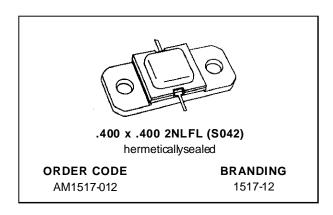


AM1517-012

RF & MICROWAVE TRANSISTORS SATELLITE COMMUNICATIONS APPLICATIONS

- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- ∞:1 VSWR CAPABILITY
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- METAL/CERAMIC HERMETIC PACKAGE
- Pout = 12 W MIN. WITH 8.5 dB GAIN

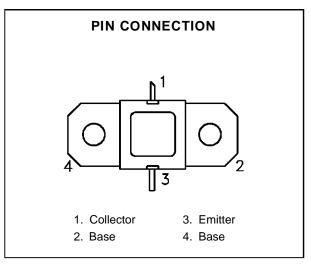


DESCRIPTION

The AM1517-012 power transistor is designed specifically for Satellite communications applications in the 1.5 – 1.7 GHz frequency range.

The device is capable of withstanding any mismatch load condition at any phase angle (VSWR ∞:1) under full rated conditions. The unit is an overlay, emitter site ballasted, geometry utilizing a Refractory/Gold metallization system.

The AM1517-012 is supplied in the AMPAC™ Hermetic/Ceramic package with internal Input/Output matching structures.



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

| Symbol | Parameter | Value | Unit |
|-------------------|--|--------------|------|
| P _{DISS} | Power Dissipation* (T _C ≤100°C) | 27 | W |
| Ic | Device Current* | 1.25 | А |
| Vcc | Collector-Supply Voltage* | 30 | V |
| TJ | Junction Temperature | 200 | °C |
| T _{STG} | Storage Temperature | - 65 to +200 | °C |

THERMAL DATA

| R _{TH(j-c)} | Junction-Case Thermal Resistance* | 5.5 | °C/W | |
|----------------------|-----------------------------------|-----|------|--|

^{*}Applies only to rated RF amplifier operation

September 1992

ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

STATIC

| Symbol | Test Conditions | | Value | | |
|-------------------|-----------------------------|------|-------|------|------|
| | | Min. | Тур. | Max. | Unit |
| BV _{CBO} | $I_C = 4mA$ $I_E = 0mA$ | 45 | _ | _ | V |
| BV _{EBO} | $I_E = 4mA$ $I_C = 0mA$ | 3.0 | _ | _ | V |
| Ісво | V _{CB} = 28V | _ | _ | 1 | mA |
| h _{FE} | $V_{CE} = 5V$ $I_{C} = .8A$ | 15 | _ | 150 | |

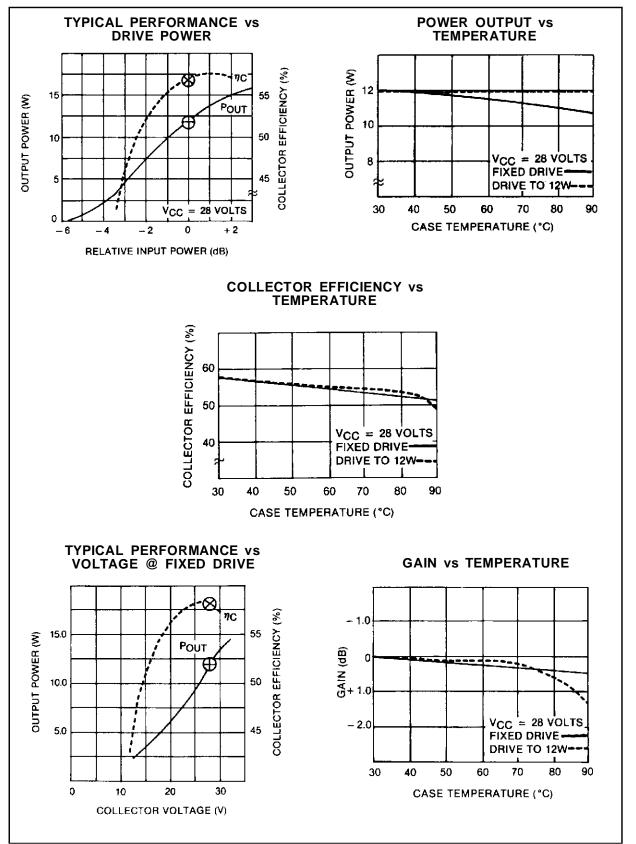
DYNAMIC

| Cumbal | | Took Conditions | | Value | | | I I I I I I I I I I I I I I I I I I I |
|----------------|------------------|------------------------|----------------|-------|------|------|---------------------------------------|
| Symbol | Test Conditions | | | Min. | Тур. | Max. | Unit |
| Pout | f = 1.5 — 1.7GHz | $P_{IN}=1.7W$ | $V_{CC} = 28V$ | 12 | 13 | _ | W |
| ης | f = 1.5 — 1.7GHz | $P_{IN} = 1.7W$ | $V_{CC} = 28V$ | 55 | 58 | _ | % |
| G _P | f = 1.5 — 1.7GHz | P _{IN} = 1.7W | Vcc = 28V | 8.5 | _ | _ | dB |

Note: AM1517 series vary P_{IN} to achieve Pout; performance guaranteed in 50 MHz increments. Alpha-Suffix added to AM1517 P/N designates band segment.

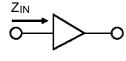
A -1500 = 1550 MHzM -1620 = 1660 MHzS -1625 = 1675 MHz

TYPICAL PERFORMANCE

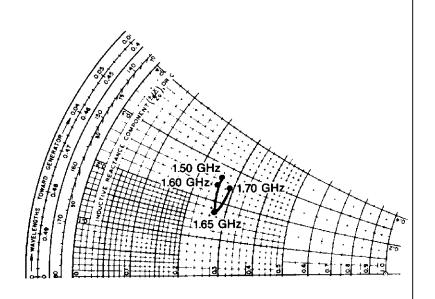


IMPEDANCE DATA



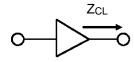


 $\begin{aligned} P_{OUT} &= 12 \ W \\ V_{CC} &= 28 \ V \\ Z_{O} &= 50 \ ohms \end{aligned}$

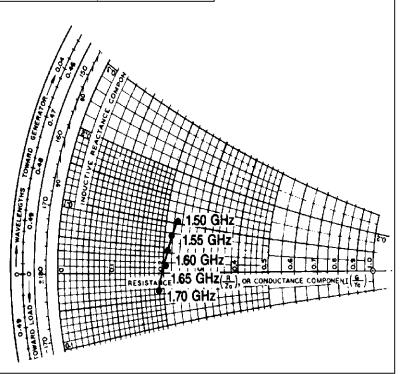


| FREQ. | Z _{IN} (Ω) | $Z_CL\left(\Omega\right)$ |
|--------------|---------------------|---------------------------|
| L = 1.50 GHz | 13.0 + j 13.5 | 11.5 + j 5.0 |
| M = 1.60 GHz | 13.0 + j 12.0 | 10.5 + j 2.2 |
| H = 1.70 GHz | 14.5 + j 12.5 | 9.5 – j 1.5 |

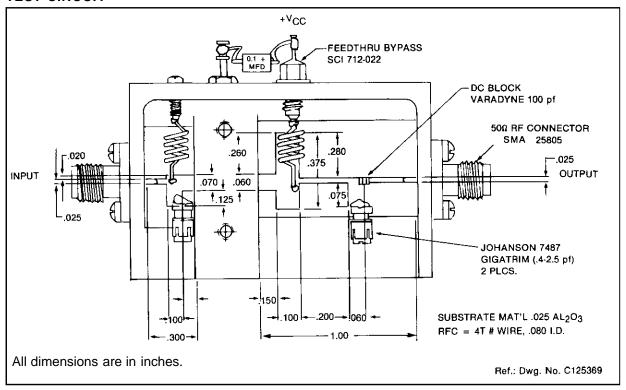
TYPICAL COLLECTOR LOAD IMPEDANCE



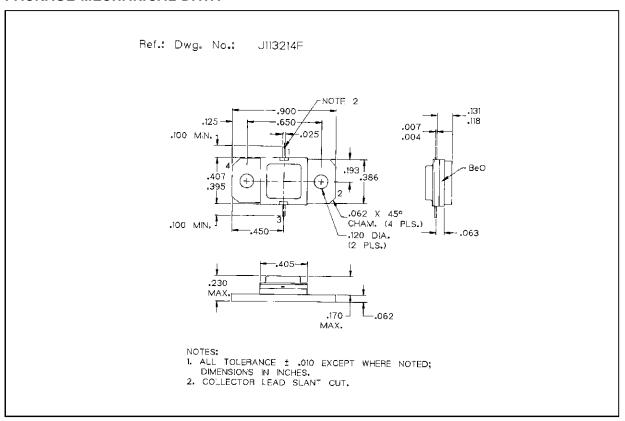
 $\begin{aligned} P_{OUT} &= 12 \ W \\ V_{CC} &= 28 \ V \\ Z_{O} &= 50 \ ohms \end{aligned}$



TEST CIRCUIT



PACKAGE MECHANICAL DATA



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