

MS1406

**RF & MICROWAVE TRANSISTORS
FM MOBILE APPLICATIONS**

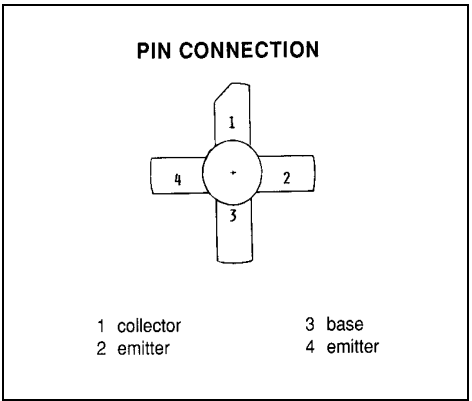
Features

- 175MHz
- 12.5 VOLTS
- GOLD METALIZATION
- Pout = 20WATTS
- Gp = 8.0 dB MINIMUM
- COMMON EMITTER CONFIGURATION



DESCRIPTION:

The MS1406 is a silicon NPN transistor designed for 12.5V AM Class C amplifiers operating in the 118–136 MHz aviation band and for 28V FM Class C amplifiers used in ground station transmitters. Diffused emitter ballast and gold metalization provide maximum ruggedness and reliability.



ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)

Symbol	Parameter	Value	Unit
V _{CBO}	Collector- Base Voltage	65	V
V _{CEO}	Collector-Emitter Voltage	35	V
V _{EBO}	Emitter-Base Voltage	4.0	V
I _C	Continuous Collector Current	3.0	A
P _D	Total Dissipation	30	W
T _j	Junction Temperature	200	°C
T _{STG}	Storage Temperature	-65 to +200	°C

Thermal Data

R _{TH(J-C)}	Thermal Resistance Junction-case	5.8	°C/W
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ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CES}	I_C = 200 mA	V_{BE} = 0 mA	65	---	---	V
BV_{CEO}	I_C = 200 mA	I_B = 0 mA	35	---	---	V
BV_{EBO}	I_E = 10 mA	I_C = 0 mA	4.0	---	---	V
I_{CB0}	V_{CB} = 30 V	I_E = 0 mA	---	---	1.0	mA
h_{FE}	V_{CE} = 5 V	I_C = 200 mA	10	---	200	---

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 175MHz	P_{IN} = 3.0W	V_{CE} = 28V	20	---	---	W
G_P	f = 175MHz	P_{IN} = 3.0W	V_{CE} = 28V	8.2	---	---	dB
η_C	f = 175MHz	P_{IN} = 3.0W	V_{CE} = 28V	60	---	---	%
C_{OB}	V_{CB} = 30V	f = 1 MHz		---	---	35	pf

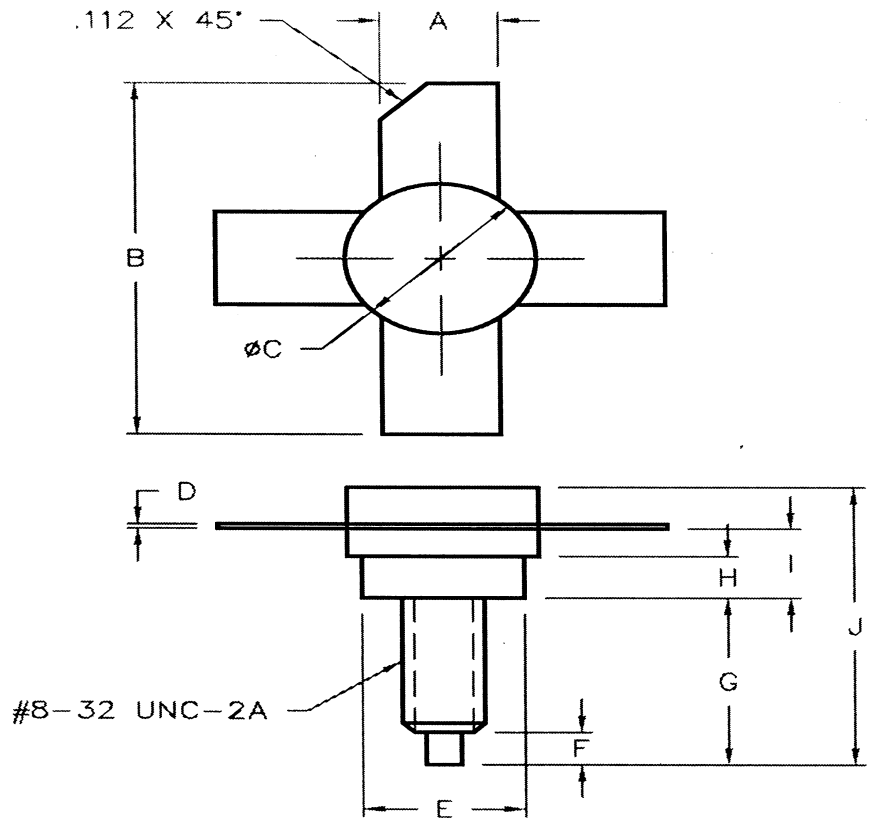
IMPEDANCE DATA

FREQ	Z _{IN} (Ω)	Z _{CL} (Ω)
175 MHz	1.1 + j1.15	9.0 - j9.60

P_{IN} = 3.0W
V_{CC} = 28V

PACKAGE MECHANICAL DATA

PACKAGE STYLE M135



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.220/5,59	.230/5,84	I	.155/3,94	.175/4,45
B	.980/24,89		J		.750/19,05
C	.370/9,40	.385/9,78			
D	.004/0,10	.007/0,18			
E	.320/8,13	.330/8,38			
F	.100/2,54	.130/3,30			
G	.450/11,43	.490/12,45			
H	.090/2,29	.100/2,54			