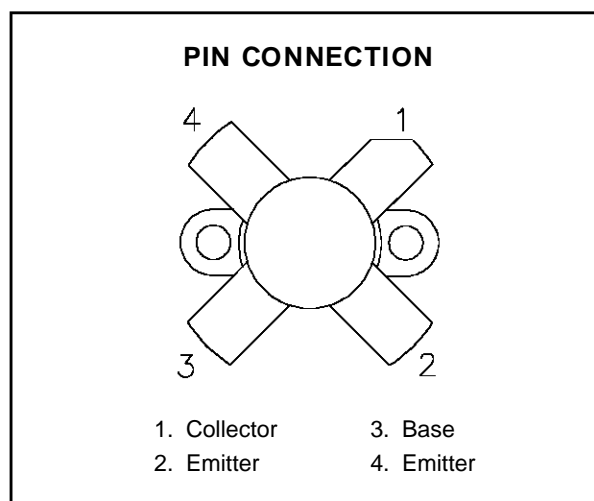
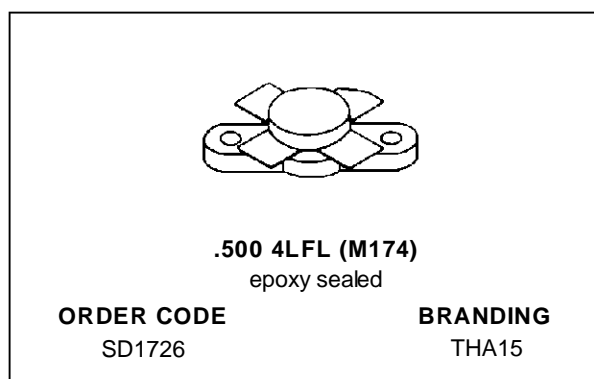


## RF & MICROWAVE TRANSISTORS HF SSB APPLICATIONS

- OPTIMIZED FOR SSB
- 30 MHz
- 50 VOLTS
- IMD -30 dB
- COMMON EMITTER
- GOLD METALLIZATION
- P<sub>OUT</sub> = 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<sub>case</sub> = 25°C)

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	110	V
V <sub>CEO</sub>	Collector-Emitter Voltage	55	V
V <sub>EBO</sub>	Emitter-Base Voltage	4.0	V
I <sub>C</sub>	Device Current	10	A
P <sub>DISS</sub>	Power Dissipation	233	W
T <sub>J</sub>	Junction Temperature	+200	°C
T <sub>STG</sub>	Storage Temperature	- 65 to +150	°C

### THERMAL DATA

R <sub>TH(j-c)</sub>	Junction-Case Thermal Resistance	0.75	°C/W
----------------------	----------------------------------	------	------

## SD1726 (THA15)

### ELECTRICAL SPECIFICATIONS ( $T_{case} = 25^{\circ}C$ )

#### STATIC

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

#### DYNAMIC

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

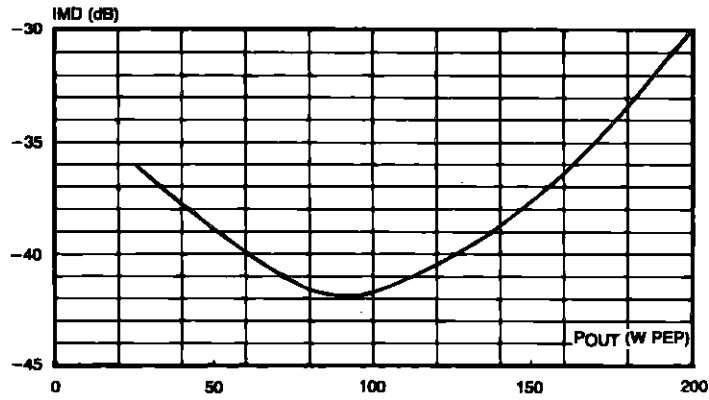
Note: The SD1726 is also usable in Class A at 40 V. Typical performance is:

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

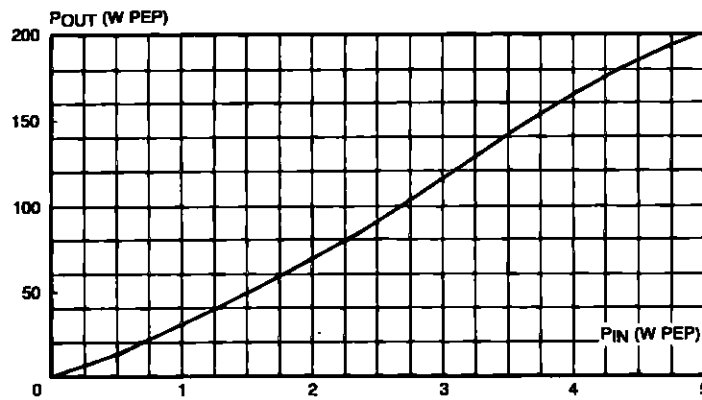
\*  $f_1 = 30.00\text{ MHz}$ ;  $f_2 = 30.001\text{ MHz}$

## TYPICAL PERFORMANCE

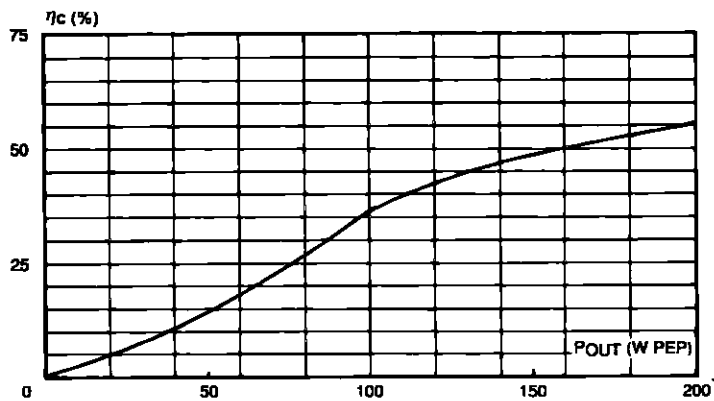
INTERMODULATION DISTORTION vs POWER OUTPUT PEP



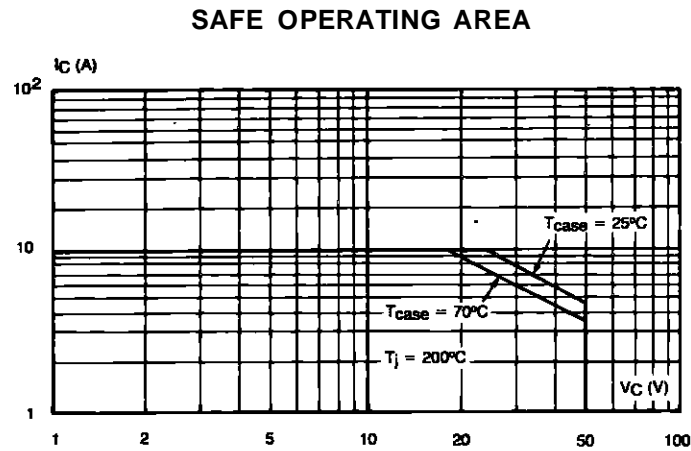
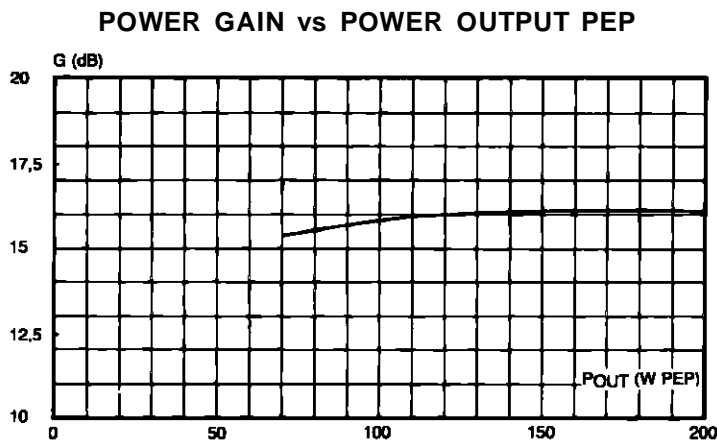
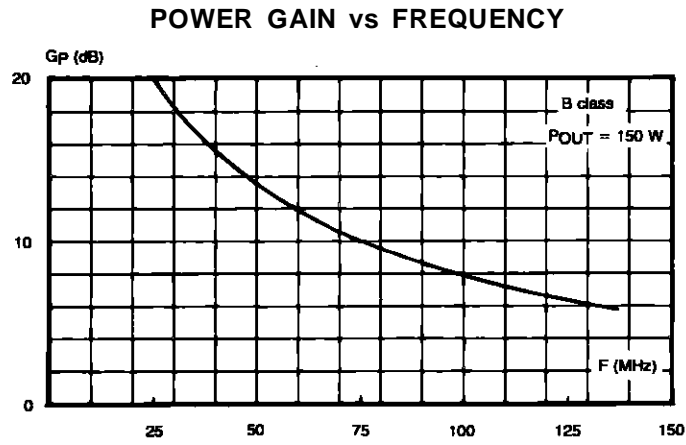
POWER OUTPUT PEP vs POWER INPUT



COLLECTOR EFFICIENCY vs POWER OUTPUT PEP

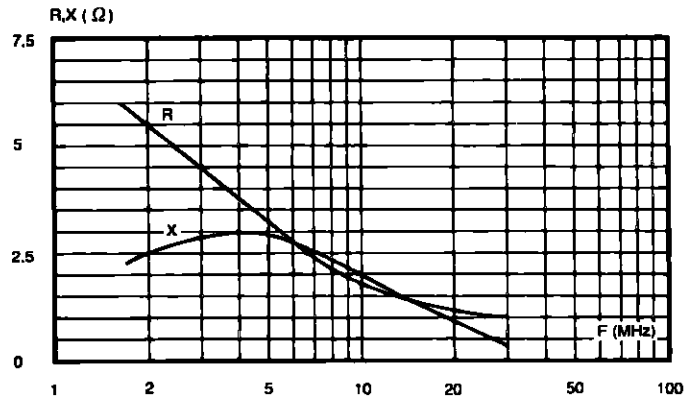


TYPICAL PERFORMANCE (cont'd)

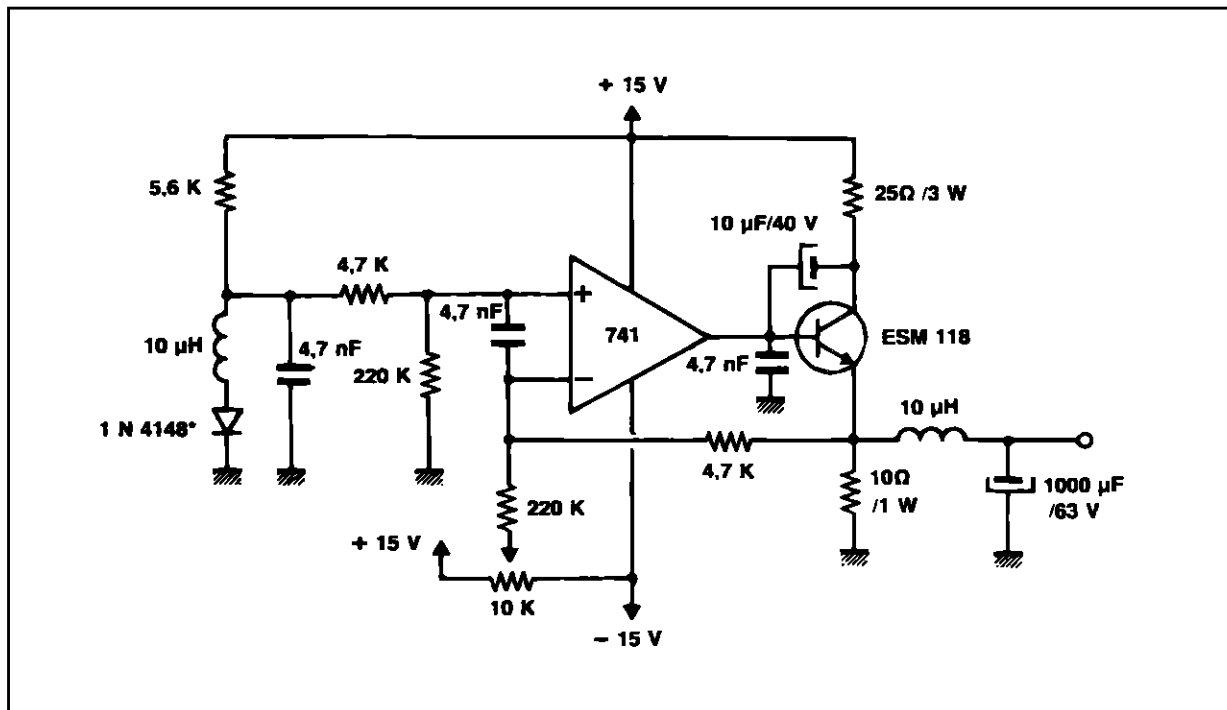


## IMPEDANCE DATA

TYPICAL INPUT IMPEDANCE

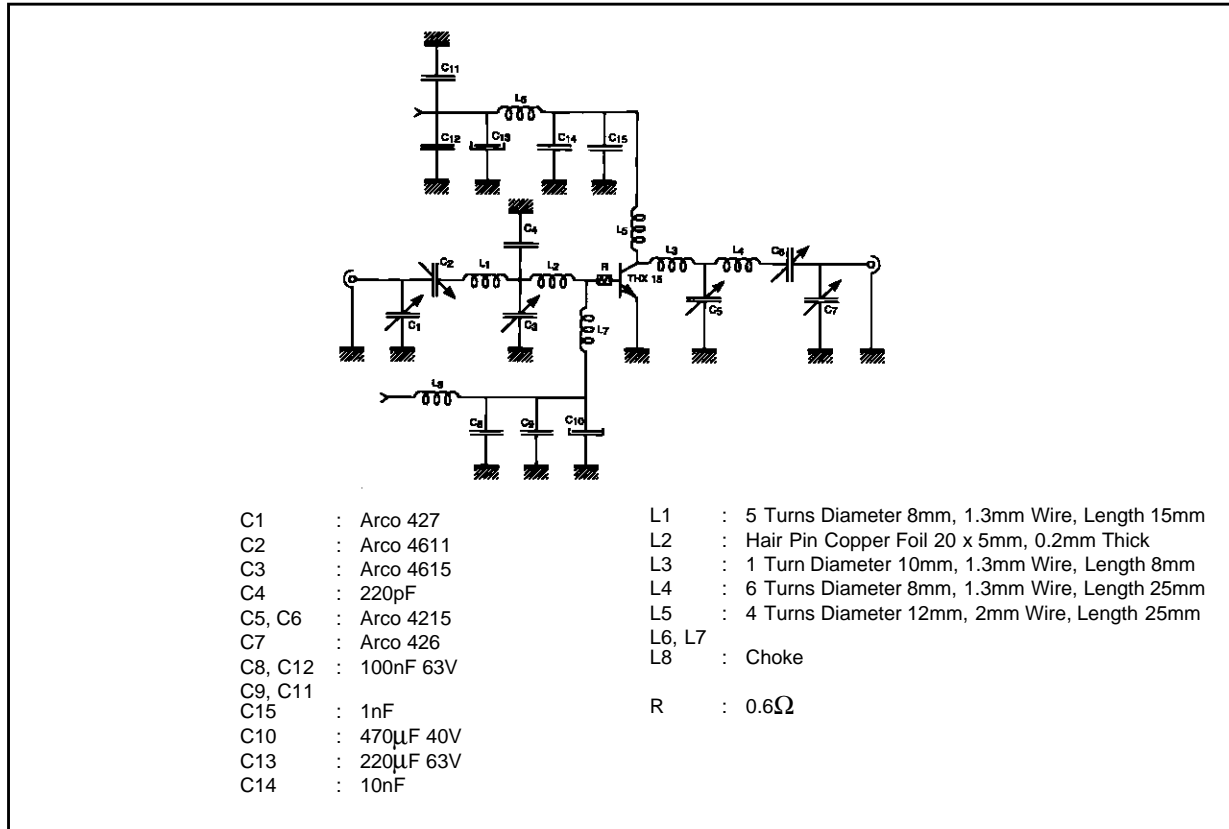


## BIAS CIRCUIT

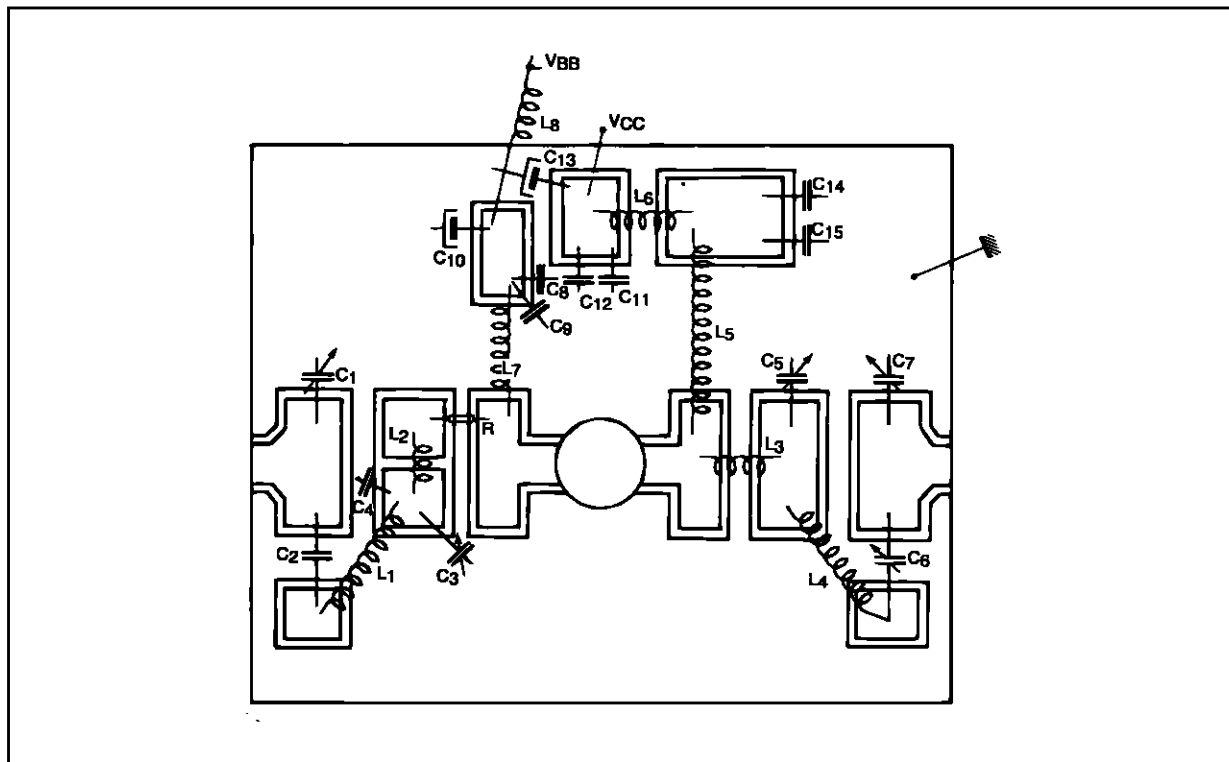


## SD1726 (THA15)

### TEST CIRCUIT - CLASS AB - 30 MHz

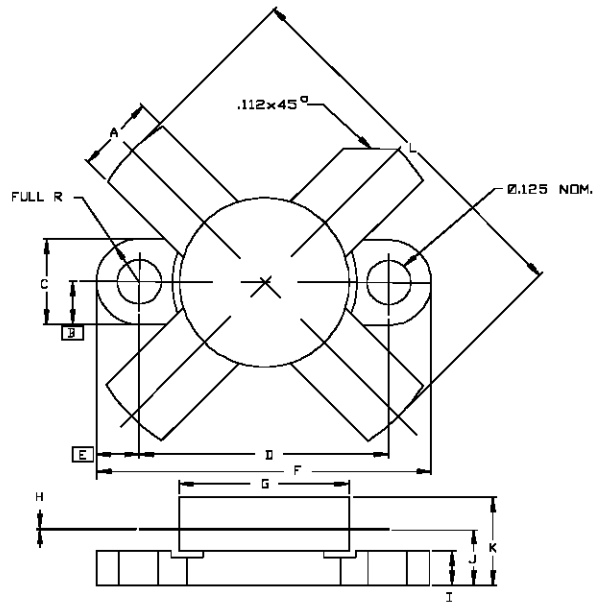


### MOUNTING CIRCUIT - CLASS AB - 30MHz



## PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0174



SGS-THOMSON MICROELECTRONICS			CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.220/5,59	.230/5,84	K		.280/7,11
B	.125/3,18		L		1.050/26,67
C	.245/6,22	.255/6,48			
D	.720/18,28	.730/18,54			
E	.125/3,18				
F	.970/24,64	.980/24,89			
G	.495/12,57	.505/12,83			
H	.003/0,08	.007/0,18			
I	.090/2,29	.110/2,79			
J	.160/4,06	.175/4,45			

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1994 SGS-THOMSON Microelectronics - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES  
 Australia - Brazil - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands -  
 Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A