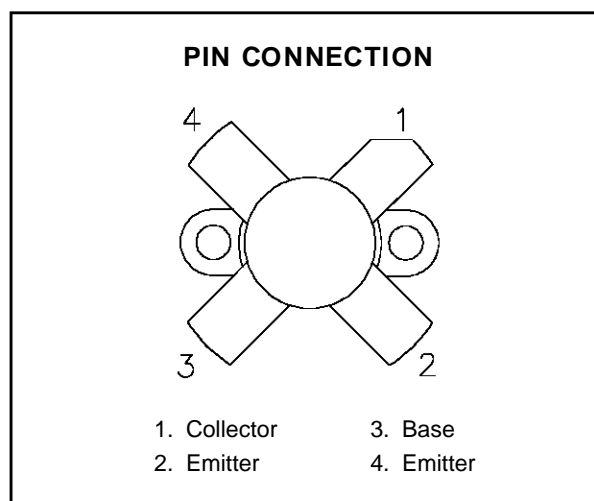
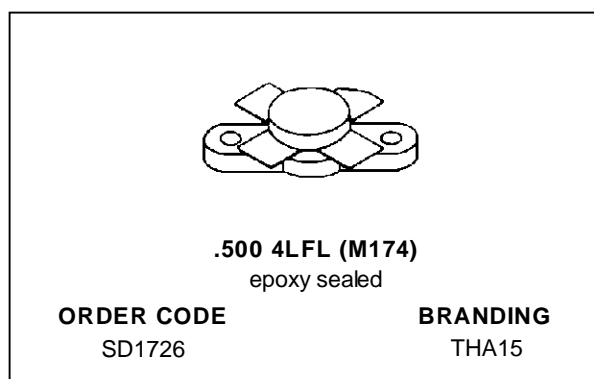


## RF & MICROWAVE TRANSISTORS HF SSB APPLICATIONS

- 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
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## 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

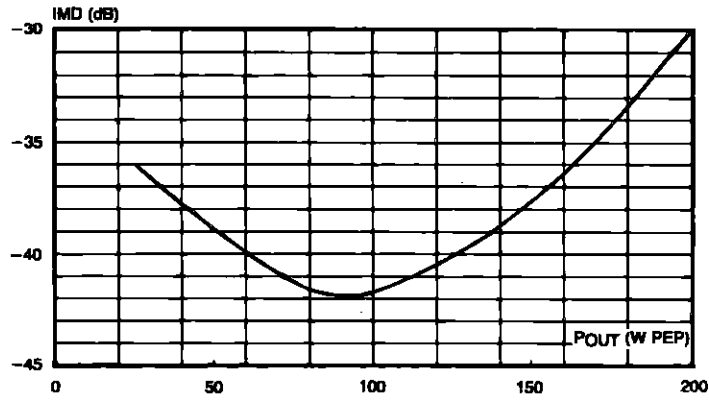
Note: The SD1726 is also usable in Class A at 40 V. Typical performance is:

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

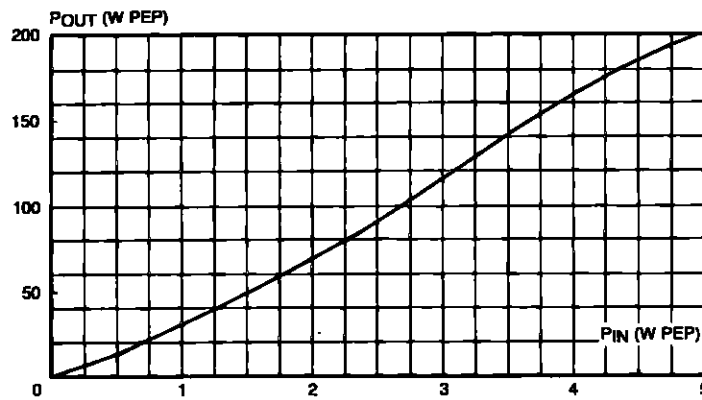
\*  $f_1 = 30.00\text{ MHz}$ ;  $f_2 = 30.001\text{ MHz}$

## TYPICAL PERFORMANCE

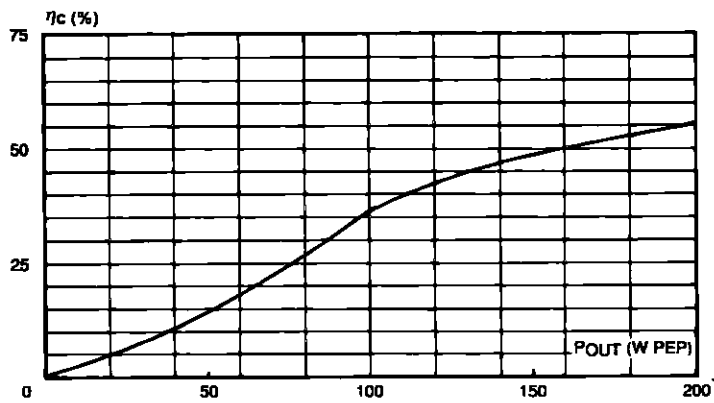
INTERMODULATION DISTORTION vs POWER OUTPUT PEP



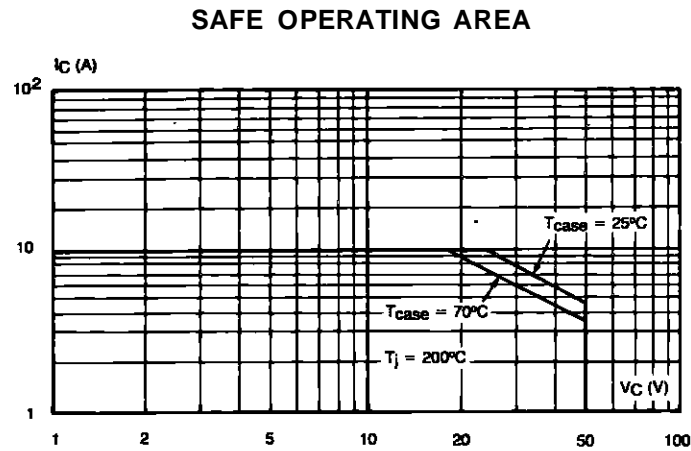
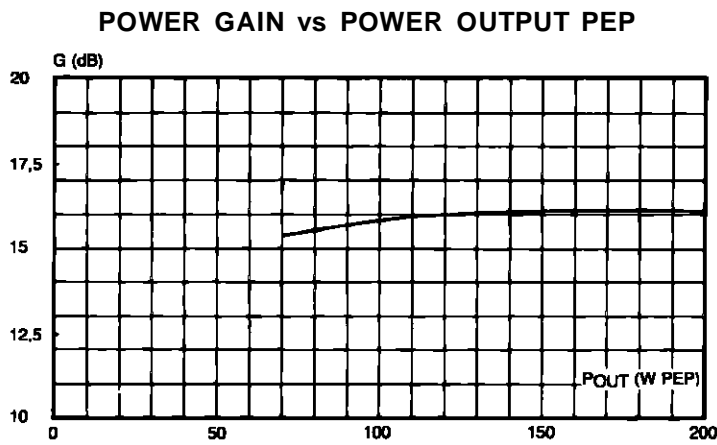
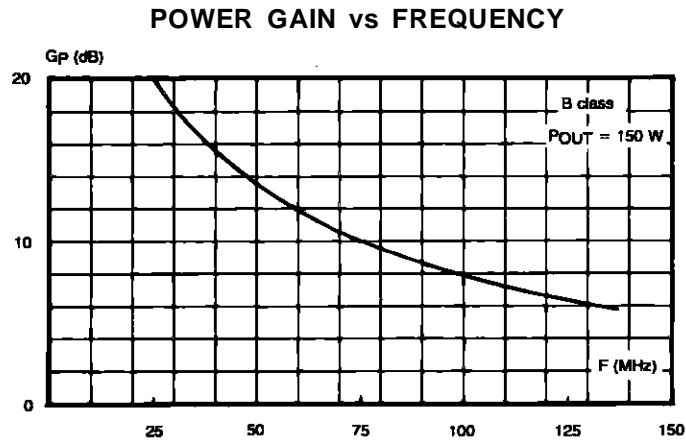
POWER OUTPUT PEP vs POWER INPUT



COLLECTOR EFFICIENCY vs POWER OUTPUT PEP

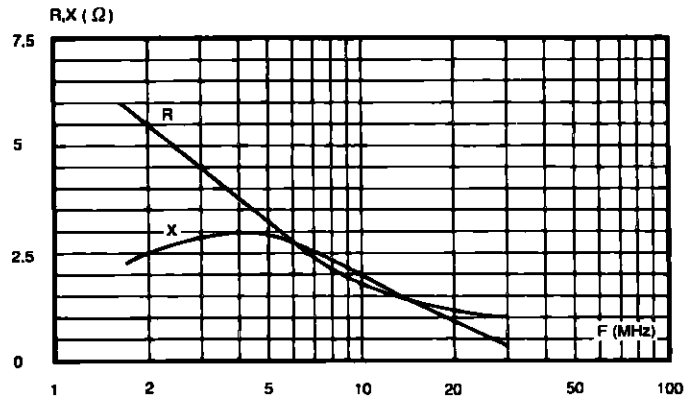


TYPICAL PERFORMANCE (cont'd)

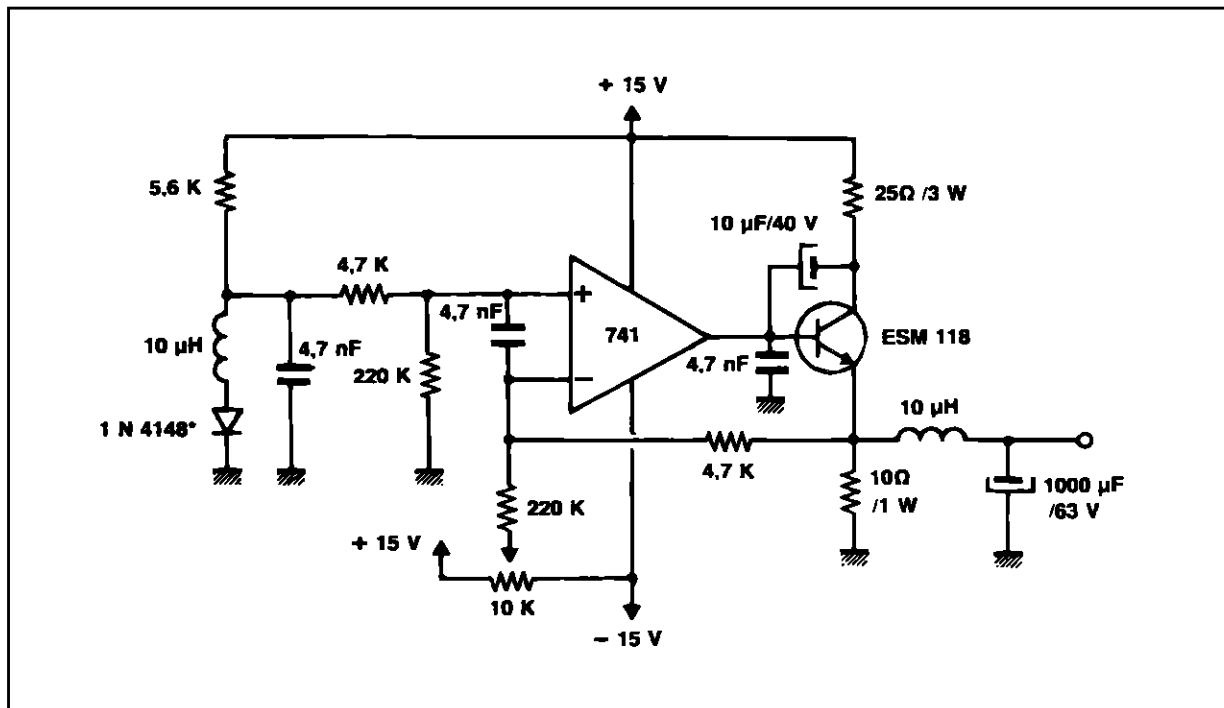


## IMPEDANCE DATA

TYPICAL INPUT IMPEDANCE

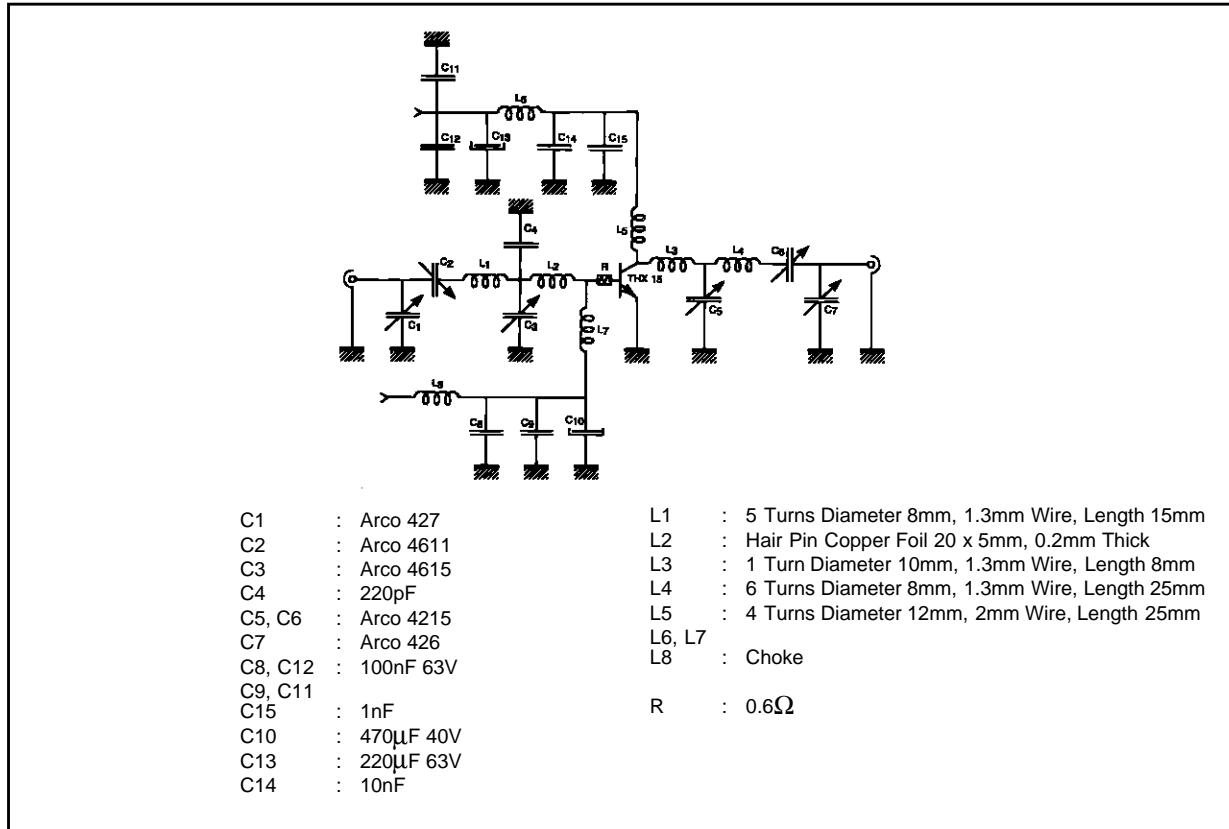


## BIAS CIRCUIT

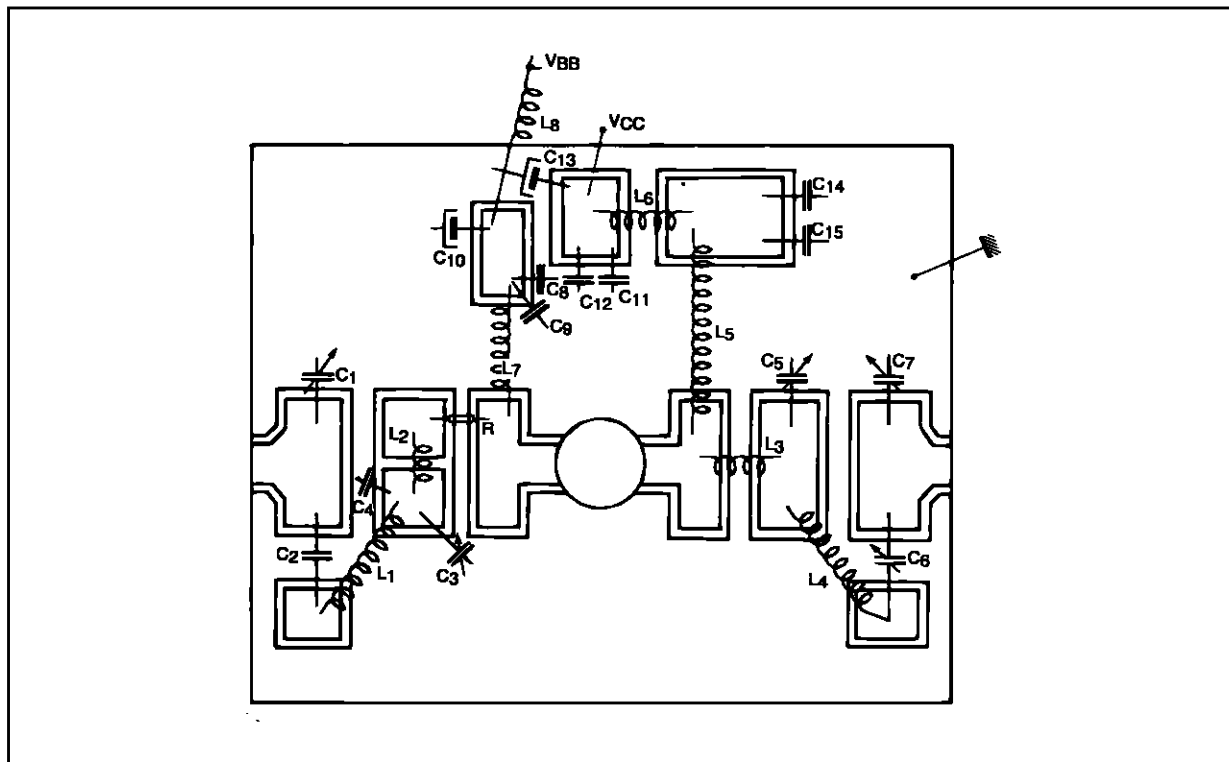


## SD1726 (THA15)

### TEST CIRCUIT - CLASS AB - 30 MHz

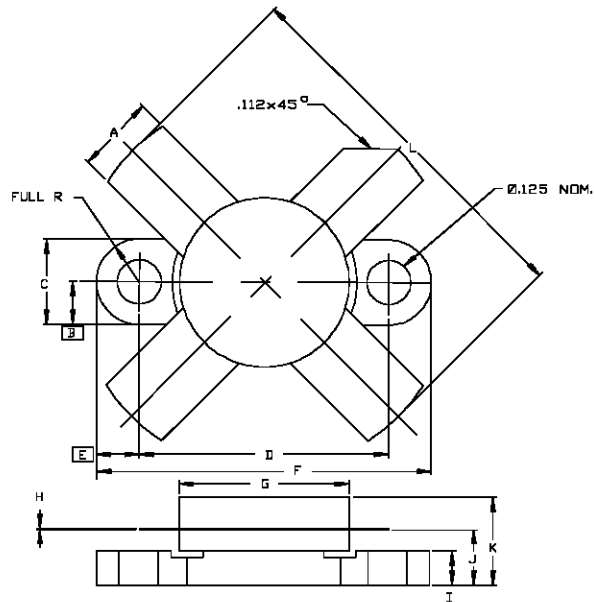


### MOUNTING CIRCUIT - CLASS AB - 30MHz



## 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			

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