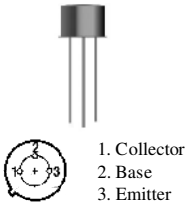
ADVANCED POWER TECHNOLOGY RF®

# SD1127

## RF & MICROWAVE TRANSISTORS
## VHF FM MOBILE APPLICATIONS

### Features

- **175 MHz**
- **12.5 VOLTS**
- **$P_{OUT}$ = 4.0 W MINIMUM**
- **$G_P$ = 12.0 dB**
- **GROUNDED EMITTER**




**TO-39**

### DESCRIPTION:

**The SD1127 is a epitaxial silicon NPN transistor designed primarily for VHF mobile communications. The chip of this transistor is mounted on a beryllia pill to isolate the collector lead and ground the emitter lead for high gain performance**

### ABSOLUTE MAXIMUM RATINGS **(Tcase = 25°C)**

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 36 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 18 | V |
| $V_{CES}$ | Collector-Emitter Voltage | 36 | V |
| $V_{EBO}$ | Emitter – Base Voltage | 4.0 | V |
| $I_C$ | Collector Current | .64 | A |
| $P_{tot}$ | Total Power Dissipation | 8.0 | W |
| $T_{STG}$ | Storage Temperature | -65 + 200 | °C |
| $T_J$ | Junction Temperature | +200 | °C |

### Thermal Data

| | | | |
|---|---|---|---|
| $R_{TH(J-C)}$ | Junction-case Thermal Resistance | 21.9 | °C/W |

## ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

### STATIC

| Symbol | Test Conditions | | Value | | | |
|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | Unit |
| $BV_{CES}$ | $I_C$ = 5 mA | $V_{BE}$ = 0 | 36 | --- | --- | V |
| $BV_{CEO}$ | $I_C$ = 10 mA | $I_B$ = 0 | 18 | --- | --- | V |
| $BV_{EBO}$ | $I_E$ = 1 mA | $I_C$ = 0 | 4.0 | --- | --- | V |
| $I_{CBO}$ | $V_{CB}$ = 15.0 V | $I_E$ = 0 | --- | --- | .25 | mA |
| $H_{FE}$ | $V_{CE}$ = 5.0 V | $I_C$ = 50 mA | 10 | --- | 100 | --- |

### DYNAMIC

| Symbol | Test Conditions | | Value | | | |
|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | Unit |
| $P_{OUT}$ | f =175 MHz | $V_{CE}$ =12.5 V | 4.0 | --- | --- | W |
| $G_{PE}$ | f =175 MHz | $V_{CE}$ =12.5 V | 12.0 | --- | --- | dB |
| Cob | f =1 MHz | $V_{CE}$ =15.0 V | --- | --- | 20.0 | pf |

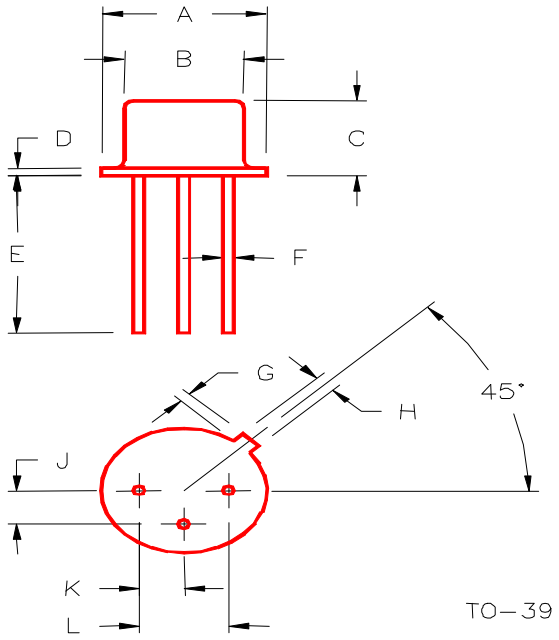
### IMPEDANCE DATA

| FREQ | $Z_{IN}(\Omega)$ | $Z_{CL}(\Omega)$ |
|---|---|---|
| 136 MHz | 3.0 – j3.8 | 12.8 – j11 |
| 155 MHz | 4.0 – j2.0 | 11 – j14.8 |
| 175 MHz | 4.3 – j5.8 | 13 – j20 |

**$P_{IN}$ = 0.2W**
**$V_{CC}$ = 12.6V**

## PACKAGE MECHANICAL DATA

PACKAGE STYLE M246




| | MINIMUM INCHES/MM | MAXIMUM INCHES/MM | | MINIMUM INCHES/MM | MAXIMUM INCHES/MM |
|---|---|---|---|---|---|
| A | .350/8,89 | .370/9,40 | J | .095/2,41 | .105/2,67 |
| B | .315/8,00 | .335/8,51 | K | .095/2,41 | .105/2,67 |
| C | .240/6,10 | .260/6,60 | L | .190/4,83 | .210/5,33 |
| D | .015/0,38 | .045/1,14 | | | |
| E | .500/12,70 | | | | |
| F | .016/0,41 | .019/0,48 | | | |
| G | .029/0,74 | .040/1,02 | | | |
| H | .028/0,71 | .034/0,86 | | | |