

NPN SILICON RF POWER TRANSISTOR

DESCRIPTION:

The **ASI TVU014** is a gold metallized RF power transistor designed for Class-A, UHF and band IV and V TV transmitter applications. It utilizes emitter ballasting for high reliability and ruggedness.

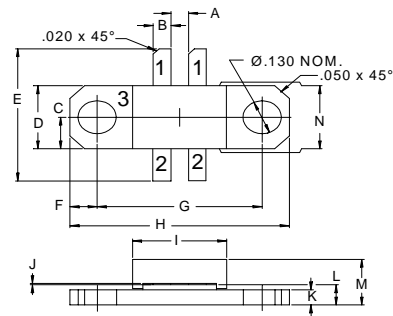
FEATURES:

- Common Emitter: Class-A, 25 V
- $P_G = 8.5$ dB at 14 W/860 MHz
- **Omnigold™** Metalization System
- Internal input matching

MAXIMUM RATINGS

I_C	2 x 2.6 A
V_{CBO}	45 V
V_{CEO}	25 V
V_{EBO}	4.0 V
P_{DISS}	65 W @ $T_C = 25$ °C
T_J	-65 °C to +200 °C
T_{STG}	-65 °C to +150 °C
θ_{JC}	2.5 °C/W

PACKAGE STYLE .250 BAL FLG



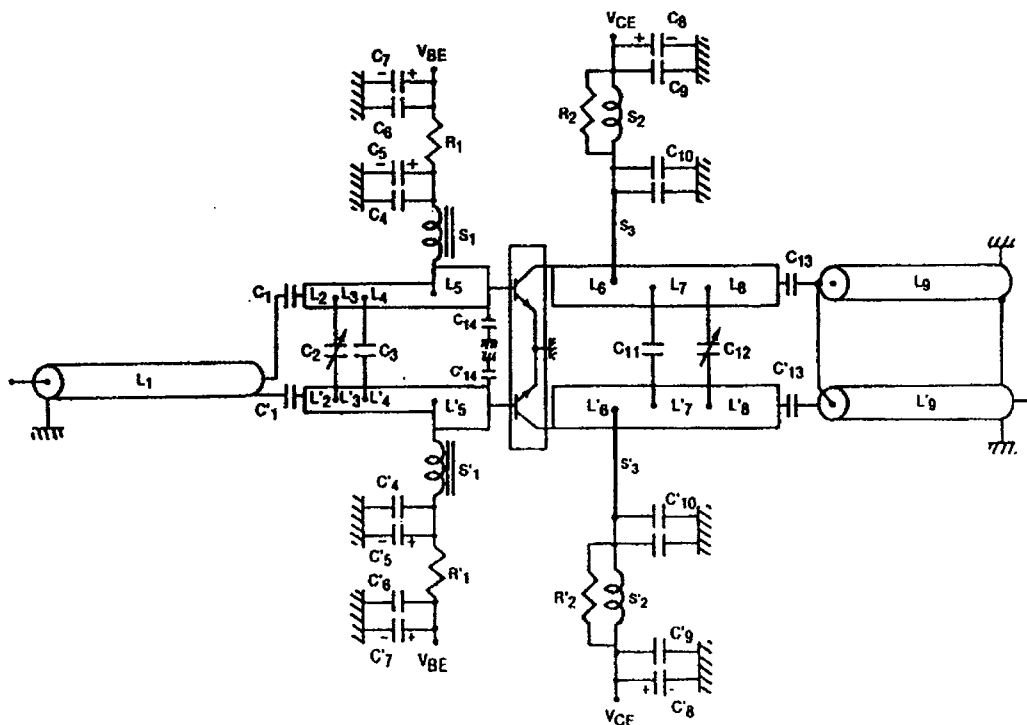
DIM	MINIMUM inches / mm	MAXIMUM inches / mm
A		.060 / 1.52
B	.055 / 1.40	.065 / 1.65
C		.125 / 3.18
D	.243 / 6.17	.255 / 6.48
E	.630 / 16.00	.670 / 17.01
F		.092 / 2.34
G	.555 / 14.10	.565 / 14.35
H	.739 / 18.77	.750 / 19.05
I	.315 / 8.00	.327 / 8.31
J	.002 / 0.05	.006 / 0.15
K	.055 / 1.40	.065 / 1.65
L	.075 / 1.91	.095 / 2.41
M		.190 / 4.83
N	.245 / 6.22	.257 / 6.53

1 = COLLECTOR 2 = BASE 3 = EMITTER

ORDER CODE: ASI10647

CHARACTERISTICS $T_C = 25$ °C

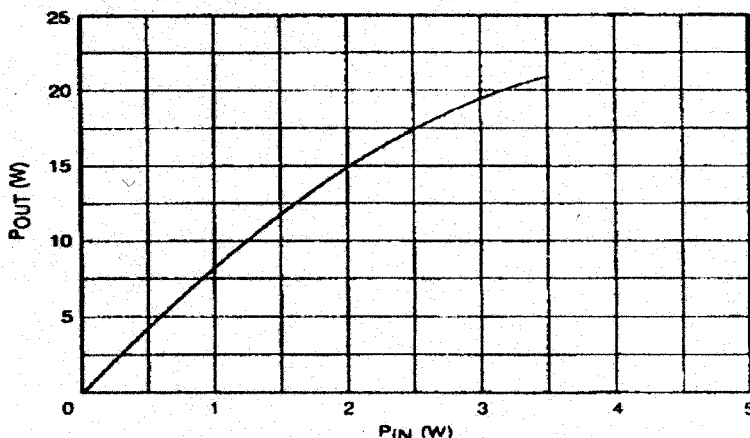
SYMBOL	TEST CONDITIONS	MINIMUM	TYPICAL	MAXIMUM	UNITS
BV_{CBO}	$I_C = 20$ mA	45			V
BV_{CEO}	$I_C = 40$ mA	25			V
BV_{EBO}	$I_E = 5.0$ mA	3.0			V
h_{FE}	$V_{CE} = 20$ V $I_C = 0.5$ A	10		200	---
C_{OB}	$V_{CB} = 25$ V $f = 1.0$ MHz			20	pF
P_G IMD_1	$V_{CE} = 25$ V $I_C = 2 \times 850$ mA $P_{OUT} = 14$ W $P_{IN} = 2.0$ W $f = 845$ MHz	8.5 -50			dB dBc

TEST CIRCUIT


- | | | |
|----------------------------|-----------|--|
| C1, C'1, | L3, L'3 : | 50Ω Printed Transmission Line Length 3mm |
| C13, C'13 : | L4, L'4 : | 50Ω Printed Transmission Line Length 9.5mm |
| C2 : | L5, L'5 : | 39Ω Printed Transmission Line Length 7mm |
| C3 : | L6, L'6 : | 39Ω Printed Transmission Line Length 15mm |
| C4, C'4, C6, C'6, C9, C'9, | L7, L'7 : | 39Ω Printed Transmission Line Length 8mm |
| C10, C'10 : | L8, L'8 : | 39Ω Printed Transmission Line Length 10mm |
| C5, C'5 : | R1, R'1 : | 4.7Ω, 1/2W |
| C7, C'7 : | R2, R'2 : | 1207Ω, 1/2W |
| C8, C'8 : | S1, S'1 : | 470nH Molded |
| C11 : | S2, S'2 : | 5 Turns, Diameter Wire 0.5mm on 3mm I.D. |
| C12 : | S3, S'3 : | Diameter Wire 1.2mm, Length 12mm |
| C14, C'14 : | | |
| L1, L9, L'9 : | | Substrate: Teflon Glass 30Mils, Er = 2.55 |
| L2, L'2 : | | |

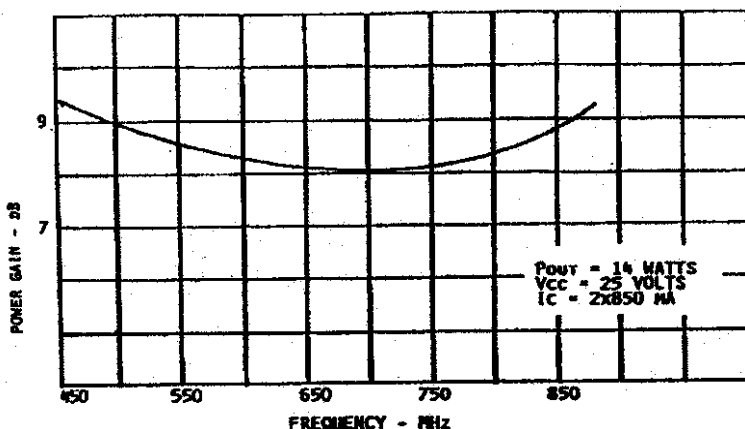
POWER OUTPUT vs POWER INPUT

OUTPUT POWER VERSUS INPUT POWER - TYPICAL VALUES



BROADBAND POWER GAIN vs FREQUENCY

BROADBAND POWER GAIN VS FREQUENCY



INTERMODULATION DISTORTION & CROSS MODULATION DISTORTION vs POWER OUTPUT

INTERMODULATION DISTORTION AND CROSS MODULATION DISTORTION VERSUS OUTPUT POWER - TYPICAL VALUES

