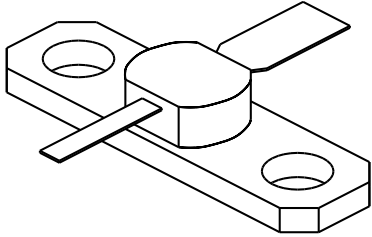


3005
5 Watts - 28 Volts, Class C
Microwave 3000 MHz

| | | | | | | | | | | | | | | | | | |
|---|---|----------|------------------------------------|--|------------------------------------|----------|-------------------------------|-----------|----------------------|-------|-----------------------------|--|---------------------|-----------------|--------------------------------|---------|--|
| <p>GENERAL DESCRIPTION The 3005 is a COMMON BASE transistor capable of providing 5 Watts Class C, RF output power at 3000 MHz. Gold metalization and diffused ballasting are used to provide high reliability and supreme ruggedness. The transistor uses a fully hermetic High Temperature Solder Sealed package.</p> | <p>CASE OUTLINE 55BT, STYLE 1</p>  | | | | | | | | | | | | | | | | |
| <p>ABSOLUTE MAXIMUM RATINGS</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">Maximum Power Dissipation @ 25°C</td> <td style="text-align: right;">25 Watts</td> </tr> <tr> <td colspan="2">Maximum Voltage and Current</td> </tr> <tr> <td>BVces Collector to Emitter Voltage</td> <td style="text-align: right;">50 Volts</td> </tr> <tr> <td>BVebo Emitter to Base Voltage</td> <td style="text-align: right;">3.5 Volts</td> </tr> <tr> <td>Ic Collector Current</td> <td style="text-align: right;">2.5 A</td> </tr> <tr> <td colspan="2">Maximum Temperatures</td> </tr> <tr> <td>Storage Temperature</td> <td style="text-align: right;">- 65 to + 200°C</td> </tr> <tr> <td>Operating Junction Temperature</td> <td style="text-align: right;">+ 200°C</td> </tr> </table> | Maximum Power Dissipation @ 25°C | 25 Watts | Maximum Voltage and Current | | BVces Collector to Emitter Voltage | 50 Volts | BVebo Emitter to Base Voltage | 3.5 Volts | Ic Collector Current | 2.5 A | Maximum Temperatures | | Storage Temperature | - 65 to + 200°C | Operating Junction Temperature | + 200°C | |
| Maximum Power Dissipation @ 25°C | 25 Watts | | | | | | | | | | | | | | | | |
| Maximum Voltage and Current | | | | | | | | | | | | | | | | | |
| BVces Collector to Emitter Voltage | 50 Volts | | | | | | | | | | | | | | | | |
| BVebo Emitter to Base Voltage | 3.5 Volts | | | | | | | | | | | | | | | | |
| Ic Collector Current | 2.5 A | | | | | | | | | | | | | | | | |
| Maximum Temperatures | | | | | | | | | | | | | | | | | |
| Storage Temperature | - 65 to + 200°C | | | | | | | | | | | | | | | | |
| Operating Junction Temperature | + 200°C | | | | | | | | | | | | | | | | |

ELECTRICAL CHARACTERISTICS @ 25 °C

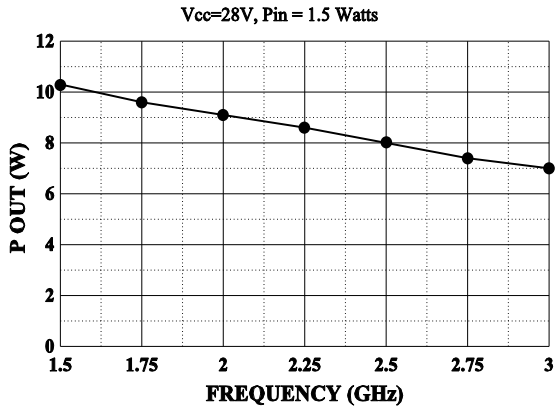
| SYMBOL | CHARACTERISTICS | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|-------------------------|-------------------------|---------------------|-----|-----|------|-------|
| Pout | Power Out | F = 3000 MHz | 5.0 | | | Watt |
| Pin | Power Input | Vcb = 28 Volts | | | 1.5 | Watt |
| Pg | Power Gain | Po = 5 Watts | 5.2 | | | dB |
| η_c | Collector Efficiency | As Above | | 30 | | % |
| VSWR₁ | Load Mismatch Tolerance | F = 3 GHz, Po = 5 W | | | 20:1 | |

| | | | | | | |
|-----------------------|--------------------------------|------------------------|-----|--|-----|-------|
| BVces | Collector to Emitter Breakdown | Ic = 10 mA | 50 | | | Volts |
| BVebo | Emitter to Base Breakdown | Ie = 10 mA | 3.5 | | | Volts |
| h_{FE} | Current Gain | Vce = 5 V, Ic = 300 mA | 20 | | 120 | |
| Cob | Output Capacitance | F = 1 MHz, Vcb = 28 V | | | | pF |
| θ_{jc} | Thermal Resistance | | | | 7.0 | °C/W |

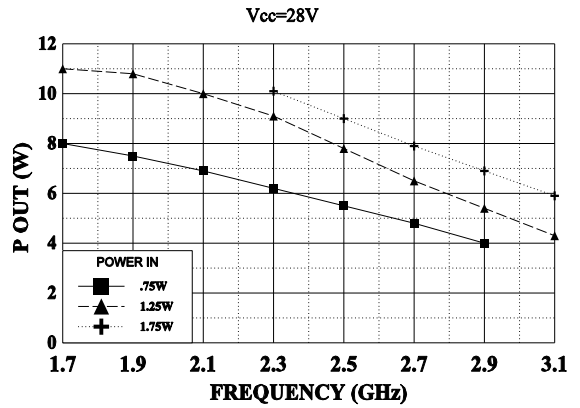
Issue August 1996

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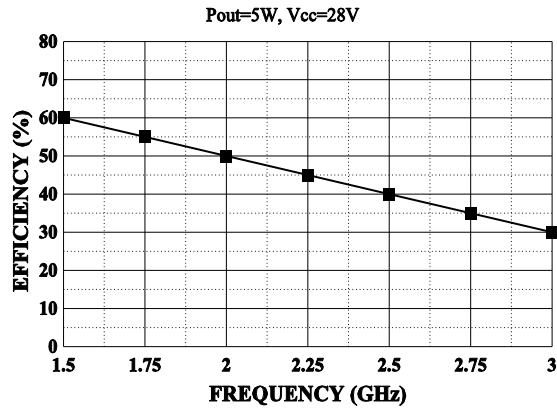
SATURATED P OUT VS FREQUENCY



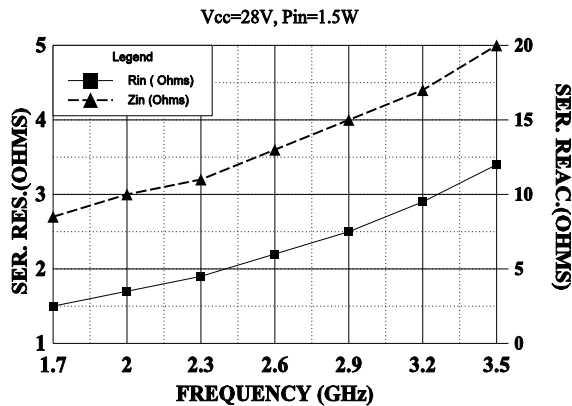
TYPICAL POWER OUTPUT VS FREQUENCY



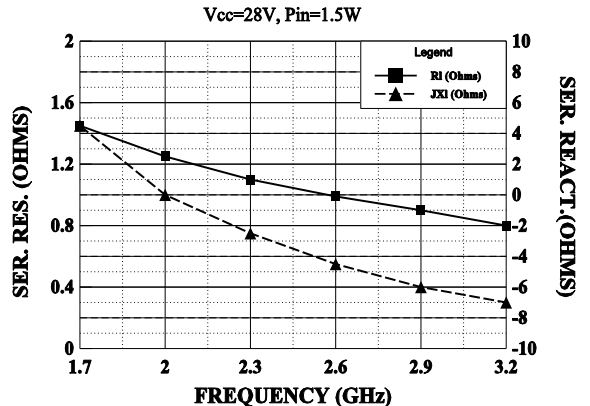
EFFICIENCY VS FREQUENCY



SERIES INPUT IMPEDANCE VS FREQUENCY



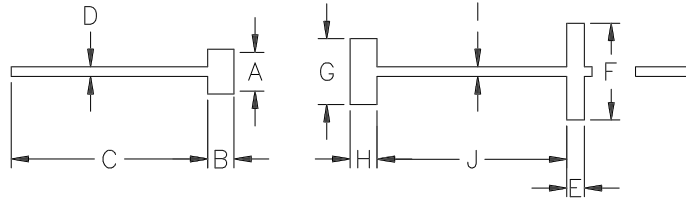
SERIES LOAD IMPEDANCE VS FREQUENCY



REVISIONS

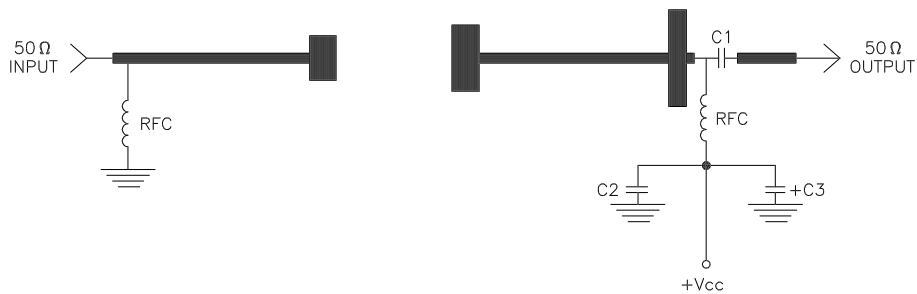
| ZONE | REV | DESCRIPTION | DATE | APPROVED |
|------|-----|-------------|------|----------|
|------|-----|-------------|------|----------|

| DIM | INCHES |
|-----|--------|
| A | .230 |
| B | .135 |
| C | .900 |
| D | .050 |
| E | .090 |
| F | .160 |
| G | .320 |
| H | .140 |
| I | .050 |
| J | .160 |



3005 TEST AMPLIFIER

f = 3000 MHz



— = Microstrip on 0.020" Teflon Fiberglass, Er=2.55
 C1,C2 = ATC 'A' 47pf
 C3 = 10 Mfd @ 35 Volts