

NPN SILICON RF POWER TRANSISTOR

DESCRIPTION:

The **ASI 2003** is Designed for General Purpose Class C Power Amplifier Applications up to 2300 MHz.

FEATURES:

- $P_G = 10$ dB min. at 3 W/ 2,000 MHz
- Hermetic Microstrip Package
- **Omnigold™** Metalization System

MAXIMUM RATINGS

| | |
|---------------|---------------------------------|
| I_C | 600 mA |
| V_{CC} | 35 V |
| P_{DISS} | 21.8 W @ $T_C = 25^\circ C$ |
| T_J | $-65^\circ C$ to $+200^\circ C$ |
| T_{STG} | $-65^\circ C$ to $+200^\circ C$ |
| θ_{JC} | $15^\circ C/W$ |

PACKAGE STYLE .250 2L FLG

| DIM | MINIMUM inches / mm | MAXIMUM inches / mm |
|-----|------------------------|------------------------|
| A | .028 / 0.71 | .032 / 0.81 |
| B | .740 / 18.80 | |
| C | .245 / 6.22 | .255 / 6.48 |
| D | .128 / 3.25 | .132 / 3.35 |
| E | | .125 / 3.18 |
| F | .110 / 2.79 | .117 / 2.97 |
| G | | .117 / 2.97 |
| H | .560 / 14.22 | .570 / 14.48 |
| I | .790 / 20.07 | .810 / 20.57 |
| J | .225 / 5.72 | .235 / 5.97 |
| K | .165 / 4.19 | .185 / 4.70 |
| L | .003 / 0.08 | .007 / 0.18 |
| M | .058 / 1.47 | .068 / 1.73 |
| N | .119 / 3.02 | .135 / 3.43 |
| P | .149 / 3.78 | .187 / 4.75 |

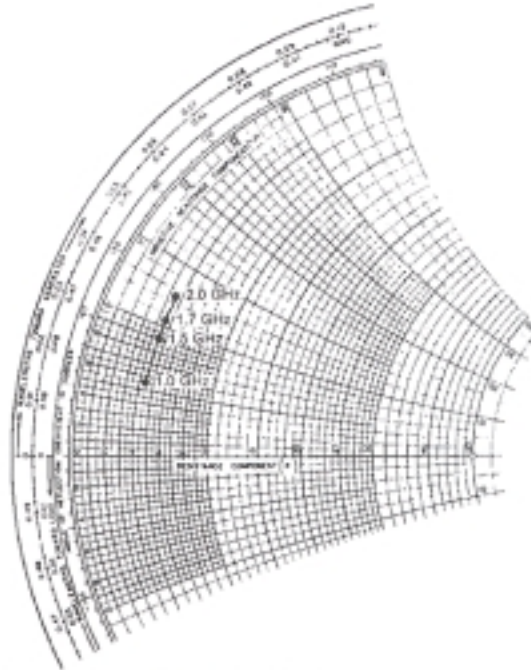
ORDER CODE: ASI10528

CHARACTERISTICS $T_C = 25^\circ C$

| SYMBOL | TEST CONDITIONS | MINIMUM | TYPICAL | MAXIMUM | UNITS |
|------------|---|---------|---------|---------|-------|
| BV_{CBO} | $I_C = 1.0$ mA | 45 | | | V |
| BV_{CER} | $I_C = 5.0$ mA $R_{BE} = 10 \Omega$ | 45 | | | V |
| BV_{EBO} | $I_E = 1.0$ mA | 3.5 | | | V |
| I_{CBO} | $V_{CB} = 28$ V | | | 1.0 | mA |
| h_{FE} | $V_{CE} = 5.0$ V $I_C = 200$ mA | 15 | | 120 | --- |
| C_{ob} | $V_{CB} = 28$ V $f = 1.0$ MHz | | | 3.5 | pF |
| P_G | $V_{CC} = 28$ V $P_{OUT} = 3.0$ W $f = 2.0$ GHz | 10 | | | dB |
| η_c | | 35 | | | % |

**TYPICAL INPUT
IMPEDANCE**

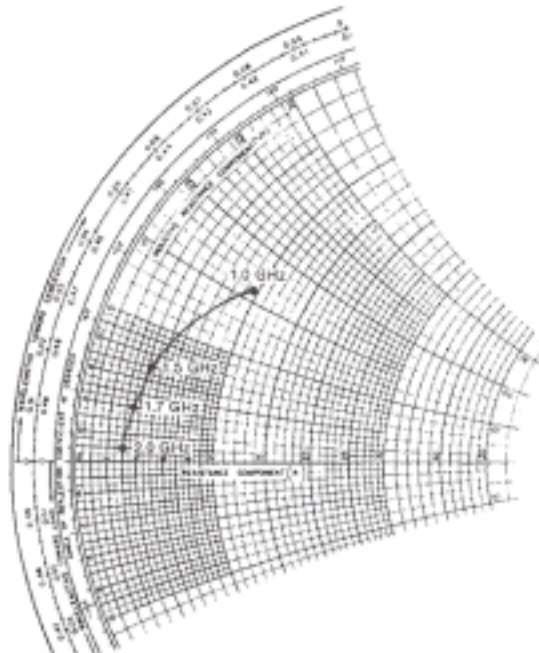

$P_{IN} = 0.5\text{ W}$
 $V_{CC} = 28\text{ V}$
 Normalized to 50 ohms



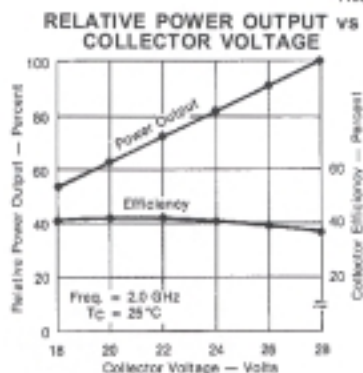
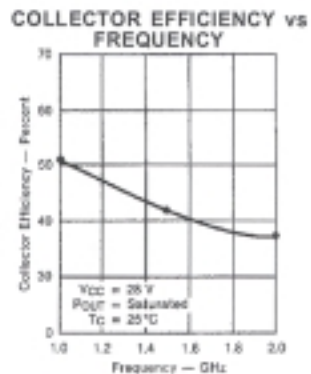
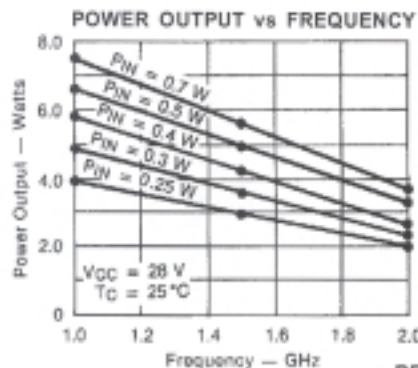
| FREQ. | $Z_{IN} (\Omega)$ | $Z_{CL} (\Omega)$ |
|---------|-------------------|-------------------|
| 1.0 GHz | $4.4 + j 5.5$ | $9.6 + j 16.0$ |
| 1.5 GHz | $4.5 + j 9.0$ | $4.3 + j 7.0$ |
| 1.7 GHz | $4.5 + j 10.5$ | $3.5 + j 4.0$ |
| 2.0 GHz | $4.6 + j 12.5$ | $3.0 + j 1.0$ |

**TYPICAL COLLECTOR
LOAD IMPEDANCE**


$P_{OUT} = \text{Saturated}$
 $V_{CC} = 28\text{ V}$
 Normalized to 50 ohms

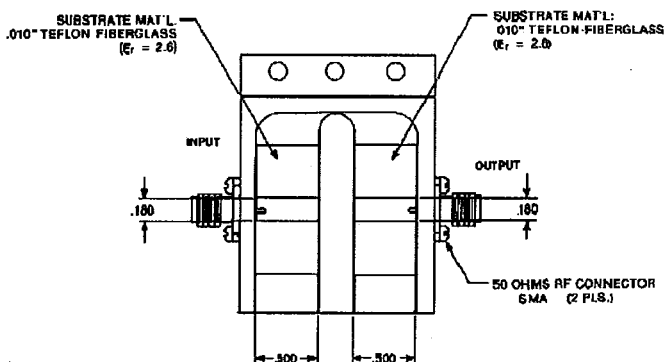


TYPICAL PERFORMANCE



TEST CIRCUIT

All dimensions are in inches.
Frequency 2.0 GHz



RF Amplifier Power Output Test

