

NPN SILICON RF POWER TRANSISTOR

DESCRIPTION:

The **ASI CBSL30** is a gold metalized epitaxial silicon NPN transistor, using diffused ballast resistors for high linearity Class-AB operation for cellular base station application.

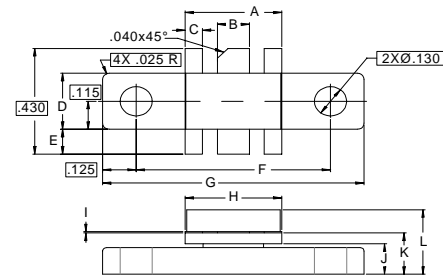
FEATURES:

- Internal Input Matching Network
- $P_G = 7.5$ dB at 30 W/960 MHz
- **OmniGold™** Metalization System
- $\eta_c = 55$ % Typ.
- = Load mismatch capability 20:1

MAXIMUM RATINGS

I_C	7.5 A
V_{CBO}	48V
V_{CEO}	25 V
V_{EBO}	3.5 V
P_{DISS}	88 W @ $T_C = 25$ °C
T_J	-65 °C to +200 °C
T_{STG}	-65 °C to +150 °C
θ_{JC}	2.0 °C/W

PACKAGE STYLE .230 6L FLG



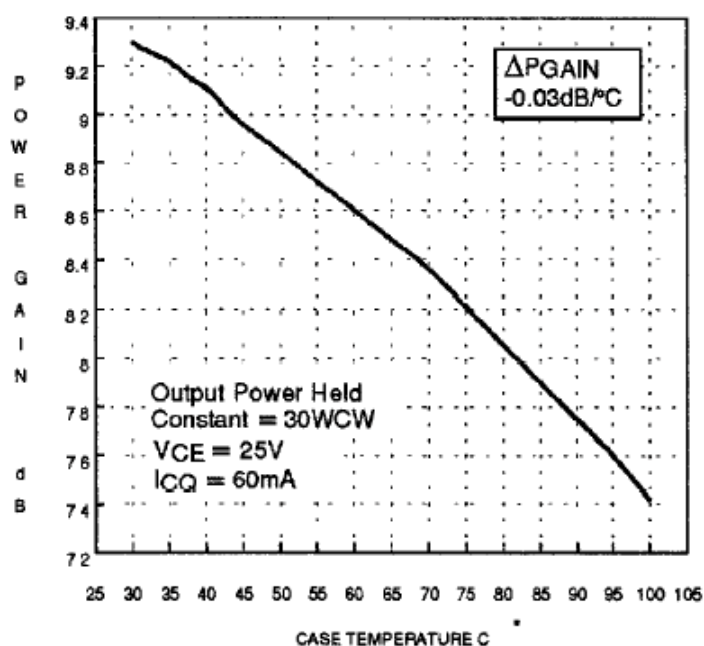
DIM	MINIMUM inches / mm	MAXIMUM inches / mm
A	.355 / 9.02	.365 / 9.27
B	.115 / 2.92	.125 / 3.18
C	.075 / 1.91	.085 / 2.16
D	.225 / 5.72	.235 / 5.97
E	.090 / 2.29	.110 / 2.79
F	.720 / 18.29	.730 / 18.54
G	.970 / 24.64	.980 / 24.89
H	.355 / 9.02	.365 / 9.27
I	.004 / 0.10	.006 / 0.15
J	.120 / 3.05	.130 / 3.30
K	.160 / 4.06	.180 / 4.57
L	.230 / 5.84	.260 / 6.60

ORDER CODE: ASI10582

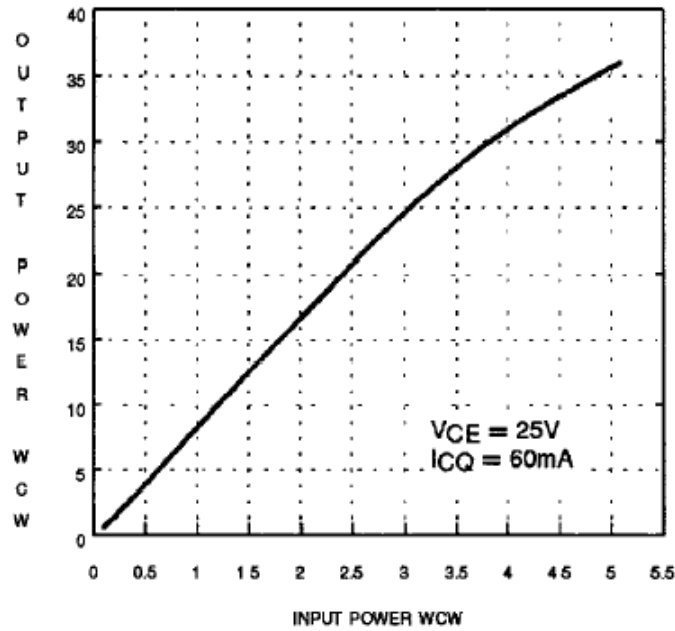
CHARACTERISTICS $T_C = 25$ °C

SYMBOL	TEST CONDITIONS	MINIMUM	TYPICAL	MAXIMUM	UNITS
BV_{CBO}	$I_C = 100$ Ma	48	55	---	V
BV_{CER}	$I_C = 40$ mA $R_{BE} = 150$ Ω	30	40	---	V
BV_{CEO}	$I_C = 40$ mA	25	28	---	V
BV_{EBO}	$I_E = 10$ mA	3.5	5.0	---	V
I_{CBO}	$V_{CE} = 24$ V	10	---	---	mA
h_{FE}	$V_{CE} = 20$ V $I_C = 2.0$ A	15	40	100	---
C_{OB}	$V_{CB} = 25$ V $f = 1.0$ MHz		42	50	pF
P_G	$V_{CE} = 25$ V $I_{CQ} = 60$ mA $f = 860$ MHz	7.5	9.0	---	dB
IMD_3	$P_{OUT} = 30$ W $f_1 = 860.0$ MHz $f_2 = 860.1$ MHz		-35		dBc
η_c			55		%

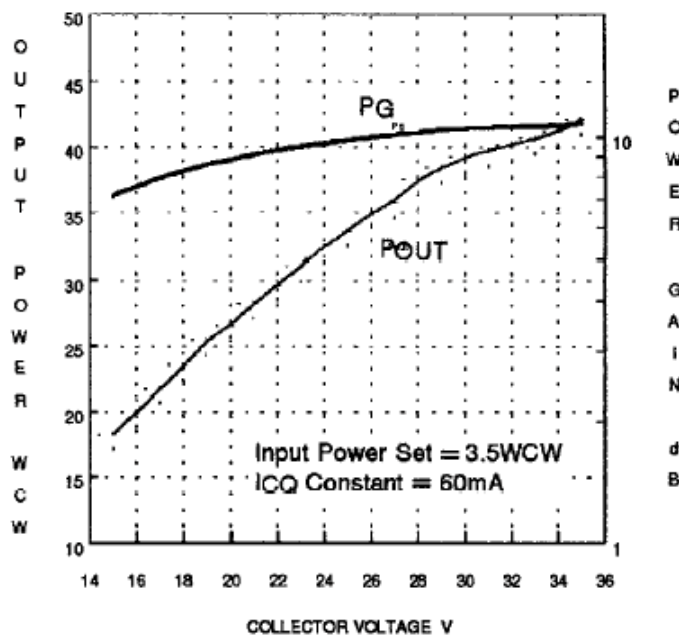
VSWR₁	V _{CE} = 25 V V _{CE} = 25 V ± 20%	VSWR = 20:1 VSWR = 10:1	No Degradation in Output Device	Typ.
VSWR₂	V _{CE} = 25 V ± 20% P _{IN} = P _{IN} (norm) +3 dB	VSWR = 5:1	No Degradation in Output Device	Typ.
OVD	V _{CE} = 25 V V _{CE} = 25 V ± 20%	P _{IN} (norm) = +5 dB P _{IN} (norm) = +3 dB	No Degradation in Output Device	Typ.

POWER GAIN vs CASE TEMPERATURE


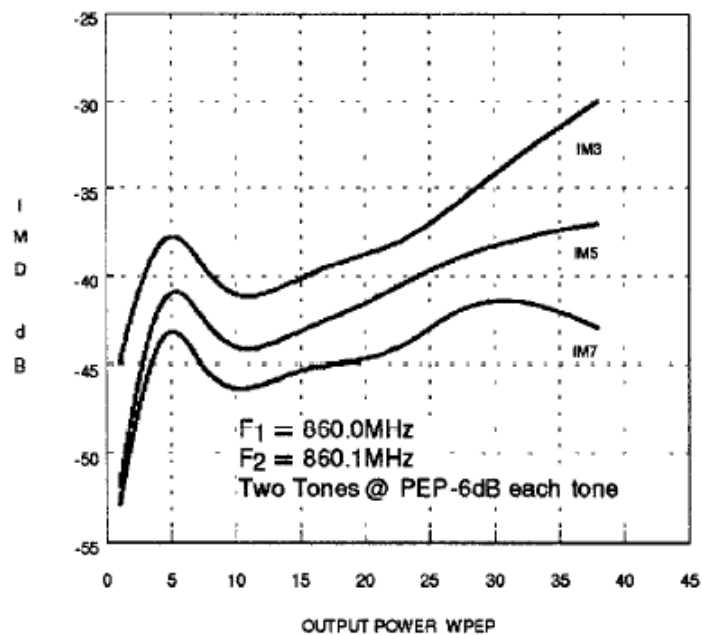
OUTPUT POWER vs INPUT POWER

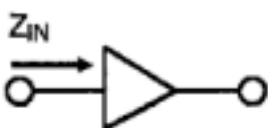
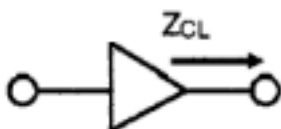


OUTPUT POWER & GAIN vs VOLTAGE

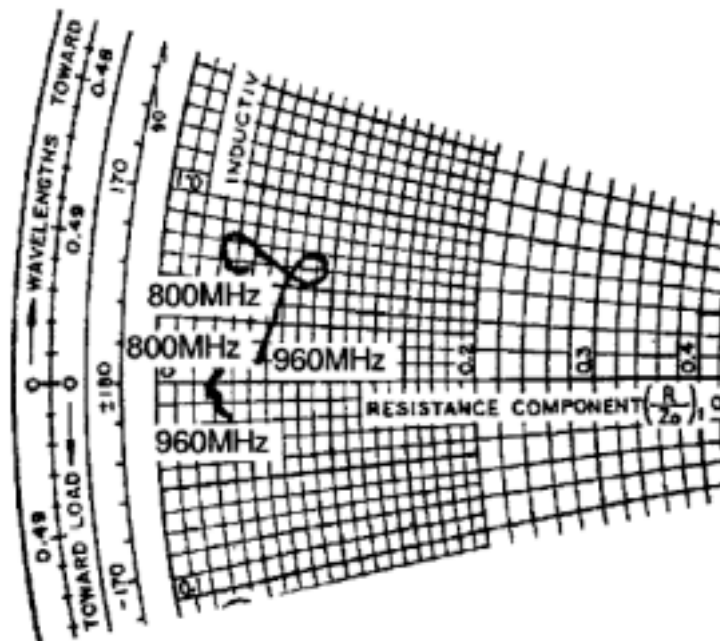


IM DISTORTION vs OUTPUT POWER



IMPEDANCE DATA
**TYPICAL INPUT
IMPEDANCE**

**TYPICAL COLLECTOR
LOAD IMPEDANCE**


FREQ.	$Z_{IN} (\Omega)$	$Z_{CL} (\Omega)$
800 MHz	$4.3 + j 5.8$	$3.5 + j 0.2$
830 MHz	$3.2 + j 6.1$	$3.5 + j 0.1$
860 MHz	$3.5 + j 7.1$	$2.9 - j 0.2$
900 MHz	$5.3 + j 6.4$	$3.0 - j 0.6$
915 MHz	$6.1 + j 6.3$	$3.2 - j 0.7$
930 MHz	$9.4 + j 6.3$	$3.2 - j 1.1$
945 MHz	$6.6 + j 3.0$	$3.3 - j 1.2$
960 MHz	$5.9 + j 1.0$	$3.4 - j 1.5$



$P_{OUT} = 30W$
 $V_{CE} = 25 V$
 Normalized to 50 ohms