



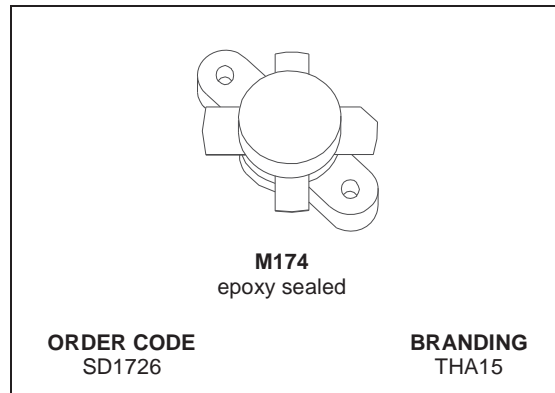


## SD1726 (THA15)

### RF & MICROWAVE TRANSISTORS HF SSB APPLICATIONS

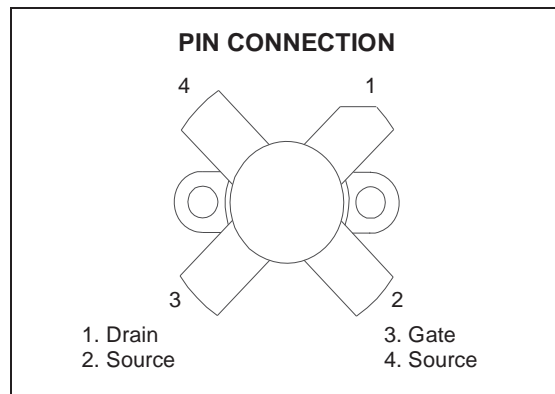
#### FEATURES

- OPTIMIZED FOR SSB
- 30 MHz
- 50 V
- IMD-30 dB
- COMMON EMITTER
- GOLD METALLIZATION
- $P_{OUT} = 150$  W PEP MIN. WITH 14 dB GAIN



#### DESCRIPTION

The SD1726 is a 50 V epitaxial silicon NPN planar transistor designed primarily for SSB communications. This device utilizes emitter ballasting to achieve extreme ruggedness under severe operating conditions.



#### ABSOLUTE MAXIMUM RATINGS ( $T_{CASE} = 25$ °C)

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collecto-Base Voltage	110	V
$V_{CEO}$	Collector-Emitter Voltage	55	V
$V_{EBO}$	Emitter-Base Voltage	4.0	V
$I_C$	Drain Current	20	A
$P_{DISS}$	Power Dissipation	318	W
$T_j$	Max. Operating Junction Temperature	+200	°C
$T_{STG}$	Storage Temperature	-65 to +150	°C

#### THERMAL DATA

$R_{th(j-c)}$	Junction -Case Thermal Resistance at $T_{CASE} = 70$ °C	0.75	°C/W
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## SD1726 (THA15)

### ELECTRICAL SPECIFICATION ( $T_{CASE} = 25\text{ }^{\circ}\text{C}$ )

#### STATIC

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$BV_{CBO}$	$I_C = 100\text{ mA}$ $I_E = 0\text{ mA}$	110			V
$BV_{CES}$	$I_C = 100\text{ mA}$ $V_{BE} = 0\text{ V}$	110			V
$BV_{CEO}$	$I_C = 100\text{ mA}$ $I_B = 0\text{ mA}$	55			V
$BV_{EBO}$	$I_E = 10\text{ mA}$ $I_C = 0\text{ mA}$	4.0			V
$I_{CEO}$	$V_{CE} = 30\text{ V}$ $I_E = 0\text{ mA}$			5	mA
$I_{CES}$	$V_{CE} = 60\text{ V}$ $I_E = 0\text{ mA}$			5	mA
$h_{FE}$	$V_{CE} = 6\text{ V}$ $I_C = 1.4\text{ A}$	18		43.5	

#### DYNAMIC

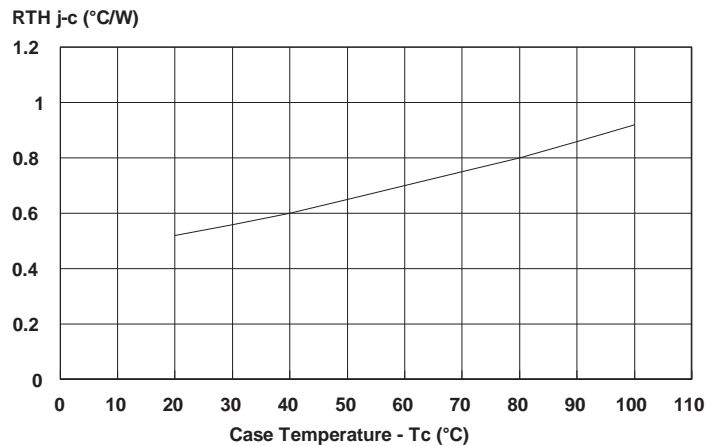
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$P_{OUT}$	$V_{CE} = 50\text{ V}$ $I_{CQ} = 100\text{ mA}$ $f = 30\text{ MHz}$	150			W
$G_P^*$	$V_{CE} = 50\text{ V}$ $I_{CQ} = 100\text{ mA}$ $P_{OUT} = 150\text{ W PEP}$	14			dB
$IMD^*$	$V_{CE} = 50\text{ V}$ $I_{CQ} = 100\text{ mA}$ $P_{OUT} = 150\text{ W PEP}$			-30	dBc
$\eta_D^*$	$V_{CE} = 50\text{ V}$ $I_{CQ} = 100\text{ mA}$ $P_{OUT} = 150\text{ W PEP}$	37			%
$G_{OB}$	$V_{CB} = 50\text{ V}$ $f = 1\text{ MHz}$			220	pF

Note: The SD1726 is also usable in Class A at 40 V. Typical performance is:

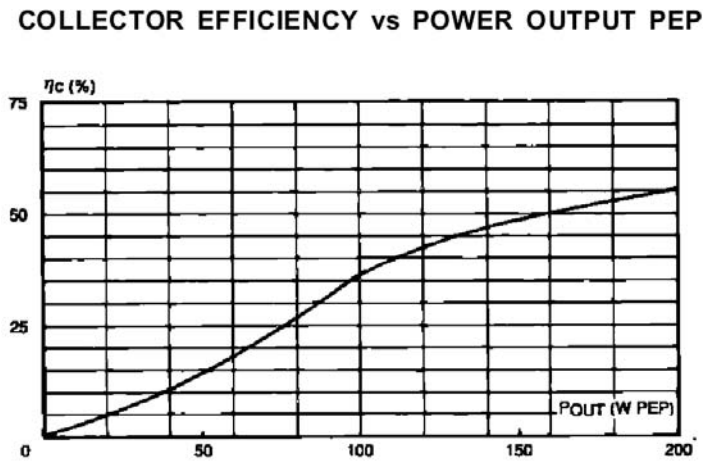
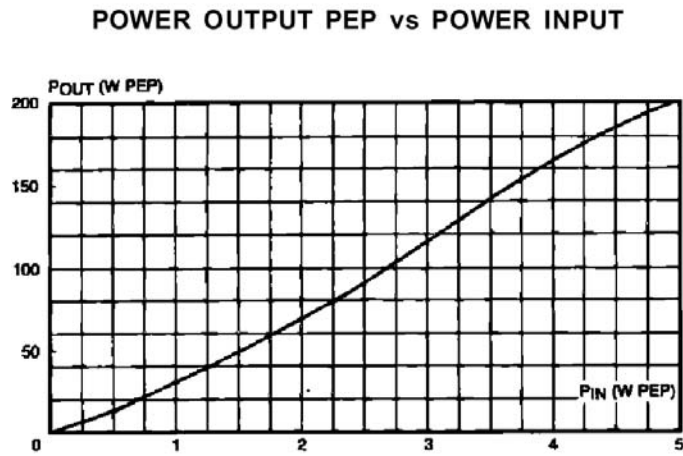
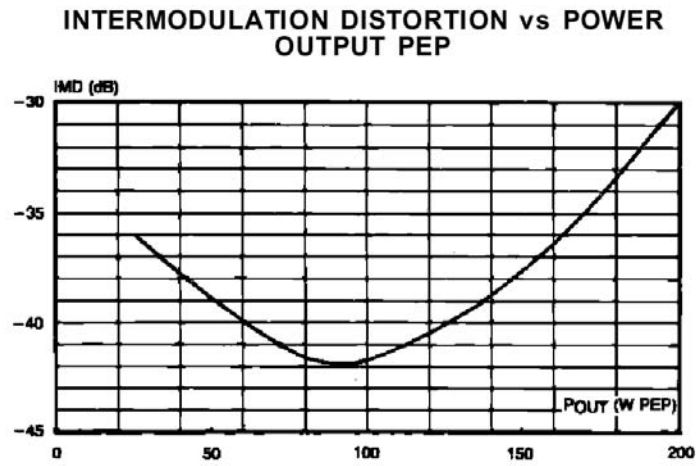
$P_{OUT} = 30\text{ W PEP}$ ,  $G_P = 14\text{ dB}$ ,  $IMD = -40\text{ dBc}$

\*  $f_1 = 30.00\text{ MHz}$ ;  $f_2 = 30.001\text{ MHz}$

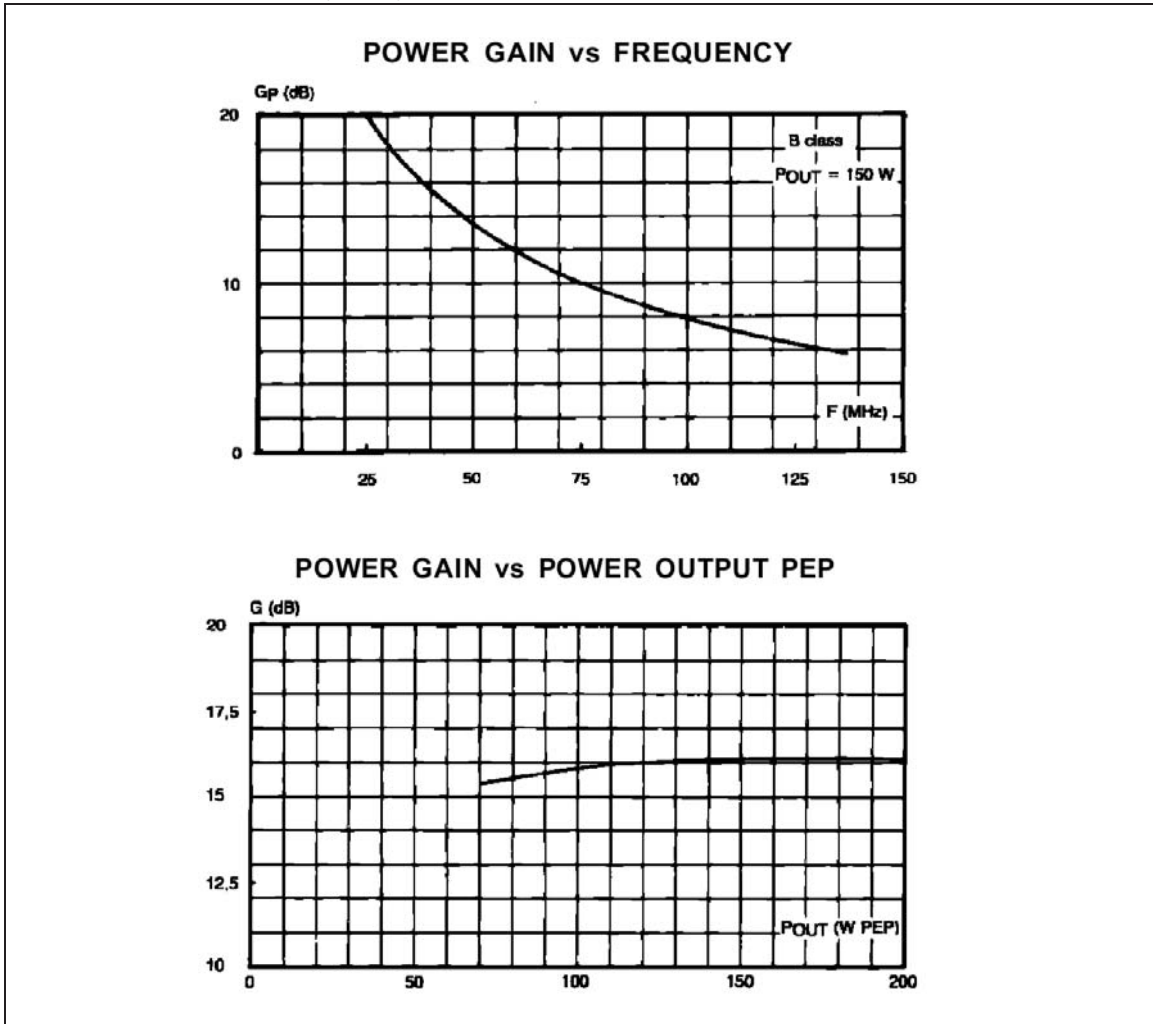
### Thermal Resistance versus Case Temperature



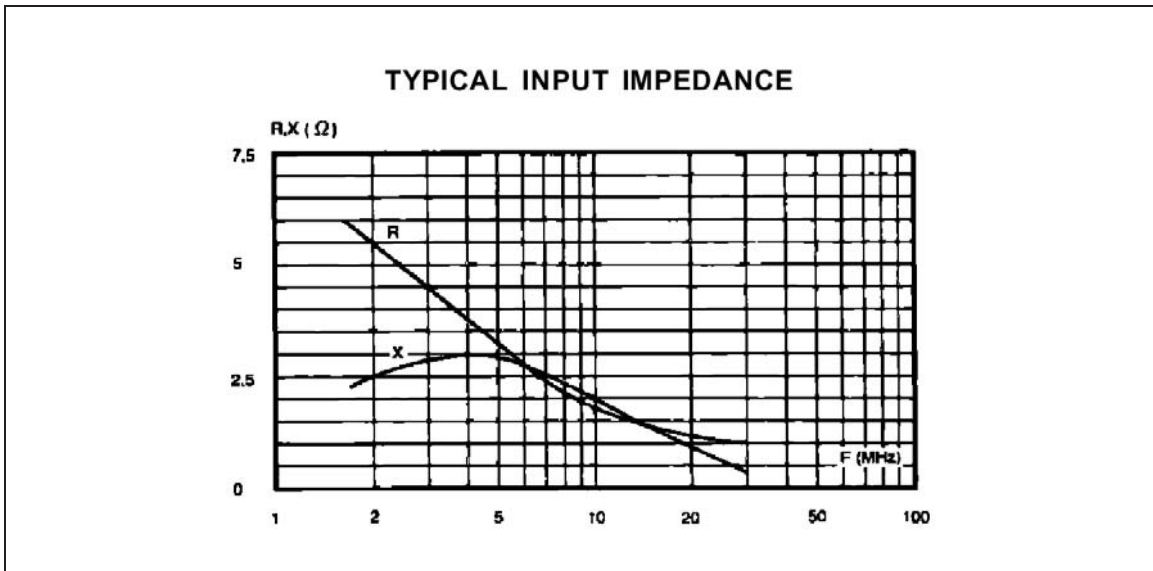
## TYPICAL PERFORMANCE



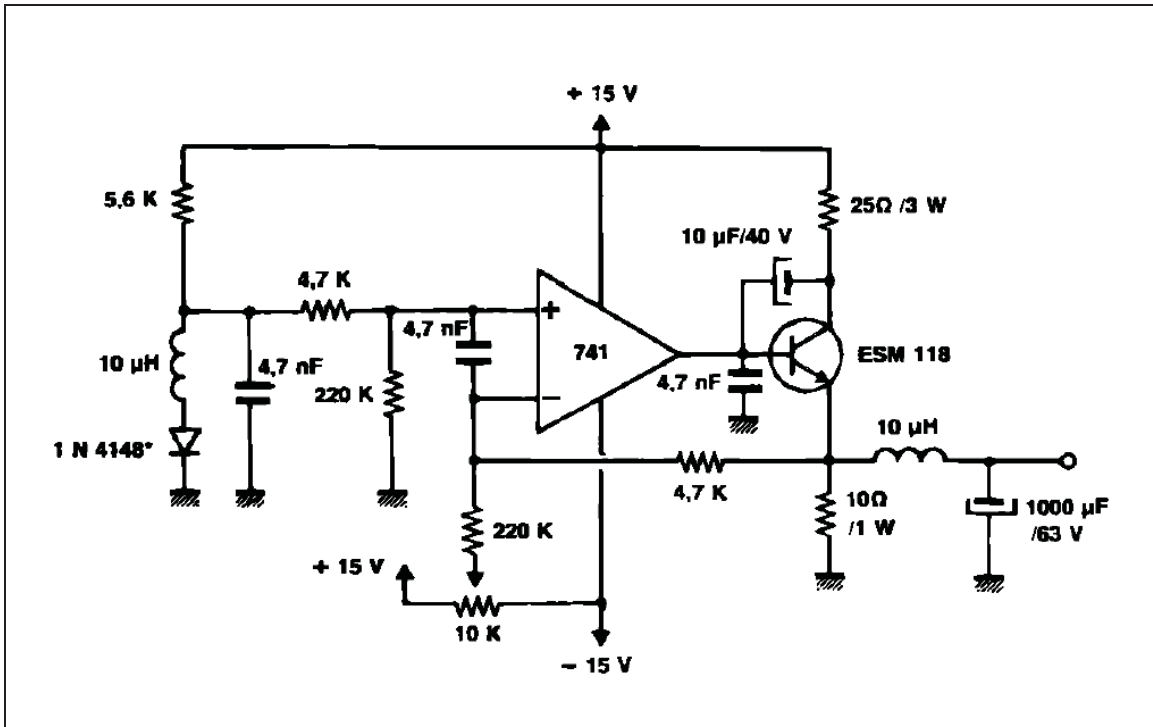
TYPICAL PERFORMANCE (cont'd)



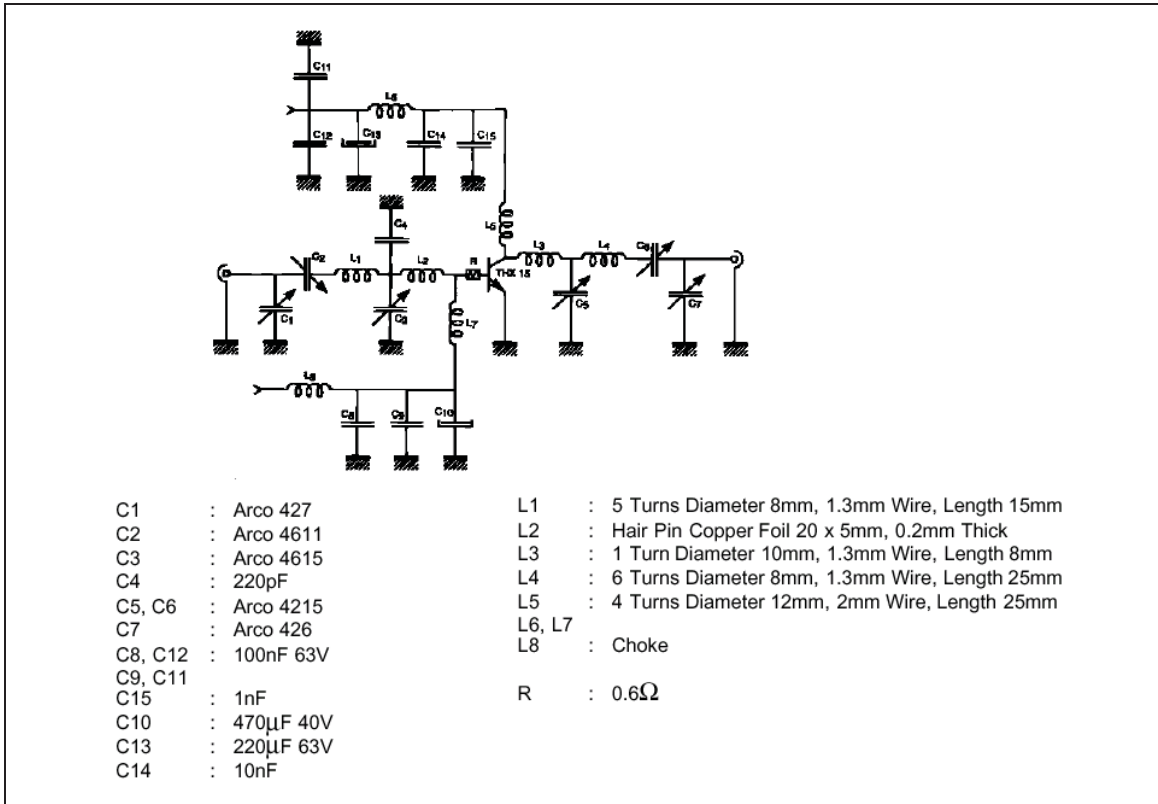
## IMPEDENCE DATA



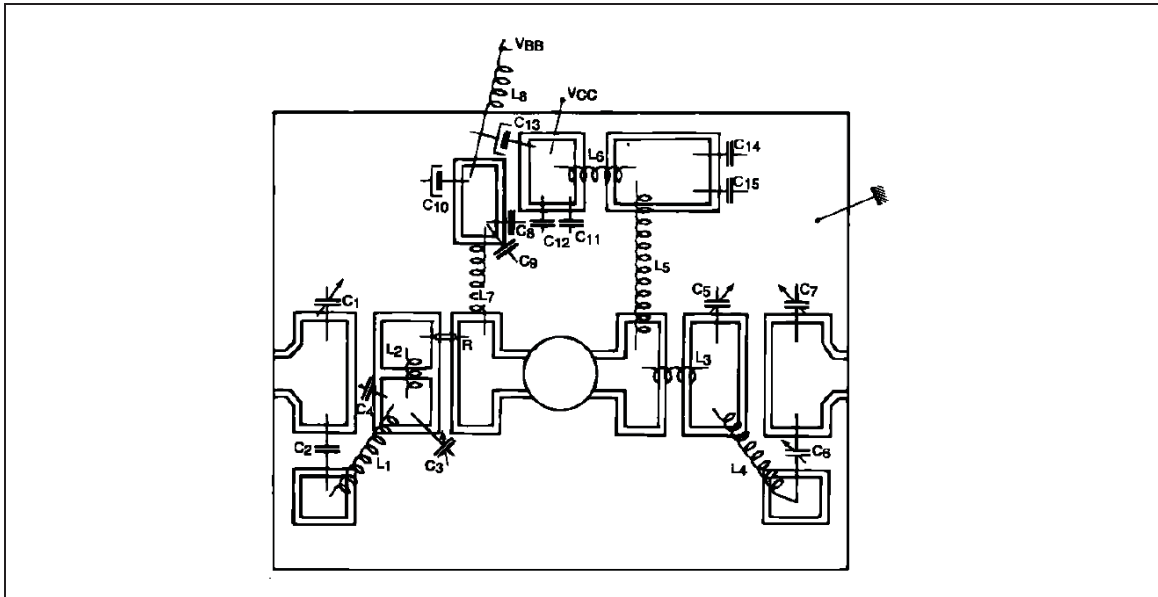
## BIAS CIRCUIT



TEST CIRCUIT - CLASS AB - 30 MHz

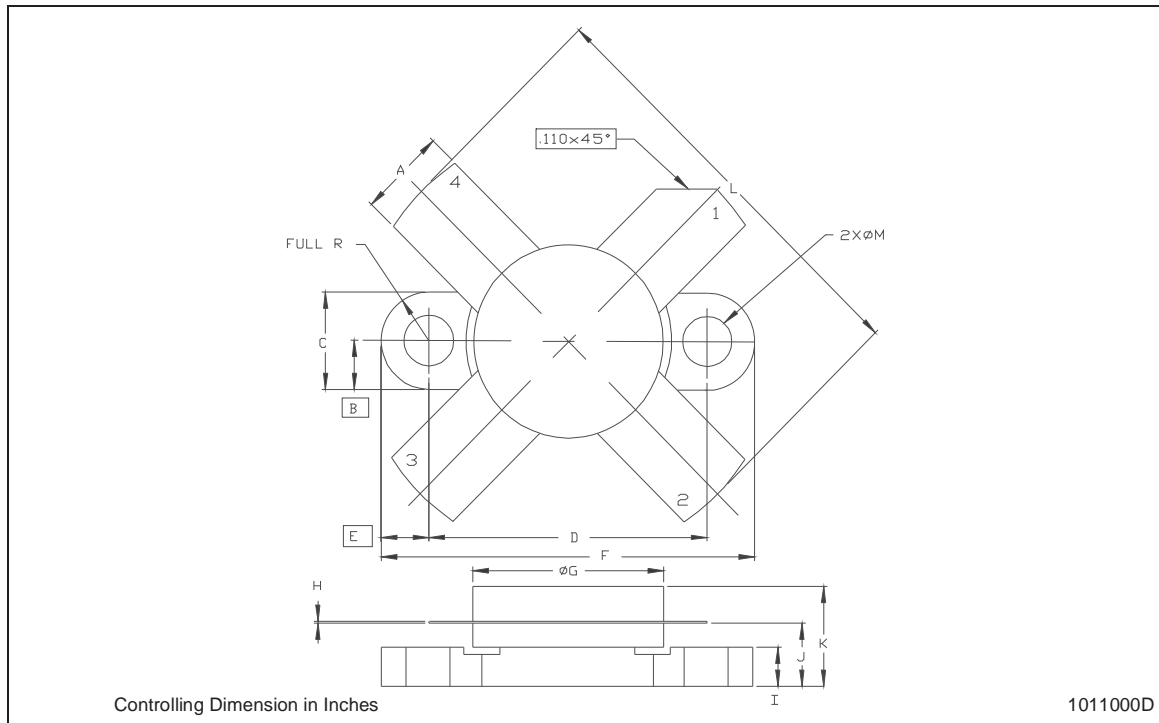


MOUNTING CIRCUIT - CLASS AB - 30 MHz



## M174 (.500 DIA 4/L N/HERM W/FLG) MECHANICAL DATA

DIM.	mm			Inch		
	MIN.	TYP.	MAX	MIN.	TYP.	MAX
A	5.56		5.584	0.219		0.230
B		3.18			0.125	
C	6.22		6.48	0.245		0.255
D	18.28		18.54	0.720		0.730
E		3.18			0.125	
F	24.64		24.89	0.970		0.980
G	12.57		12.83	0.495		0.505
H	0.08		0.18	0.003		0.007
I	2.11		3.00	0.083		0.118
J	3.81		4.45	0.150		0.175
K			7.11			0.280
L	25.53		26.67	1.005		1.050
M	3.05		3.30	0.120		0.130



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