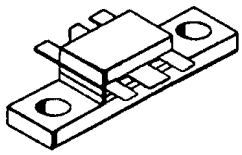
ADVANCED POWER TECHNOLOGY RF®

140 COMMERCE DRIVE
MONTGOMERYVILLE, PA
18936-1013
PHONE: (215) 631-9840
FAX: (215) 631-9855

MS1451

RF & MICROWAVE TRANSISTORS
800-960 MHz BASE STATION APPLICATIONS



.230 6LFL (M142)
epoxy sealed

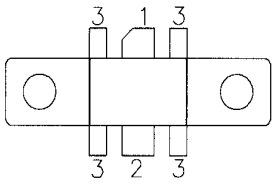
Features

- 800-960 MHz
- 24 VOLTS
- CLASS AB LINEAR OPERATION
- P_{OUT} = 15 WATTS
- G_P = 8.0 dB MINIMUM
- COMMON EMITTER CONFIGURATION

DESCRIPTION:

The MS1451 is a gold metallized silicon NPN planar transistor designed for high linearity Class AB operation in cellular base station applications. The MS1451 is designed as a medium power output device or as the driver for MS1452. Diffused emitter ballast resistors provide thermal stability and reliability under Class AB linear operation.

PIN CONNECTION



1. Collector
2. Emitter
3. Base

ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	48	V
V_{CEO}	Collector-Emitter Voltage	30	V
V_{CES}	Collector-Emitter Voltage	45	V
V_{EBO}	Emitter-Base Voltage	3.5	V
P_{DISS}	Power Dissipation	29	W
I_C	Device Current	2.5	A
T_J	Junction Temperature	+200	°C
T_{STG}	Storage Temperature	-65 to +150	°C

Thermal Data

$R_{TH(J-C)}$	Thermal Resistance Junction-case	6.0	°C/W

ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BVcbo	I_C = 50 mA	I_E = 0 mA	48	---	---	V
BVceo	I_C = 20 mA	I_B =0 mA	25	---	---	V
BVebo	I_E = 5 mA	I_C = 0 mA	3.5	---	---	V
Icbo	V_{CB} = 24 V	I_E = 0 mA	---	---	1.0	mA
H_{FE}	V_{CE} = 10 V	I_C = 100mA	20	---	100	---

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 960 MHz	P_{IN} = 2.4W	V_{CC} = 24V	15	---	---	W
G_P	f = 960 MHz	P_{IN} = 2.4W	V_{CC} = 24V	8	---	---	dB
η_C	f = 960 MHz	P_{IN} = 2.4 W	V_{CC} = 24V	45	---	---	%
C_{ob}	f = 1 MHz	V_{CB} = 24V		---	---	24	pf

Conditions: VCC = 24 V ICQ = 75 mA

IMPEDANCE DATA

FREQ	$Z_{IN}(\Omega)$	$Z_{CL}(\Omega)$
900 MHz	1.3 + j1.98	4.0 + j5.5
930 MHz	1.42 + j2.3	3.18 + j5.0
960 MHz	1.45 + j2.62	2.96 + j4.07

P_{OUT} = 15W
V_{CE} = 24V
I_{CQ} = 75mA

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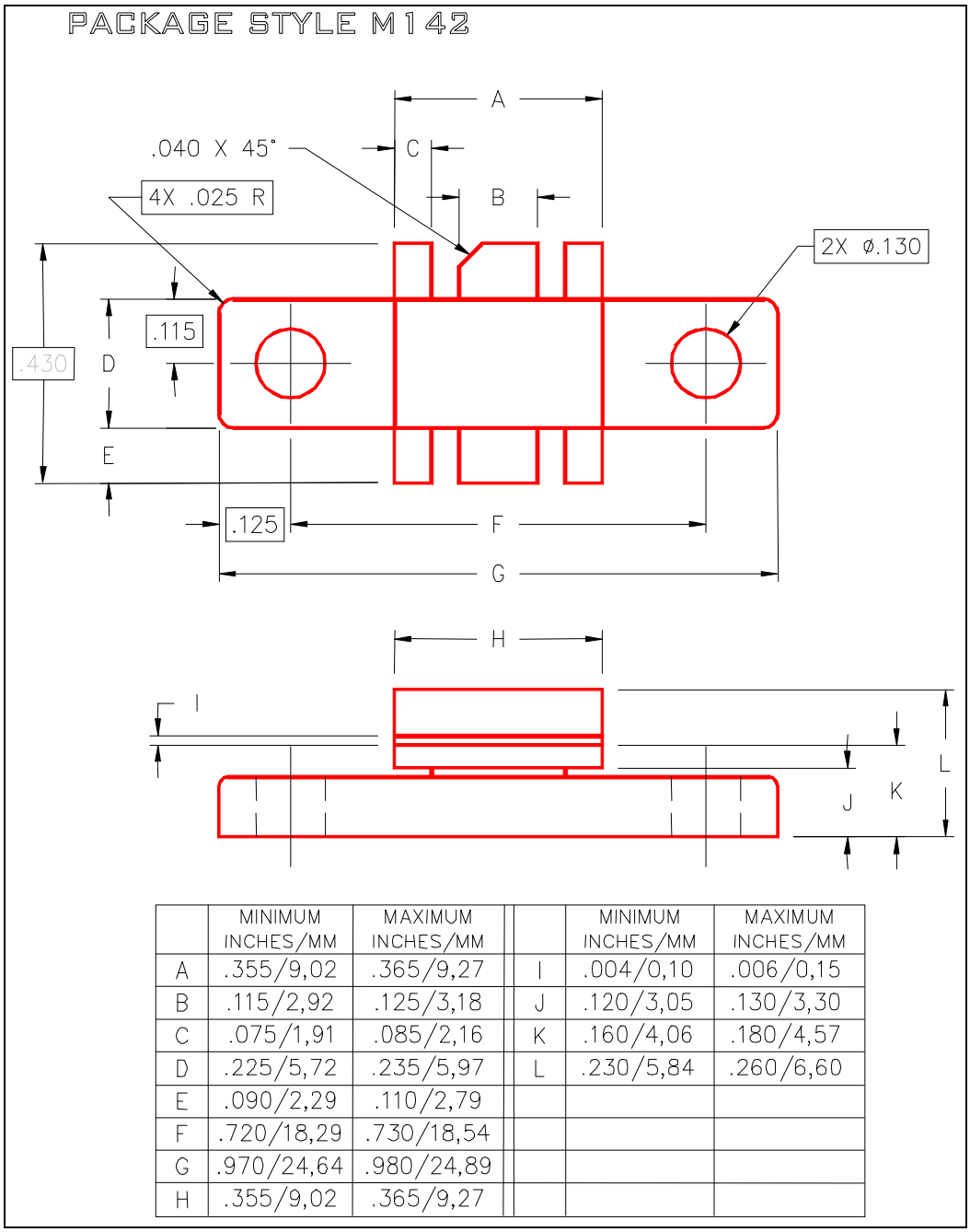
PACKAGE MECHANICAL DATA



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.355/9,02	.365/9,27	I	.004/0,10	.006/0,15
B	.115/2,92	.125/3,18	J	.120/3,05	.130/3,30
C	.075/1,91	.085/2,16	K	.160/4,06	.180/4,57
D	.225/5,72	.235/5,97	L	.230/5,84	.260/6,60
E	.090/2,29	.110/2,79			
F	.720/18,29	.730/18,54			
G	.970/24,64	.980/24,89			
H	.355/9,02	.365/9,27			