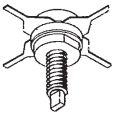
HG Semiconductors

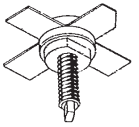
HG RF POWER TRANSISTOR
2N5641
ROHS Compliance,Silicon NPN POWER TRANSISTOR

7 W/20 W/40 W, 28 V, VHF POWER TRANSISTOR

These HG devices are epitaxial silicon NPN-planar transistors designed primarily for 12.5 volt AM class C rf amplifiers functional in the aviation band 118-136 MHz and for 28V FM class C rf amplifiers utilized in ground station transmitters. These devices utilize ballasted emitter resistors and improved metalization systems to achieve optimum load mismatch capability.



MT-71



MT-72

FEATURES:

- Designed for VHF, 12.5V AM and 28V FM transmitters
- Withstands severe mismatch under operating conditions
- Low Inductance stripline package
- All leads electrically isolated from stud

ABSOLUTE MAX. RATINGS (+25°C except where noted)

Symbol	Characteristic	2N5641	2N5642	2N5643
V_{CBO}	Collector to Base Voltage	65.V	65.V	65.V
V_{CEO}	Collector to Emitter Voltage	35.V	35.V	35.V
V_{EBO}	Emitter to Base Voltage	4.V	4.V	4.V
I_C (max)	Continuous Collector Current	1.0A	3.0A	5.0A
P_D	Total Dissipation at 25°C Stud	15.W	30.W	60.W
ϕ_{JC}	Thermal Resistance (Junction to Stud)	11.7°C/W	5.8°C/W	2.9°C/W
T_J	Junction Temperature	−65°C to 200°C	−65°C to 200°C	−65°C to 200°C
T_{stg}	Storage Temperature	−65°C to 200°C	−65°C to 200°C	−65°C to 200°C
Pkg	Package	MT71	MT72	MT72

ELECTRICAL CHARACTERISTICS (TA = 25°C)

Symbol	Characteristic	Test Conditions	2N5641 Min.	2N5641 Max.	2N5642 Min.	2N5642 Max.	2N5643 Min.	2N5643 Max.
BV_{CEO}	Collector to Emitter Breakdown Voltage	I_C = 200mA, I_B = 0 Pulsed through 25mH	35.0V	–	35.0V	–	35.0V	–
BV_{CES}	Collector to Emitter Breakdown Voltage	I_C = 200mA, V_{BE} = 0 Pulsed through 25mH	65.0V	–	65.0V	–	65.0V	–
BV_{EBO}	Emitter to Base Breakdown Voltage	I_E = 5mA, I_C = 0 I_E = 10mA, I_C = 0	4.0V	–	4.0V	–	4.0V	–
I_{CBO}	Collector Cutoff Current	V_{CB} = 30V, I_E = 0	–	1.0mA	–	1.0mA	–	1.0mA
h_{FE}	DC Current Gain	V_{CE} = 5V, I_C = 100mA V_{CE} = 5V, I_C = 200mA V_{CE} = 5V, I_C = 500mA	5.0	–	5.0	–	5.0	–
f_T	Gain Bandwidth Product	V_{CE} = 10V, I_C = 100mA V_{CE} = 10V, I_C = 200mA V_{CE} = 10V, I_C = 500mA f_o = 100mHz	300.mHz	–	250.mHz	–	200.mHz	–
C_{ob}	Output Capacitance	V_{CB} = 30V, I_E = 0V f_o = 1.0mHz	–	15. pF	–	35. pF	–	65. pF
P_{out}	Power Output Class C	f_o = 175mHz, V_{CE} = 28V	7.W	–	20.W	–	40.W	–
P_g	Power Gain Class C	f_o = 175mHz, V_{CE} = 28V	8.4 dB	–	8.2 dB	–	7.6 dB	–
η	Collector Efficiency Class C	f_o = 175mHz, V_{CE} = 28V	60.%	–	60.%	–	60.%	–

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