

NPN SILICON RF POWER TRANSISTOR

DESCRIPTION:

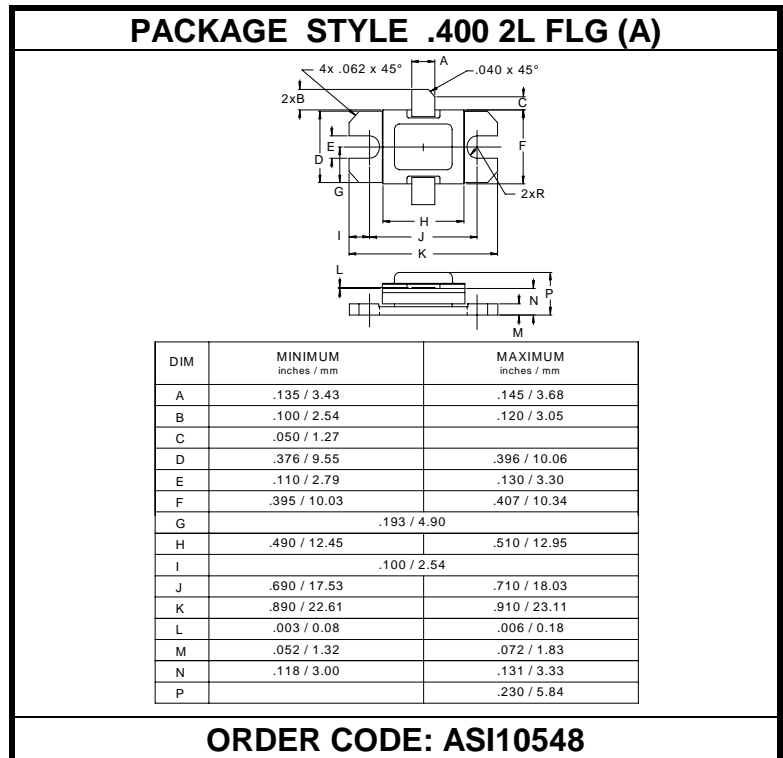
The **ASI AJT150** is a common base RF power transistor primarily designed for pulsed avionics applications such as, mode-s TCAS and JTIDS.

FEATURES:

- 960-1215 MHz
- Internal Input/Output Matching Network
- $P_G = 7.5$ dB at 150 W/ 1215 MHz
- **Omnigold™** Metalization System
- CB configuration, 35V DC operation

MAXIMUM RATINGS

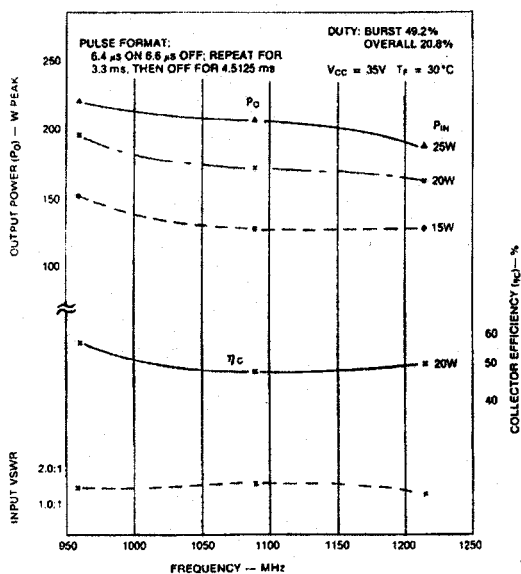
| | |
|---------------|-------------------|
| I_C | 16.5 A |
| V_{CE} | 35 V |
| P_{DISS} | 300 W |
| T_J | -65 °C to +200 °C |
| T_{STG} | -65 °C to +150 °C |
| θ_{JC} | 0.57 °C/W |


CHARACTERISTICS $T_C = 25$ °C

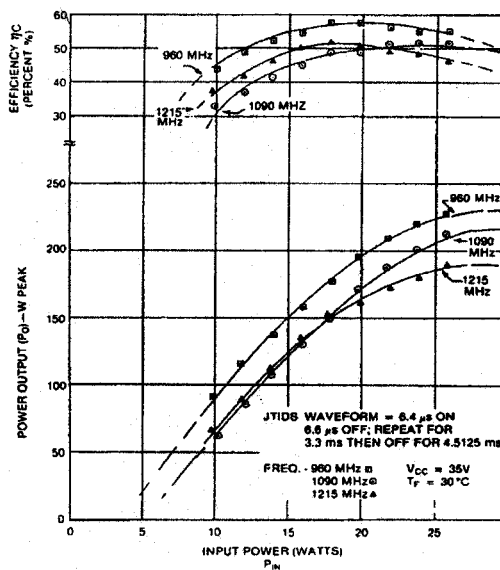
| SYMBOL | TEST CONDITIONS | MINIMUM | TYPICAL | MAXIMUM | UNITS |
|-------------------|-----------------------------------------------------------------------------|-----------|---------|---------|---------|
| BV_{CBO} | $I_C = 60$ mA | 55 | | | V |
| BV_{CES} | $I_C = 100$ mA $R_{BE} = 10$ Ω | 55 | | | V |
| BV_{EBO} | $I_E = 10$ mA | 3.5 | | | V |
| I_{CES} | $V_{BE} = 35$ V | | | 25 | mA |
| h_{FE} | $V_{CE} = 5.0$ V $I_C = 5.0$ A | 20 | | 200 | --- |
| P_G η_c | $V_{CC} = 35$ V $P_{OUT} = 150$ W $f = 960 - 1215$ MHz $P_{IN} = 26.7$ V | 7.5 40 | | | dB % |

TYPICAL PERFORMANCE

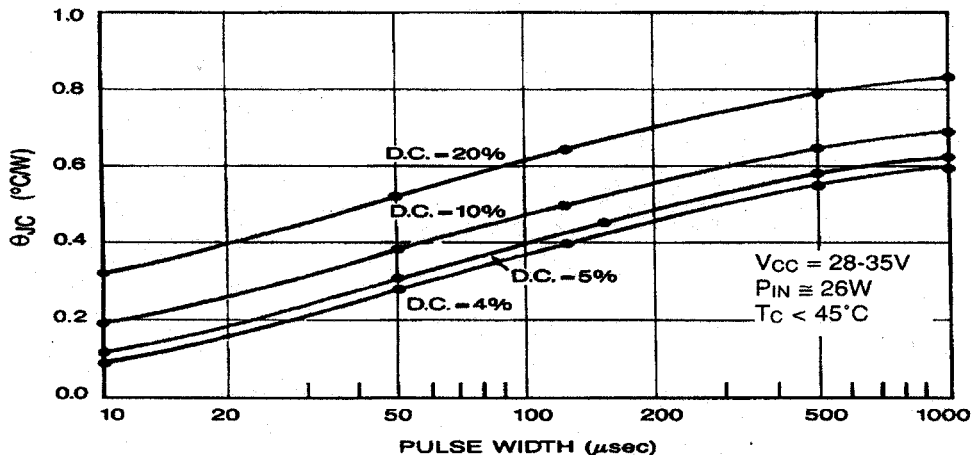
TYPICAL POWER INPUT, POWER OUTPUT & COLLECTOR EFFICIENCY vs FREQUENCY



POWER OUTPUT & COLLECTOR EFFICIENCY vs POWER INPUT



MAXIMUM THERMAL RESISTANCE vs PULSE WIDTH & DUTY CYCLE



IMPEDANCE DATA:

| FREQUENCY | Z_{IN} | Z_{CL} |
|-----------|--------------|--------------|
| 960 MHz | $2.1 + j3.8$ | $3.8 - j3.6$ |
| 1050 MHz | $1.2 + j2.5$ | $3.0 - j2.4$ |
| 1215 MHz | $1.7 + j2.4$ | $2.0 - j2.5$ |

$P_{in} = 26.7 W$
 $V_{CC} = 35 V$