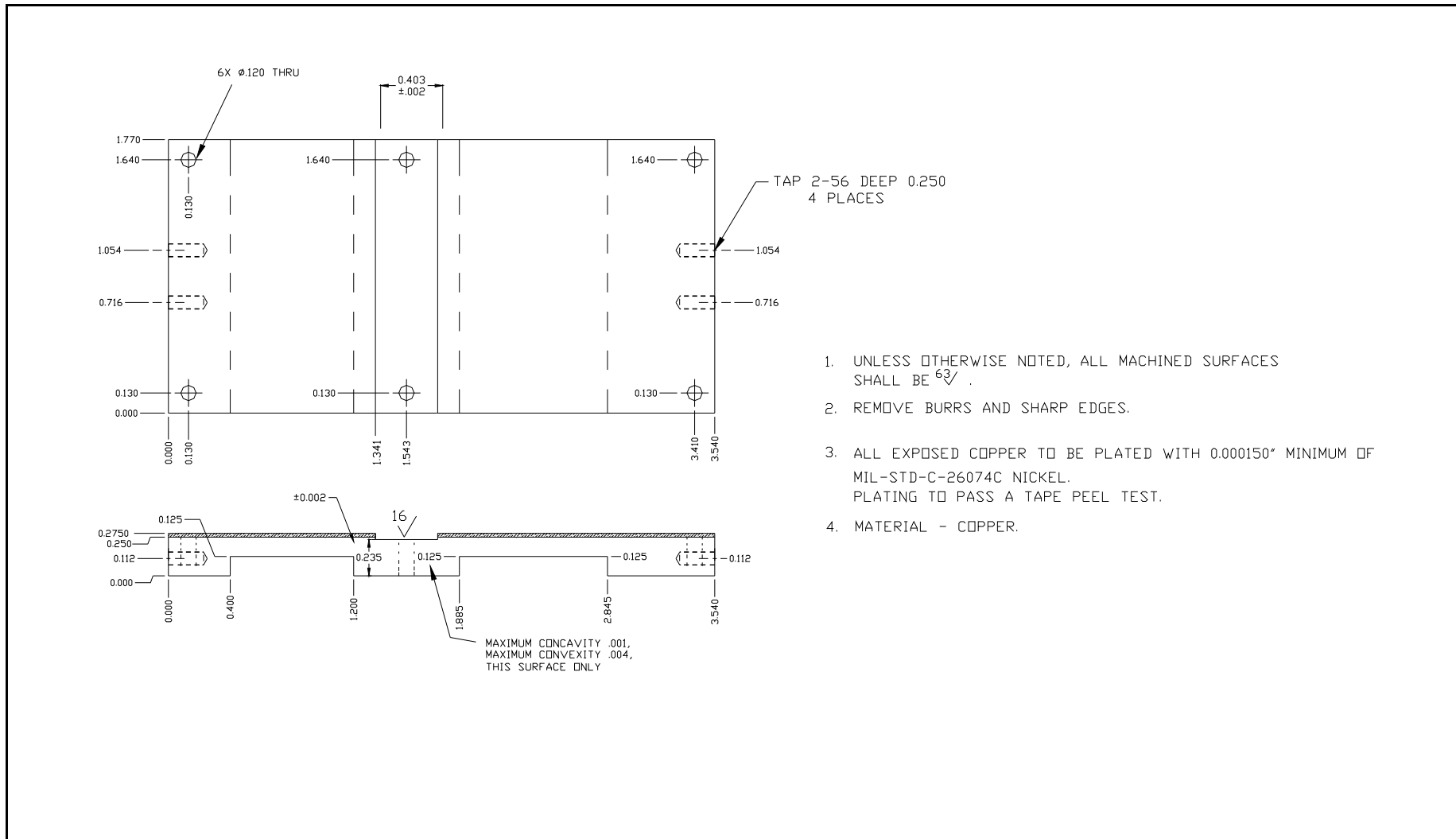
THERMAL CHARACTERISTICS

| Screen | Parameter | Symbol | Min | Max | Units | Test Conditions |
|--------|--|--------------|-----|-----|-------|---|
| BD | Thermal Resistance | $R_{TH(JC)}$ | -- | TBD | °C/W | $V_{CC}=42V$, Pulse format=150 μ s, 10%, $T_F=25\pm 5^\circ C$. |
| Note | Screen 'BD' = parameter qualified By Design. | | | | | |

RF ELECTRICAL CHARACTERISTICS

| Screen | Parameter | Symbol | Min | Max | Units | Test Conditions |
|--------|---|-------------|-------|-----|-------|--|
| 100% | Input Return Loss | IRL | 10 | -- | dB | $V_{CC}=42V$, $P_{IN}=100W$, Pulse = Note 2, $T_F=25\pm 5^\circ C$, F=F1, F2, F3. |
| 100% | Output Power | P_{OUT} | 700 | -- | W | $V_{CC}=42V$, $P_{IN}=100W$, Pulse = Note 2, $T_F=25\pm 5^\circ C$, F=F1, F2, F3. |
| 100% | Power Gain | G_P | 8.45 | -- | dB | $V_{CC}=42V$, $P_{IN}=100W$, Pulse = Note 2, $T_F=25\pm 5^\circ C$, F=F1, F2, F3. |
| 100% | Collector Efficiency ($P_{OUT}/I_C/V_{CC}$) | N_C | 42 | -- | % | $V_{CC}=42V$, $P_{IN}=100W$, Pulse = Note 2, $T_F=25\pm 5^\circ C$, F=F1, F2, F3. |
| 100% | Pulse Amplitude Droop | D | -- | 1 | dB | $V_{CC}=42V$, $P_{IN}=100W$, Pulse = Note 2, $T_F=25\pm 5^\circ C$, F=F1, F2, F3. |
| 100% | Gain Flatness | GF | -- | 1.5 | dB | $V_{CC}=42V$, $P_{IN}=100W$, Pulse = Note 2, $T_F=25\pm 5^\circ C$, F=F1, F2, F3. |
| BD | Delta Insertion Phase Variation | ΔIP | -20 | +20 | deg | $V_{CC}=42V$, $P_{IN}=100W$, Pulse = Note 2, $T_F=25\pm 5^\circ C$, F=F1, F2, F3. |
| 100% | Stability | VSWR-S | 1.5:1 | -- | -- | $V_{CC}=42V$, $P_{IN}=100W$, Pulse = Note 2, $T_F=25\pm 5^\circ C$, F=F1, F2, F3. No oscillatory or pulse break-up characteristics allowed on detected output pulse. |
| 100% | Load Mismatch Tolerance - Ruggedness | LMT | 2:1 | -- | -- | $V_{CC}=42V$, $P_{IN}=100W$, Pulse = Note 2, $T_F=25\pm 5^\circ C$, F=F1, F2, F3. Rotate 2:1 output VSWR through 360° phase. Survival. |
| Note 1 | F1 = 1.21 GHz, F2 = 1.3 GHz, F3 = 1.4 GHz | | | | | |
| Note 2 | Pulse format = 150 μ s, 10% | | | | | |
| Note 3 | T_F = Device flange temperature. | | | | | |
| Note 4 | Screen 'BD' = parameter qualified By Design. | | | | | |

PALLET DIMENSIONAL OUTLINE DRAWING



1. UNLESS OTHERWISE NOTED, ALL MACHINED SURFACES SHALL BE 63 $\sqrt{}$.
2. REMOVE BURRS AND SHARP EDGES.
3. ALL EXPOSED COPPER TO BE PLATED WITH 0.000150" MINIMUM OF MIL-STD-C-26074C NICKEL. PLATING TO PASS A TAPE PEEL TEST.
4. MATERIAL - COPPER.

DEFINITIONS

| Data Sheet Status | |
|--|---|
| Proposed Specification | This data sheet contains proposed specifications. |
| Preliminary Specification | This data sheet contains specifications based on preliminary measurements and data. |
| Product Specification | This data sheet contains final product specifications. |
| Maximum Ratings | |
| Stress above one or more of the maximum ratings may cause permanent damage to the device. These are maximum ratings only and operation of the device at these or at any other conditions above those given in the characteristics sections of the specification is not implied. Exposure to maximum values for extended periods of time may affect device reliability. | |

WARNING

| Product and environmental safety - toxic materials |
|--|
| This product contains beryllium oxide. The product is entirely safe provided that the BeO base is not damaged. All persons who handle, use or dispose of this product should be aware of its nature and of the necessary safety precautions. After use, dispose of as chemical or special waste according to the regulations applying at the location of the user. It must never be thrown out with general or domestic waste. |

DISCLAIMER

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