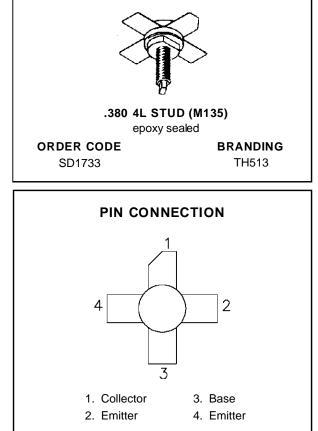


SD1733 (TH513)

RF & MICROWAVE TRANSISTORS HF SSB APPLICATIONS

- OPTIMIZED FOR SSB
- 30 MHz
- 50 VOLTS
- COMMON EMITTER
- GOLD METALLIZATION
- POUT = 75 W MIN. WITH 14.0 dB GAIN



DESCRIPTION

The SD1733 is a 50 V Class AB epitaxial silicon NPN planar transistor designed primarily for SSB and VHF communications. This device utilizes emitter ballasting for improved ruggedness and reliability.

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

| Symbol | Parameter Value | | Unit | |
|------------------|---------------------------|--------------|------|--|
| Vсво | Collector-Base Voltage | 110 | V | |
| V _{CEO} | Collector-Emitter Voltage | 55 | V | |
| V _{EBO} | Emitter-Base Voltage 4.0 | | V | |
| lc | Device Current | 3.25 | А | |
| PDISS | Power Dissipation | 127 | W | |
| TJ | Junction Temperature | +200 | °C | |
| T _{STG} | Storage Temperature | – 65 to +150 | °C | |

THERMAL DATA

| R _{TH(j-c)} Junction-Case Thermal Resistance | 2.0 | °C/W |
|---|-----|------|
|---|-----|------|

SD1733 (TH513)

ELECTRICAL SPECIFICATIONS ($T_{case} = 25^{\circ}C$)

STATIC

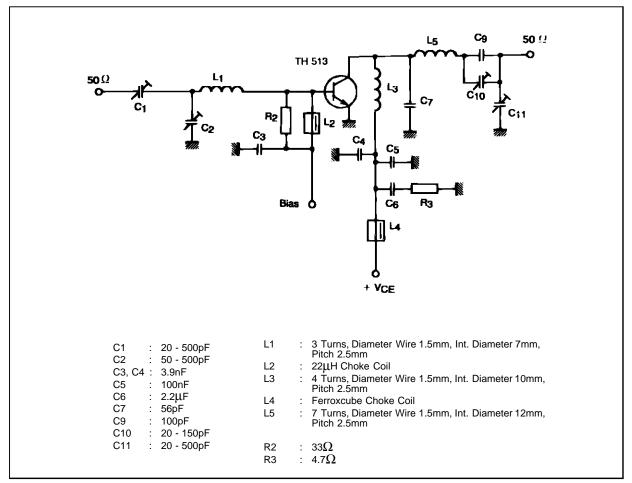
| Symbol | Test Conditions | Value | | | Unit | | |
|-------------------|-------------------------|---------------|------|------|------|----|---|
| | | Min. | Тур. | Max. | Onit | | |
| BV _{CES} | $I_{C} = 100 \text{mA}$ | $V_{BE} = 0V$ | | 110 | | | V |
| BV _{CEO} | $I_{C} = 200 \text{mA}$ | $I_B = 0mA$ | | 55 | — | _ | V |
| BV _{EBO} | $I_E = 10 mA$ | $I_C = 0 m A$ | | 4.0 | — | _ | V |
| hFE | $V_{CE} = 6V$ | $I_C = 1.4A$ | | 19 | _ | 50 | — |

DYNAMIC

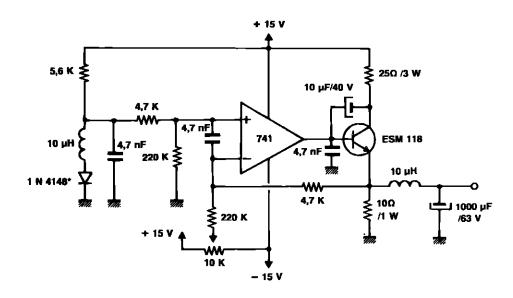
| Symbol | Test Conditions | Value | | | Unit | |
|------------------|-----------------------------|-----------------|------|------|------|-----|
| | Test Conditions | | Min. | Тур. | Max. | |
| Pout | f = 30 MHz | $V_{CE} = 50 V$ | 75 | | | W |
| G _P * | P _{OUT} = 75 W PEP | $V_{CE} = 50 V$ | 14 | — | — | dB |
| IMD* | Pout = 75 W PEP | $V_{CE} = 50 V$ | — | — | -30 | dBc |
| ηc* | Pout = 75 W PEP | $V_{CE} = 50 V$ | 37 | — | | % |
| Сов | f = 1 MHz | $V_{CB} = 50 V$ | _ | | 100 | рF |



TEST CIRCUIT



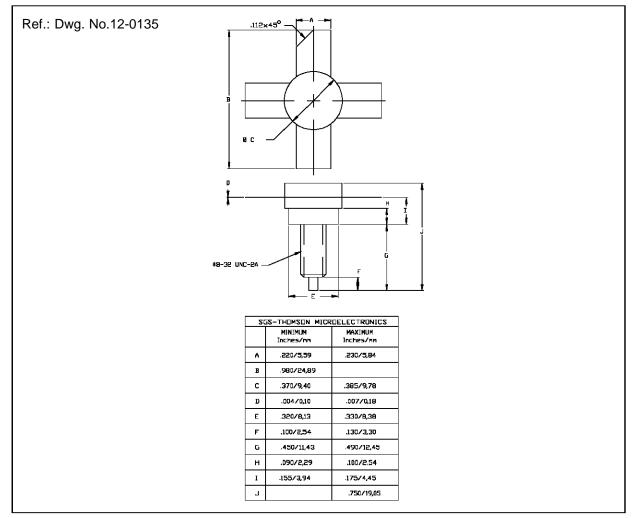
BIAS CIRCUIT





SD1733 (TH513)

PACKAGE MECHANICAL DATA



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