

# NPN SILICON RF POWER TRANSISTOR

**DESCRIPTION:**

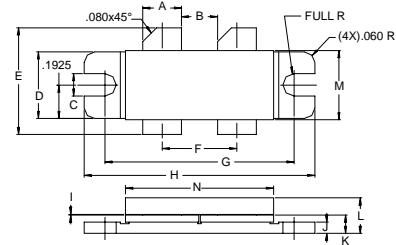
The **ASI TVU150** is Designed for Television Band IV & V Applications up to 860 MHz.

**FEATURES:**

- Common Emitter
- $P_G = 10$  dB at 150 W/860 MHz
- **Omnigold™** Metalization System

**MAXIMUM RATINGS**

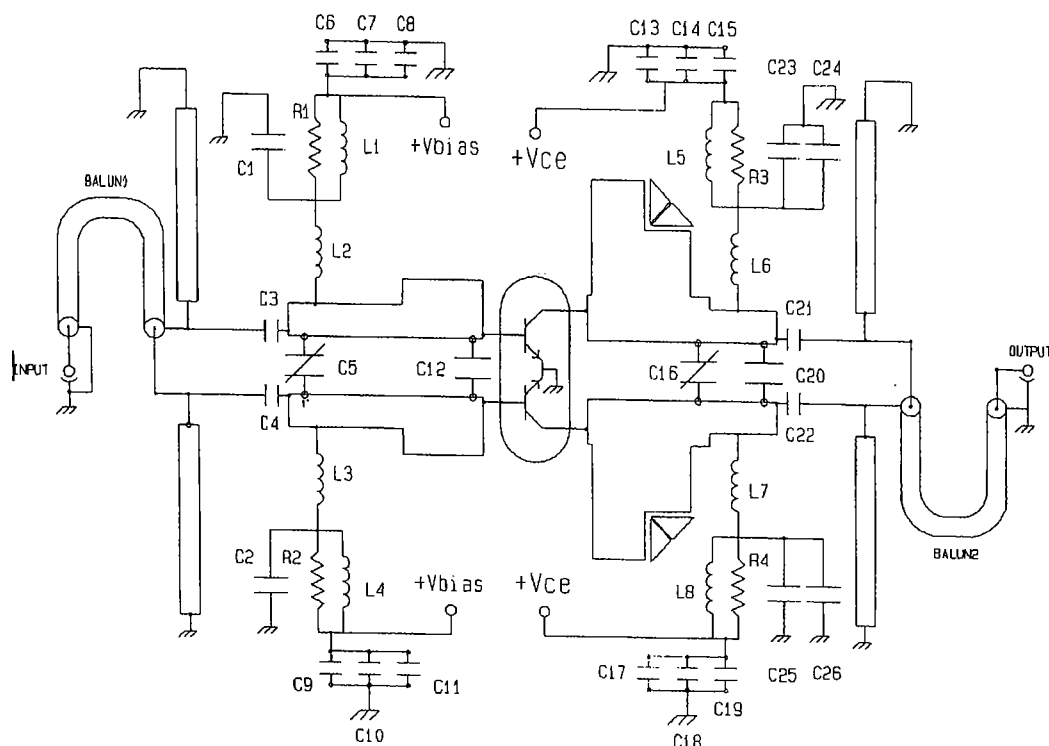
$I_C$	25 A
$V_{CEO}$	28 V
$V_{CES}$	60 V
$V_{EBO}$	3.5 V
$P_{DISS}$	300 W @ $T_C = 25$ °C
$T_J$	-65 °C to +200 °C
$T_{STG}$	-65 °C to +150 °C
$\theta_{JC}$	0.55 °C/W

**PACKAGE STYLE .400 BAL FLG(D)**


DIM	MINIMUM inches / mm	MAXIMUM inches / mm
A	.220 / 5.59	.230 / 5.84
B	.210 / 5.33	
C	.125 / 3.18	
D	.380 / 9.65	.390 / 9.91
E	.580 / 14.73	.620 / 15.75
F	.435 / 11.05	
G	1.090 / 27.69	1.105 / 28.07
H	1.335 / 33.91	1.345 / 34.16
I	.003 / 0.08	
J	.060 / 1.52	
K	.100 / 2.54	
L	.230 / 5.84	
M	.395 / 10.03	.407 / 10.34
N	.850 / 21.59	.870 / 22.10

**ORDER CODE: ASI10652**
**CHARACTERISTICS**  $T_C = 25$  °C

SYMBOL	TEST CONDITIONS	MINIMUM	TYPICAL	MAXIMUM	UNITS
$BV_{CEO}$	$I_C = 100$ mA	26	30		V
$BV_{CER}$	$I_C = 100$ mA $R_{BE} = 200$ $\Omega$	35	40		V
$BV_{CES}$	$I_C = 50$ mA	60	80		V
$BV_{EBO}$	$I_E = 10$ mA	3.5	4.0		V
$I_{CES}$	$V_{CE} = 30$ V			10	mA
$h_{FE}$	$V_{CE} = 5.0$ V $I_C = 1.0$ A	30	45	120	---
$C_{OB}$	$V_{CB} = 26$ V $f = 1.0$ MHz		75		pF
$P_G$ $IMD_1$	$V_{CC} = 26$ V $I_{CQ} = 2 \times 3000$ mA $f = 860$ MHz $P_{OUT} = 40$ W	11 -52	9.0		dB dBc
<b>Load Mismatch</b>	$V_{CC} = 26$ V $I_{CQ} = 2 \times 150$ mA $P_{OUT} = 150$ W PEP VSWR = 5:1 @ all phase angles	No Degradation in Output Power			

**TEST CIRCUIT LAYOUT**

**TEST CIRCUIT COMPONENT PART LIST**

PCB	ROGERS, $\epsilon_r = 2.55$ , Height = 31.25 mil 1 oz. Cu.
Balun 1,2	50 $\Omega$ Coaxial Cable Length 2.2" attached to 2 x 50 $\Omega$ printed microstrip transmission lines (see photomaster)
C1, C2, C23, C25	75pF Ceramic Chip ATC B
C3, C4, C21, C22	2 x 47pF Ceramic Chip, ATC B
C5, C16	0.8 – 8pF Variable, JOHANSON Giga – Trim
C6, C9	750pF Ceramic Chip, ATC B
C7, C10	39nF Ceramic Chip, ATCB
C8, C11, C24, C26	47 $\mu$ F, 50V Electrolytic
C13, C17	100 $\mu$ F, 50V Electrolytic
C12	9.1 pF Ceramic Chip, ATC A
C14, C18	39nF Ceramic Chip (OPTIONAL)
C15, C19	750pF Ceramic Chip (OPTIONAL)
C20	1.3pF Ceramic Chip, ATC B
L1, L4, L5, L8	12 Turns, #200 AWG, 0.15" I.D. (Tight)
L2, L3, L6, L7	4 Turns, #20AWG, 0.13" I.D. (1:1)
R1, R2, R3, R4	5 X 50 $\Omega$ Chip Resistor

PHOTOMASTER OF TEST CIRCUIT

