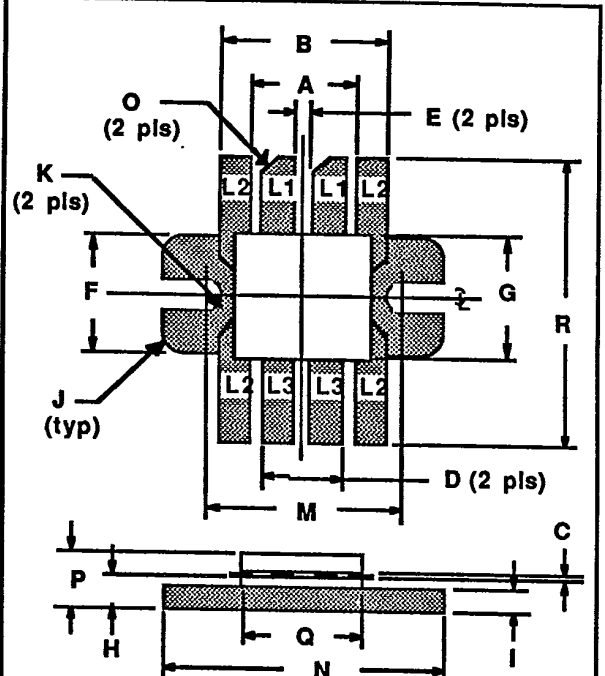


GENERAL DESCRIPTION

The 0104-100 balanced transistor is specifically designed for wideband operation from 100-400 MHz. It may be operated Class A, AB or C. Gold metalization and silicon diffused resistors ensure ruggedness and high reliability.

0104-100
100 WATTS - 28 VOLTS
100-400 MHz

UHF COMMUNICATIONS



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25 C Case Temperature 270 W

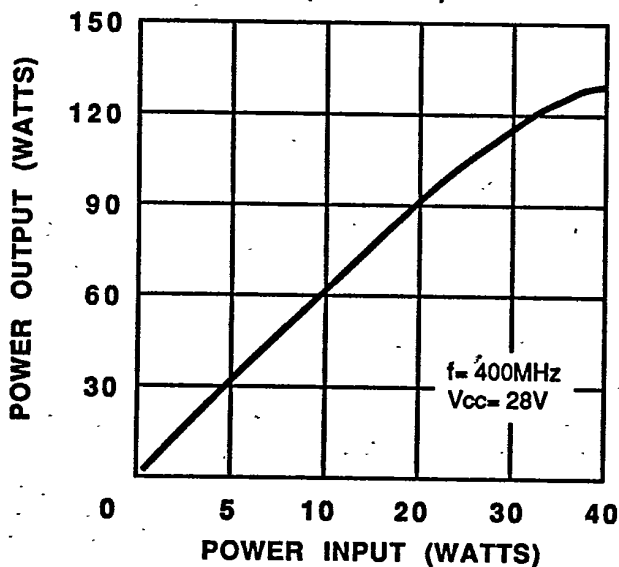
Maximum Voltage and Current

| | | |
|-------|------------------------------|------|
| BVces | Collector to Emitter Voltage | 60 V |
| BVebo | Emitter to Base Voltage | 4 V |
| Ic | Collector Current | 16 A |

Maximum Temperatures

| | |
|--------------------------------|---------------|
| Storage Temperature | -65 to +150°C |
| Operating Junction Temperature | +200°C |

POWER OUTPUT VS POWER INPUT (TYPICAL)



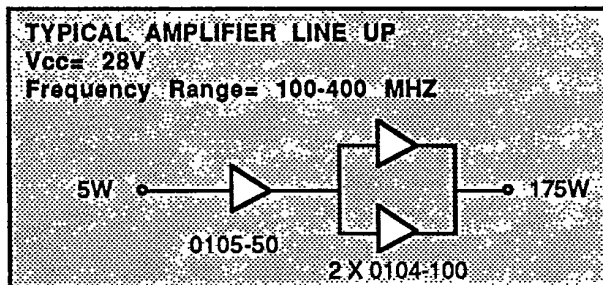
| DIM | Millimeter | TOL | Inches | TOL |
|-----|------------|-----|--------|------|
| A | 9.14 | .13 | .360 | .005 |
| B | 12.70 | .13 | .500 | .005 |
| C | 0.13 | .02 | .005 | .001 |
| D | 6.86 | .13 | .270 | .005 |
| E | 0.76 | .13 | .030 | .005 |
| F | 9.78 | .13 | .385 | .005 |
| G | 10.16 | .13 | .400 | .005 |
| H | 4.19 | .13 | .165 | .005 |
| I | 3.17 | .13 | .125 | .005 |
| J | 1.52 R | .13 | .060 R | .005 |
| K | 1.65 R | .13 | .065 R | .005 |
| M | 16.51 | .13 | .650 | .005 |
| N | 22.86 | .13 | .900 | .005 |
| O | 45 ° | 5 ° | 45 ° | 5 ° |
| P | 6.35 | REF | .250 | REF |
| Q | 10.77 | .13 | .424 | .005 |
| R | 19.05 | .25 | .750 | .010 |

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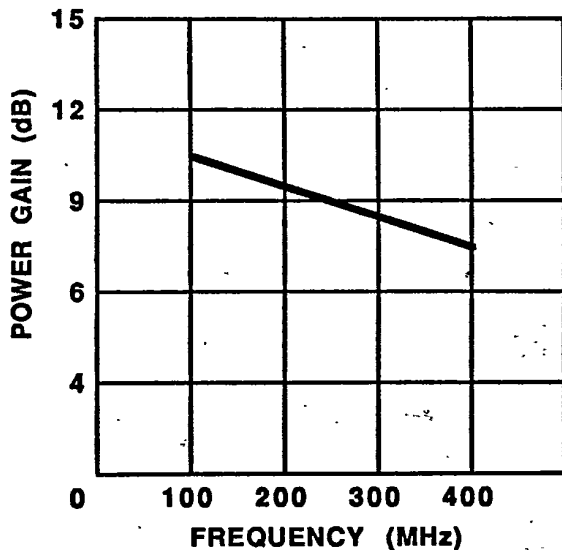
0104-100-2

ELECTRICAL CHARACTERISTICS

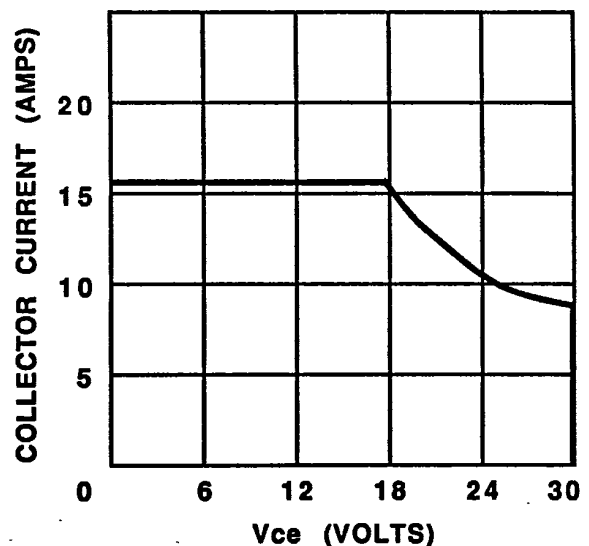
| SYMBOL | CHARACTERISTICS | TEST CONDITIONS | MIN. | TYP. | MAX. | UNITS |
|-------------------|--------------------------------|---|------|------|------|-------|
| P _{out} | Power Output | f = 400 MHz, V _{cc} = 28V, Class C | 100 | | | Watts |
| P _{in} | Power Input | At Rated Power Out | | | 20 | Watts |
| P _g | Power Gain | | | 8.0 | | dB |
| BV _{ebo} | Voltage - Emitter to Base | I _e = 5 mA | 4 | | | Volts |
| BV _{ces} | Voltage - Collector to Emitter | I _c = 100 mA | 60 | | | Volts |
| BV _{ceo} | Voltage - Collector to Emitter | I _c = 100 mA | 32 | | | Volts |
| VSWR | Load Mismatch Tolerance | f = 400MHz, V _{cc} = 28V, Class C | | | 5:1 | |
| η _c | Collector Efficiency | f = 400MHz, V _{cc} = 28V, Class C | 50 | | | % |
| C _{ob} | Capacitance-Collector to Base | f = 1 Mhz, V _{cb} = 28V | | 140 | | pF |
| h _{FE} | DC-Current Gain | V _{ce} = 5V, I _c = 2A | 20 | | | |
| θ _{jc} | Thermal Resistance | T _c = 25 °C | | | .65 | °C/W |



POWER GAIN VS FREQUENCY (TYPICAL WIDEBAND)



DC SAFE OPERATING AREA (TYPICAL)

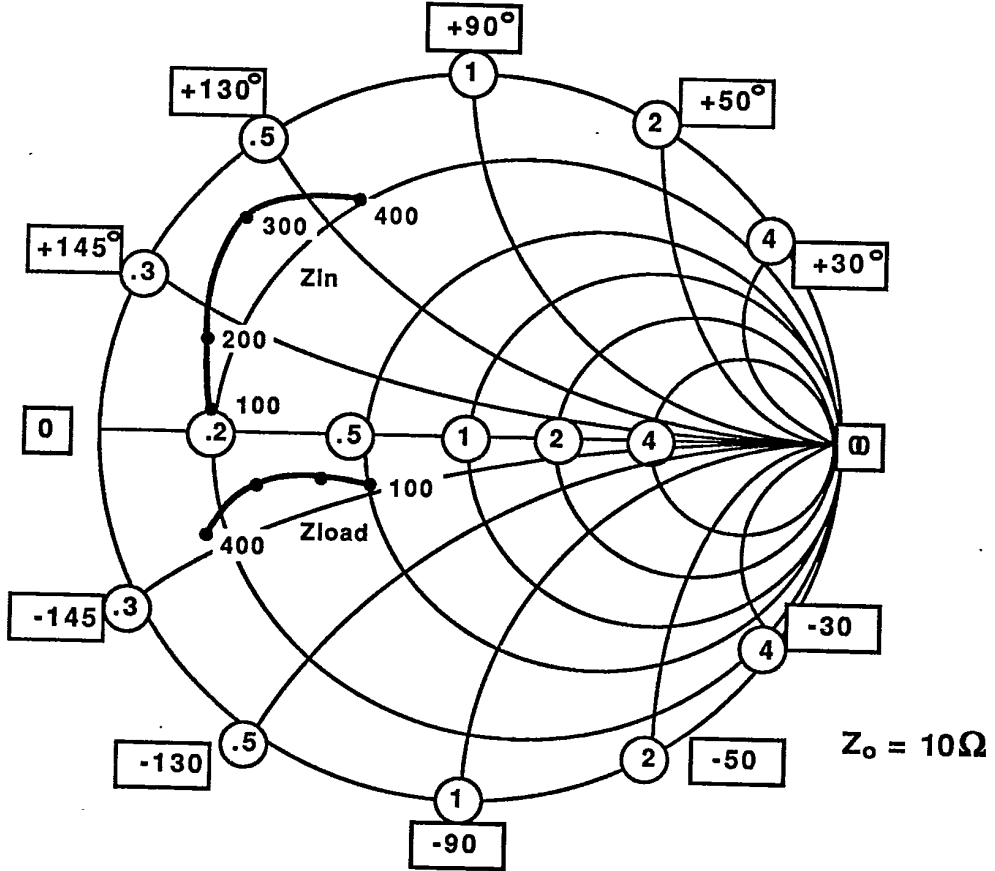


SPECIFICATIONS MAY BE SUBJECT TO CHANGE WITHOUT NOTICE

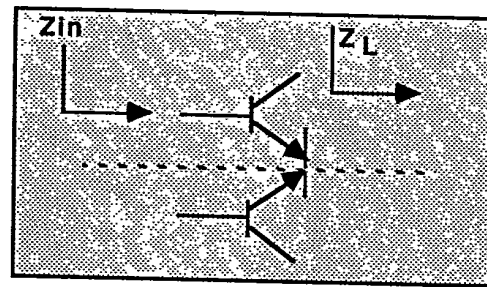
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SMITH CHART

NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES



Typical series input and output impedances at rated power output conditions for single side normalized to 10 ohms.



| FREQUENCY MHz | | | FREQUENCY MHz | | |
|------------------|-----------|-----|------------------|-------------|-----|
| R | Zin jX | | R | Zload jX | |
| 100 | 2.2 | 1.0 | 100 | 5.0 | 2.5 |
| 200 | 1.4 | 2.7 | 200 | 4.0 | 1.7 |
| 300 | 1.0 | 4.0 | 300 | 3.0 | 1.5 |
| 400 | 1.8 | 5.5 | 400 | 1.8 | 2.0 |

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