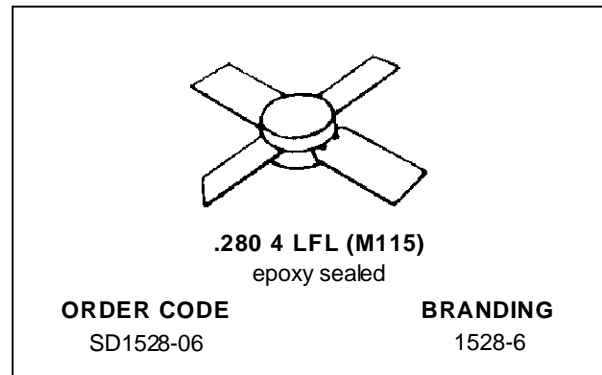
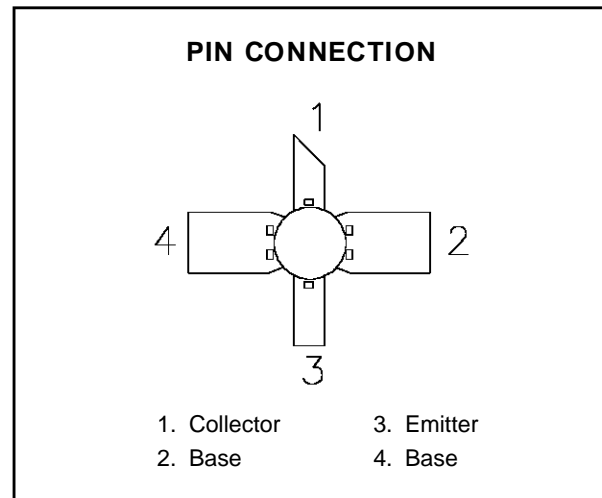


**RF & MICROWAVE TRANSISTORS
AVIONICS APPLICATIONS**

- DESIGNED FOR HIGH POWER PULSED IFF, DME, TACAN APPLICATIONS
- 20 W (typ.) IFF 1030 - 1090 MHz
- 15 W (min.) DME 1025 - 1150 MHz
- 15 W (typ.) TACAN 960 - 1215 MHz
- REFRACTORY GOLD METALLIZATION
- EMITTER BALLASTED AND LOW THERMAL RESISTANCE FOR RELIABILITY AND RUGGEDNESS
- 20:1 LOAD VSWR CAPABILITY @ SPECIFIED OPERATING CONDITIONS
- INPUT MATCHED, COMMON BASE CONFIGURATION


DESCRIPTION

The SD1528-06 is a gold metallized epitaxial silicon NPN power transistor. The SD1528-06 is designed for applications requiring high peak power and low duty cycles such as IFF, DME and TACAN. The SD1528-06 is packaged in the .280" input matched stripline package, resulting in improved broadband performance and low thermal resistance.


ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$)

| Symbol | Parameter | Value | Unit |
|------------|---------------------------|--------------|-------------|
| V_{CBO} | Collector-Base Voltage | 65 | V |
| V_{CES} | Collector-Emitter Voltage | 65 | V |
| V_{EBO} | Emitter-Base Voltage | 3.5 | V |
| I_C | Device Current | 1.5 | A |
| P_{DISS} | Power Dissipation | 87.5 | W |
| T_J | Junction Temperature | +200 | $^{\circ}C$ |
| T_{STG} | Storage Temperature | - 65 to +150 | $^{\circ}C$ |

THERMAL DATA

| | | | |
|---------------|----------------------------------|-----|---------------|
| $R_{TH(j-c)}$ | Junction-Case Thermal Resistance | 2.0 | $^{\circ}C/W$ |
|---------------|----------------------------------|-----|---------------|

SD1528-06

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

| Symbol | Test Conditions | | Value | | | Unit |
|-------------------|-----------------------|----------------------|-------|------|------|------|
| | | | Min. | Typ. | Max. | |
| BV _{CBO} | I _C = 10mA | I _E = 0mA | 65 | — | — | V |
| BV _{CES} | I _C = 25mA | V _{BE} = 0V | 65 | — | — | V |
| BV _{EBO} | I _E = 1mA | I _C = 0mA | 3.5 | — | — | V |
| I _{CES} | V _{CE} = 50V | I _E = 0mA | — | — | 2 | mA |
| h _{FE} | V _{CE} = 5V | I _C = .1A | 10 | — | 200 | — |

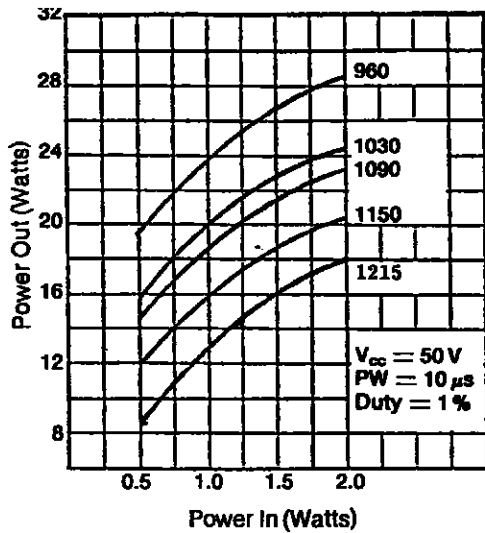
DYNAMIC

| Symbol | Test Conditions | | Value | | | Unit |
|------------------|--------------------|--|-------|------|------|------|
| | | | Min. | Typ. | Max. | |
| P _{OUT} | f = 1025 — 1150MHz | P _{IN} = 1.5 W V _{CE} = 50 V | 15 | — | — | W |
| G _P | f = 1025 — 1150MHz | P _{IN} = 1.5 W V _{CE} = 50 V | 10 | — | — | dB |
| η _C | f = 1025 — 1150MHz | P _{IN} = 1.5 W V _{CE} = 50 V | 30 | — | — | % |

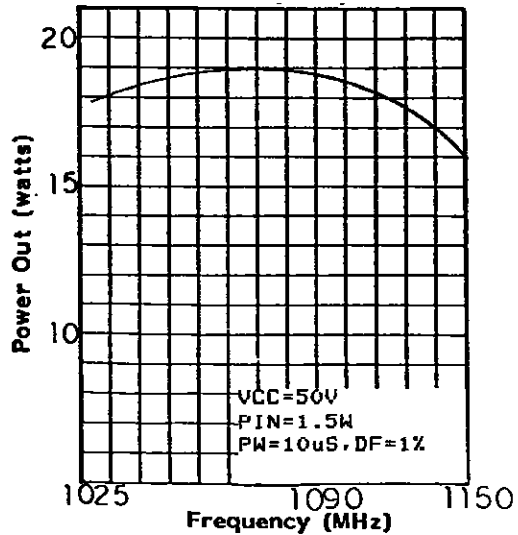
Note: Pulse Width = 10μsec, Duty Cycle = 1%

TYPICAL PERFORMANCE

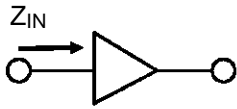
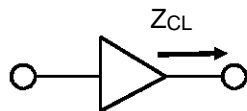
POWER OUTPUT vs POWER INPUT



POWER OUTPUT vs FREQUENCY



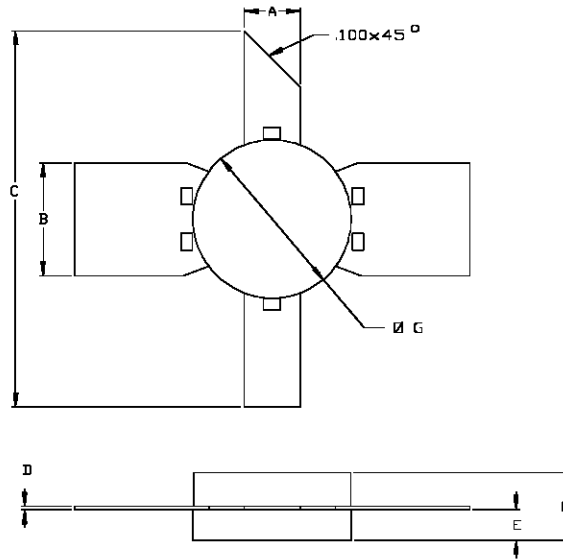
IMPEDANCE DATA

TYPICAL INPUT
IMPEDANCETYPICAL COLLECTOR
LOAD IMPEDANCE

| FREQ. | Z _{IN} (Ω) | Z _{CL} (Ω) |
|----------|---------------------|---------------------|
| 960 MHz | 2.5 + j 12.5 | 17.0 + j 15.5 |
| 1030 MHz | 3.5 + j 12.5 | 17.0 + j 14.5 |
| 1090 MHz | 3.0 + j 13.5 | 19.5 + j 12.5 |
| 1150 MHz | 3.5 + j 14.0 | 18.0 + j 12.0 |
| 1215 MHz | 5.0 + j 17.0 | 16.0 + j 12.0 |

PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0115



| SGS-THOMSON MICROELECTRONICS | | |
|------------------------------|----------------------|----------------------|
| | MINIMUM Inches/mm | MAXIMUM Inches/mm |
| A | .095/2,41 | .105/2,67 |
| B | .195/4,95 | .205/5,21 |
| C | 1.000/25,40 | |
| D | .004/0,10 | .007/0,18 |
| E | .050/1,27 | .065/1,65 |
| F | | .145/3,68 |
| G | .275/6,99 | .285/7,21 |
| | | |
| | | |
| | | |

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