HG Semiconductors

HG RF POWER TRANSISTOR

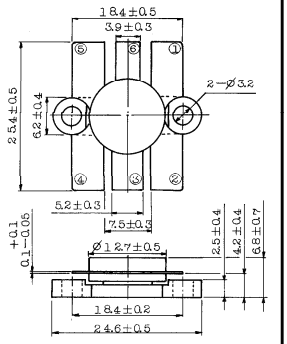
# 2sc3147

ROHS Compliance,Silicon NPN POWER TRANSISTOR

VHF BAND POWER AMPLIFIER APPLICATIONS

- Output Power : Po = 50W (Min.)
  (f = 175MHz, $V_{CC}$ = 12.5V, $\eta_C$ = 70% (Typ.)
- High Efficiency : $\eta_C$ = 70% (Typ.)

Unit in mm




1. EMITTER 4. EMITTER
2. EMITTER 5. EMITTER
3. BASE 6. COLLECTOR

| | |
|---|---|
| JEDEC | — |
| EIAJ | — |
| TOSHIBA | 2-13C1A |

Weight : 5.5g

MAXIMUM RATINGS (Tc = 25°C)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 36 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 16 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 4 | V |
| Collector Current | $I_C$ | 14 | A |
| Collector Power Dissipation | $P_C$ | 150 | W |
| Junction Temperature | $T_j$ | 175 | °C |
| Storage Temperature Range | $T_{stg}$ | −65~175 | °C |

ELECTRICAL CHARACTERISTICS (Tc = 25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C$ = 20mA, $I_E$ = 0 | 36 | — | — | V |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C$ = 50mA, $I_B$ = 0 | 16 | — | — | V |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E$ = 1mA, $I_C$ = 0 | 4 | — | — | V |
| DC Current Gain | $h_{FE}$ | $V_{CE}$ = 5V, $I_C$ = 5A * | 10 | — | — | — |
| Collector Output Capacitance | $C_{ob}$ | $V_{CB}$ = 12.5V, $I_E$ = 0<br>f = 1MHz | — | — | 330 | pF |
| Output Power | Po | $V_{CC}$ = 12.5V, f = 175MHz<br>Pi = 10W, $\eta_C \geqq$ 60% | 50 | 60 | — | W |
| Series Equivalent Input Impedance | $Z_{in}$ | $V_{CC}$ = 12.5V<br>f = 175MHz, Po = 50W | — | 1.1<br>+j3.0 | — | Ω |
| Series Equivalent Output Impedance | $Z_{out}$ | | — | 1.5<br>+j2.5 | — | Ω |

* Pulse Test : Pulse Width ≦ 100μs, Duty Cycle ≦ 3%

Note : Above parameters , ratings , limits and conditions are subject to change.