HG Semiconductors

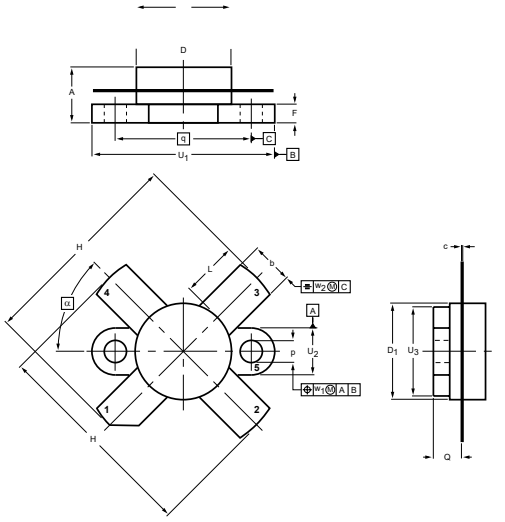
# HG RF POWER TRANSISTOR
# MRF422
## ROHS Compliance,Silicon NPN POWER TRANSISTOR

## DESCRIPTION

Designed primarily for applications as high-power linear power amplifier from 2.0 to 30MHz

## FEATURES

- Specified 28V, 30MHz Characteristic
- $P_O$ = 150W PEP
- $G_P$ = 13 Typ. min. at 150 W/30MHz
- IMD3 = -30 dBc max. at 150 W(PEP)
- Omnigold™ Metalization System



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

## DIMENSIONS

NOTE: ALL ELECTRODES ARE ISOLATED FROM FLANCE.

| UNIT | A | b | c | D | $D_1$ | F | H | L | p | Q | q | $U_1$ | $U_2$ | $U_3$ | $w_1$ | $w_2$ | α |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | 7.27<br>6.17 | 5.82<br>5.56 | 0.16<br>0.10 | 12.86<br>12.59 | 12.83<br>12.57 | 2.67<br>2.41 | 28.45<br>25.52 | 7.93<br>6.32 | 3.30<br>3.05 | 4.45<br>3.91 | 18.42 | 24.90<br>24.63 | 6.48<br>6.22 | 12.32<br>12.06 | 0.51 | 1.02 | 45° |
| inches | 0.286<br>0.243 | 0.229<br>0.219 | 0.006<br>0.004 | 0.506<br>0.496 | 0.505<br>0.495 | 0.105<br>0.095 | 1.120<br>1.005 | 0.312<br>0.249 | 0.130<br>0.120 | 0.175<br>0.154 | 0.725 | 0.98<br>0.97 | 0.255<br>0.245 | 0.485<br>0.475 | 0.02 | 0.04 | |

## MAXIMUM RATINGS

| CHARACTERISTICS | SYMBOL | RATINGS | UNITS |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 80 | V |
| Collector-Emitter Voltage | $V_{CES}$ | 80 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 40 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 3 | V |
| Collector Current | $I_C$ | 20 | A |
| Collector Power Dissipation | $P_{DISS}$ | 290 | W |
| Junction Temperature | $T_J$ | -65 to 150 | °C |
| Storage Temperature Range | $T_{STG}$ | -65 to 150 | °C |

## ELECTRICAL CHARACTERISTICS

| CHARACTERISTICS | SYMBOL | TEST CONDITIONS | MIN. | TYP. | MAX. | UNITS |
|---|---|---|---|---|---|---|
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C$=200mA,$I_B$=0 | 35 | - | - | V |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CES}$ | $I_C$=100mA,$V_{EB}$=0 | 80 | - | - | V |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E$=1mA,$I_C$=0 | 3 | - | - | V |
| DC Current Gain | $h_{FE}$ | $V_{CE}$=5V,$I_C$=5A | 15 | 30 | 120 | |
| Collector Output Capacitance | $C_{ob}$ | $V_{CB}$=12.5V,$I_E$=0<br>f=1MHz | - | 420 | - | pF |
| Power Gain | $G_P$ | $V_{CC}$=28V,$P_{OUT}$=150W<br>$I_{CQ}$=150mA,f=30MHz | 10 | 13 | - | dB |
| Collector Efficiency | $\eta_C$ | | - | 45 | | % |
| Intermodulation Distortion | IMD3 | | - | -33 | -30 | dBc |
| Series Equivalent Input Impedance | $Z_{IN}$ | $V_{CC}$=28V $P_{OUT}$=150W<br>f=30MHz | - | 0.81 – j0.26 | - | Ω |

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