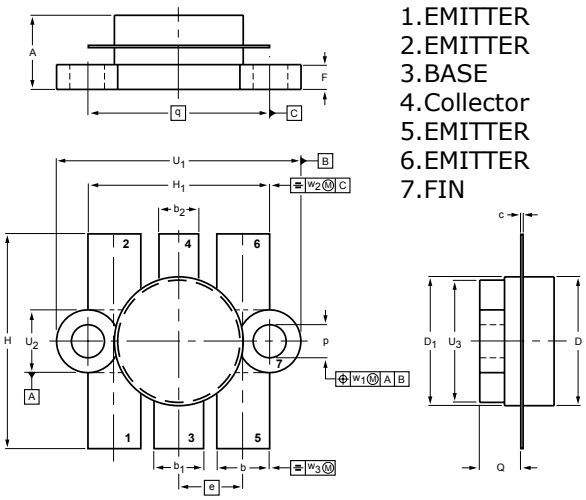
HG Semiconductors

# HG RF POWER TRANSISTOR
# 2SC2904
## ROHS Compliance,Silicon NPN POWER TRANSISTOR

## DESCRIPTION

Designed primarily for SSB linear power amplifier applications



1.EMITTER
2.EMITTER
3.BASE
4.Collector
5.EMITTER
6.EMITTER
7.FIN

## FEATURES

- Specified 12.5V, 28MHz Characteristics
- $P_O$=100W PEP
- $G_P$ = 11 Typ. min. at 100 W/28 MHz
- IMD3 = -30 dBc max. at 100 W(PEP)
- Omnigold™ Metalization System

## DIMENSIONS

| UNIT | A | b | $b_1$ | $b_2$ | c | D | $D_1$ | e | F | H | $H_1$ | p | Q | q | $U_1$ | $U_2$ | $U_3$ | $w_1$ | $w_2$ | $w_3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | 7.39<br>6.32 | 5.59<br>5.33 | 5.34<br>5.08 | 4.07<br>3.81 | 0.18<br>0.07 | 12.86<br>12.59 | 12.83<br>12.57 | 6.48 | 2.54<br>2.28 | 22.10<br>21.08 | 18.55<br>18.28 | 3.31<br>2.97 | 4.58<br>3.98 | 18.42 | 25.23<br>23.95 | 6.48<br>6.07 | 12.76<br>12.06 | 0.51 | 1.02 | 0.26 |
| inches | 0.291<br>0.249 | 0.220<br>0.210 | 0.210<br>0.200 | 0.160<br>0.150 | 0.007<br>0.003 | 0.505<br>0.496 | 0.505<br>0.495 | 0.255 | 0.100<br>0.090 | 0.870<br>0.830 | 0.730<br>0.720 | 0.130<br>0.117 | 0.180<br>0.157 | 0.725 | 0.993<br>0.943 | 0.255<br>0.239 | 0.502<br>0.475 | 0.02 | 0.04 | 0.01 |

## MAXIMUM RATINGS

| CHARACTERISTICS | SYMBOL | RATINGS | UNITS |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 55 | V |
| Collector-Emitter Voltage | $V_{CES}$ | 18 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 18 | V |
| Collector Current | $I_C$ | 20 | A |
| Emitter-Base Voltage | $V_{EBO}$ | 4 | V |
| Collector Power Dissipation | $P_{DISS}$ | 280 | W |
| Junction Temperature | $T_J$ | -65 to 175 | °C |
| Storage Temperature Range | $T_{STG}$ | -65 to 175 | °C |

## ELECTRICAL CHARACTERISTICS

| CHARACTERISTICS | SYMBOL | TEST CONDITIONS | MIN. | TYP. | MAX. | UNITS |
|---|---|---|---|---|---|---|
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C$=100mA,$I_B$=0 | 18 | - | - | V |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CES}$ | $I_C$=100mA,$V_{EB}$=0 | 55 | - | - | V |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E$=1mA,$I_C$=0 | 4 | - | - | V |
| DC Current Gain | $h_{FE}$ | $V_{CE}$=5V,$I_C$=10A | 10 | - | 150 | |
| Collector Output Capacitance | $C_{ob}$ | $V_{CB}$=12.5V,$I_E$=0<br>f=1MHz | - | 600 | - | pF |
| Power Gain | $G_P$ | $V_{CC}$=12.5V,$P_{OUT}$=100W<br>Iidle=100mA,f=28MHz | 11.0 | 13.2 | - | dB |
| Collector Efficiency | $\eta_C$ | | 35 | - | | % |
| Intermodulation Distortion | IMD3 | | - | - | -30 | dBc |
| Series Equivalent Input Impedance | $Z_{IN}$ | $V_{CC}$=12.5V $P_{OUT}$=100W<br>f = 28 MHz | - | 1.65 – j0.95 | - | Ω |
| Series Equivalent Output Impedance | $Z_{OUT}$ | | - | 1.65 – J1.0 | - | Ω |

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