

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

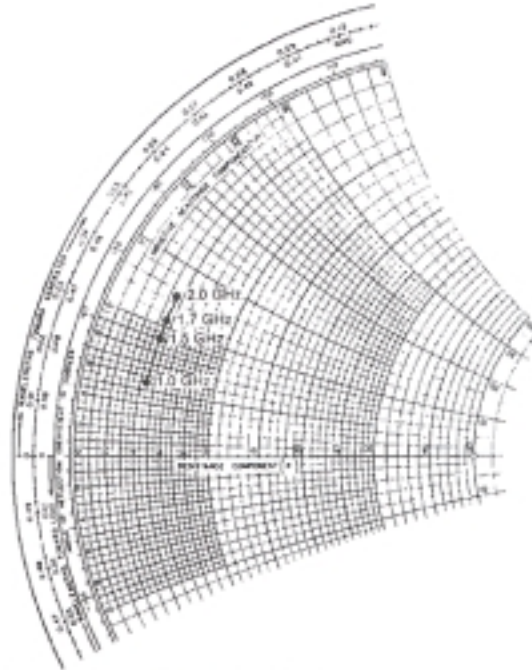
ORDER CODE: ASI10528

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**

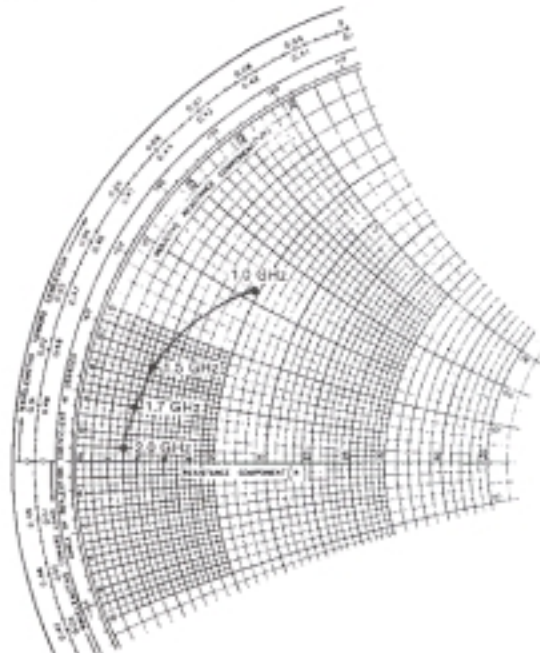

$P_{IN} = 0.5\text{ W}$
 $V_{CC} = 28\text{ V}$
 Normalized to 50 ohms



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	$4.6 + j 12.5$	$3.0 + j 1.0$

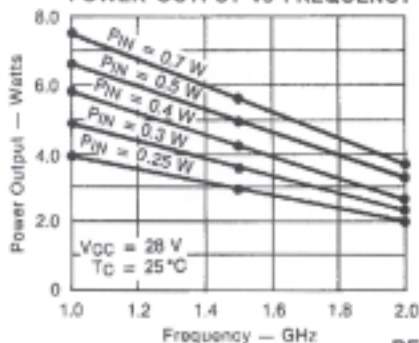
**TYPICAL COLLECTOR
LOAD IMPEDANCE**


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

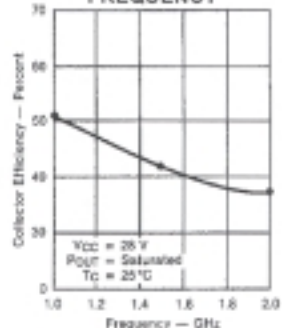


TYPICAL PERFORMANCE

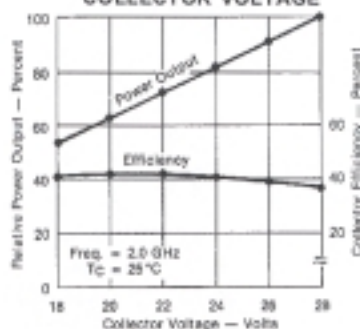
POWER OUTPUT vs FREQUENCY



COLLECTOR EFFICIENCY vs FREQUENCY

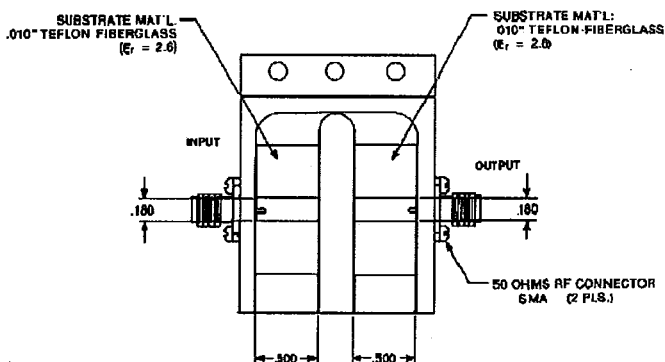


RELATIVE POWER OUTPUT vs COLLECTOR VOLTAGE



TEST CIRCUIT

All dimensions are in inches.
Frequency 2.0 GHz



RF Amplifier Power Output Test

