



**THE DATASHEET OF
MS1649**



MS1649

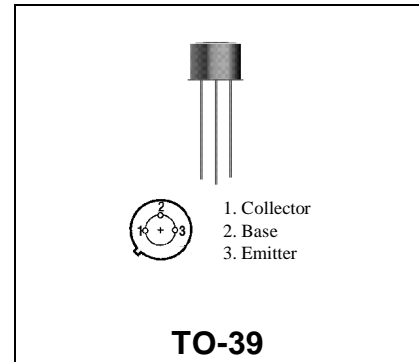
**RF & MICROWAVE TRANSISTORS
UHF CLASS C MOBILE APPLICATIONS**

Features

- 470 MHz
- $P_{OUT} = 3W$
- $G_P = 9.5dB$ MINIMUM
- COMMON EMITTER CONFIGURATION

DESCRIPTION:

The MS1649 is a 12.5V epitaxial NPN planar transistor designed primarily for UHF communications. This device is packaged in a grounded emitter TO-39 package for increased power gain and optimum heat dissipation.



ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	36	V
V _{CEO}	Collector-Emitter Voltage	16	V
V _{EBO}	Emitter-Base Voltage	3.5	V
I _C	Collector Current	1.0	A
P _{TOT}	Total Power Dissipation	7.8	W
T _{STG}	Storage Temperature	-65 to +200	°C
T _J	Junction Temperature	+200	°C

Thermal Data

R _{TH(J-C)}	Thermal Resistance Junction-Case	35.0	°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 = 50mA	V_{BE} = 0	36	---	---	V
BV_{CEO}	I_C = 50mA	I_B = 0	16	---	---	V
BV_{EBO}	I_E = 1mA	I_C = 0	3.5	---	---	V
I_{CES}	V_{CB} = 12.5V	V_{BE} = 0	---	---	1.0	mA
H_{FE}	V_{CE} = 5.0V	I_C = 100mA	20	---	150	---

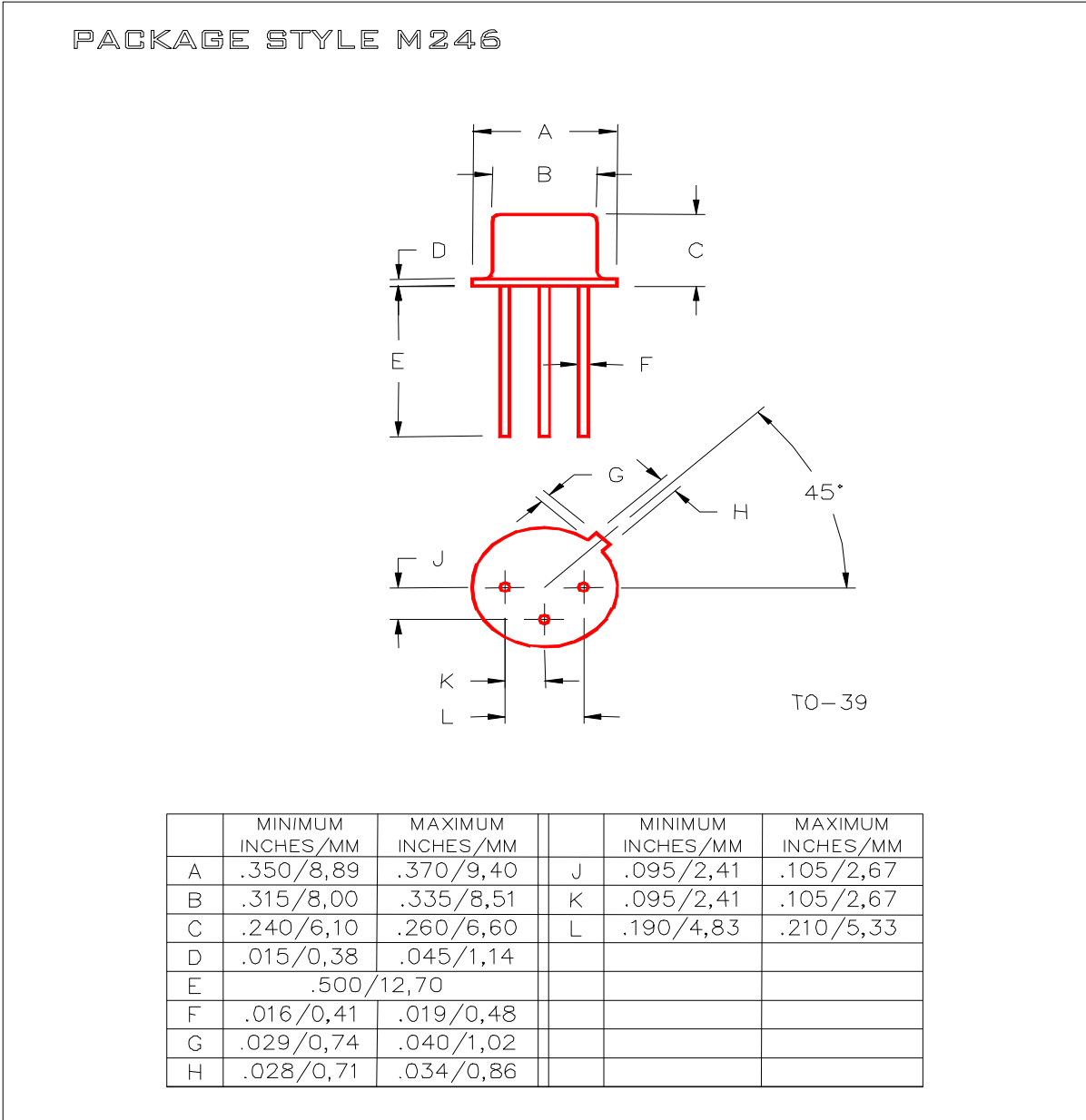
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
G_{PE}	f = 470MHz	P_{OUT} = 3.0W	V_{CC} = 12.5V	9.5	---	---	dB
η	f = 470MHz	P_{OUT} = 3.0W	V_{CC} = 12.5V	50	---	---	%
C_{OB}	f = 1.0MHz	V_{CB} = 12.5 V		---	---	12	pf

IMPEDANCE DATA

FREQ	Z _{IN} (Ω)	Z _{CL} (Ω)
175 MHz	3.5 + j1.2	14.0 + j10.0
470 MHz	3.3 + j3.2	11.0 + j5.7

PACKAGE MECHANICAL DATA



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