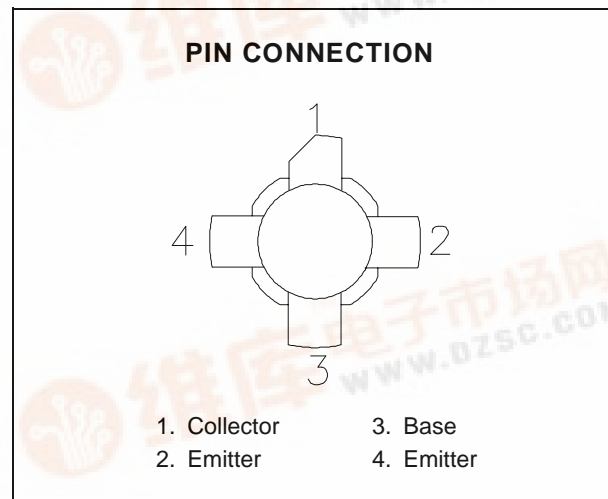
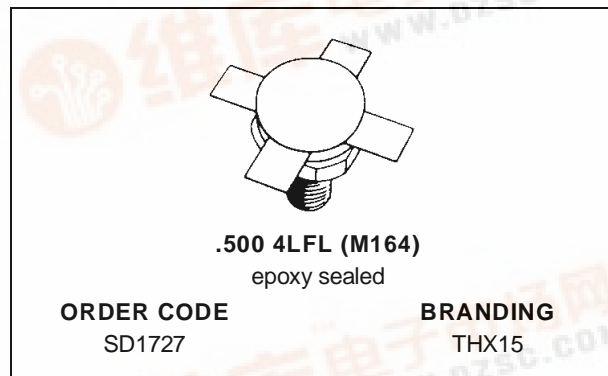




SD1727 (THX15)

RF & MICROWAVE TRANSISTORS HF SSB APPLICATIONS

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



DESCRIPTION

The SD1727 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}	Collector-Base Voltage	110	V
V _{CEO}	Collector-Emitter Voltage	55	V
V _{EBO}	Emitter-Base Voltage	4.0	V
I _c	Device Current	10	A
P _{DISS}	Power Dissipation	233	W
T _J	Junction Temperature	+200	°C
T _{STG}	Storage Temperature	- 65 to +150	°C

THERMAL DATA

R _{TH(j-c)}	Junction-Case Thermal Resistance	0.75	°C/W
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SD1727 (THX15)

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

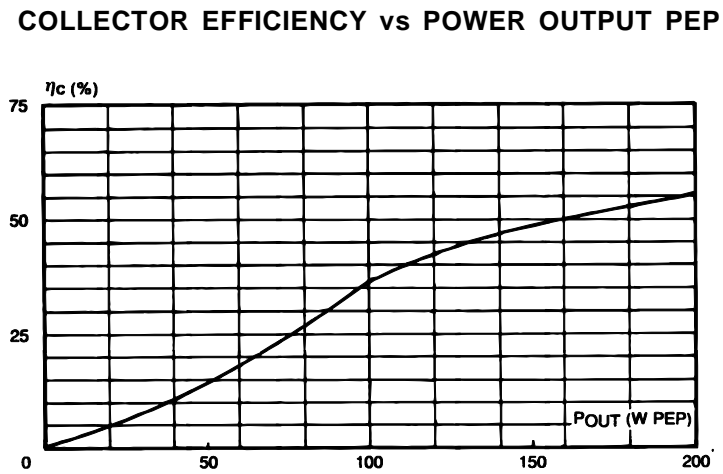
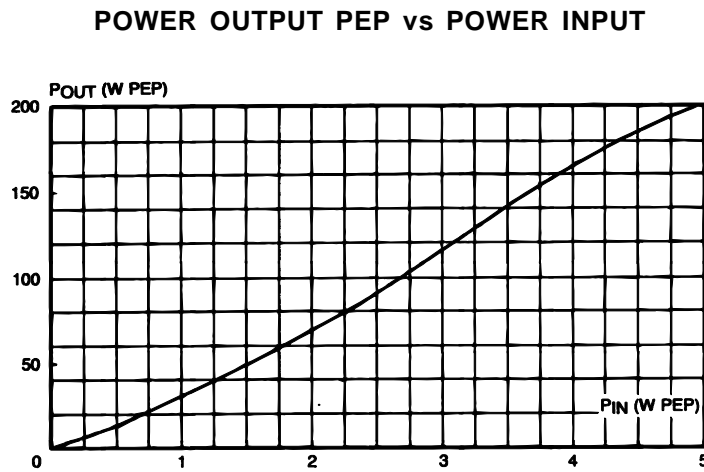
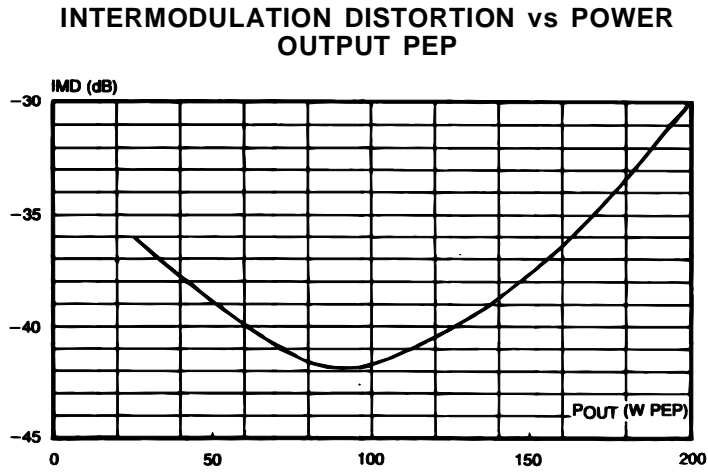
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 30\text{ MHz}$	$V_{CE} = 50\text{ V}$	$I_{CQ} = 100mA$	150	—	—	W
G_P^*	$P_{OUT} = 150\text{ W PEP}$	$V_{CE} = 50\text{ V}$	$I_{CQ} = 100mA$	14	—	—	dB
IMD^*	$P_{OUT} = 150\text{ W PEP}$	$V_{CE} = 50\text{ V}$	$I_{CQ} = 100mA$	—	—	-30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

Note: The SD1727 is also usable in Class A at 40 V. Typical performance is:

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

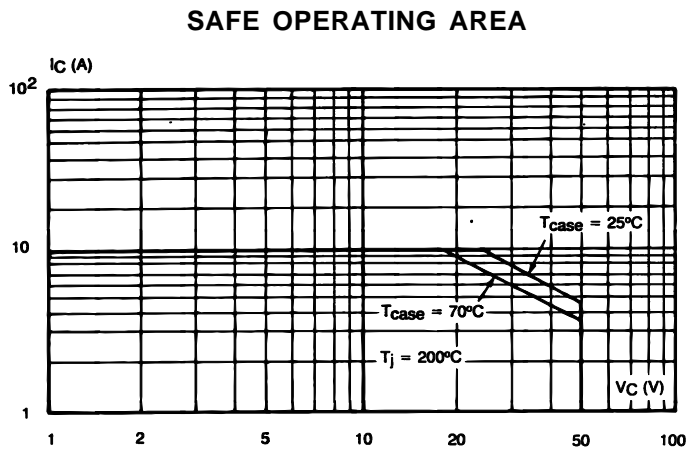
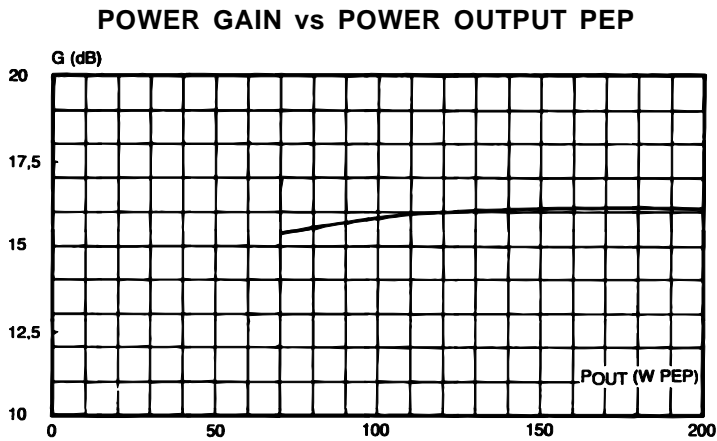
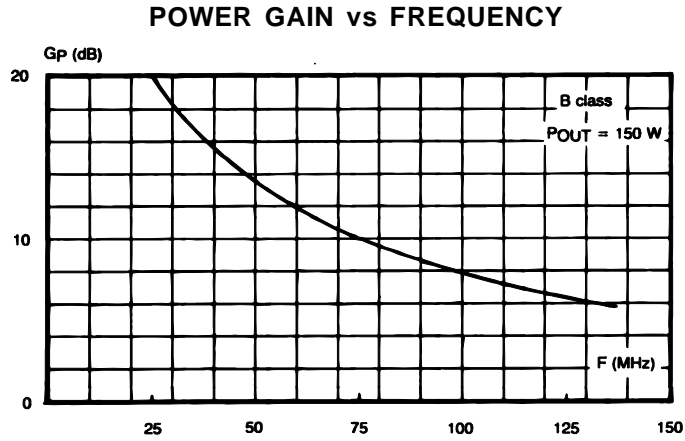
* $f_1 = 30.00\text{ MHz}$; $f_2 = 30.001\text{ MHz}$

TYPICAL PERFORMANCE



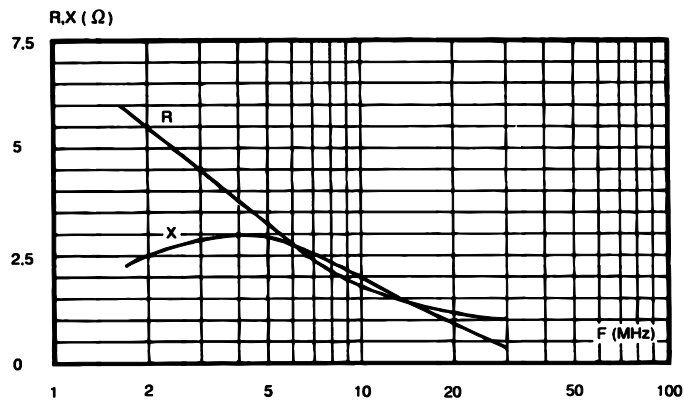
SD1727 (THX15)

TYPICAL PERFORMANCE (cont'd)

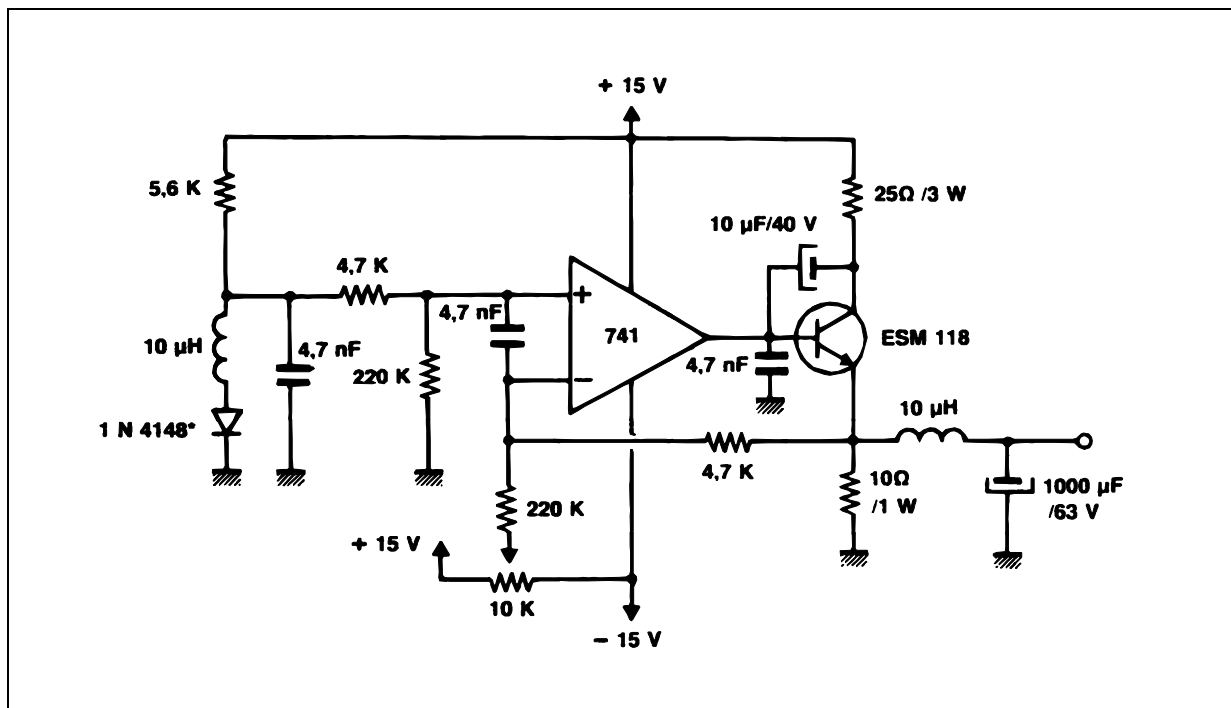


IMPEDANCE DATA

TYPICAL INPUT IMPEDANCE

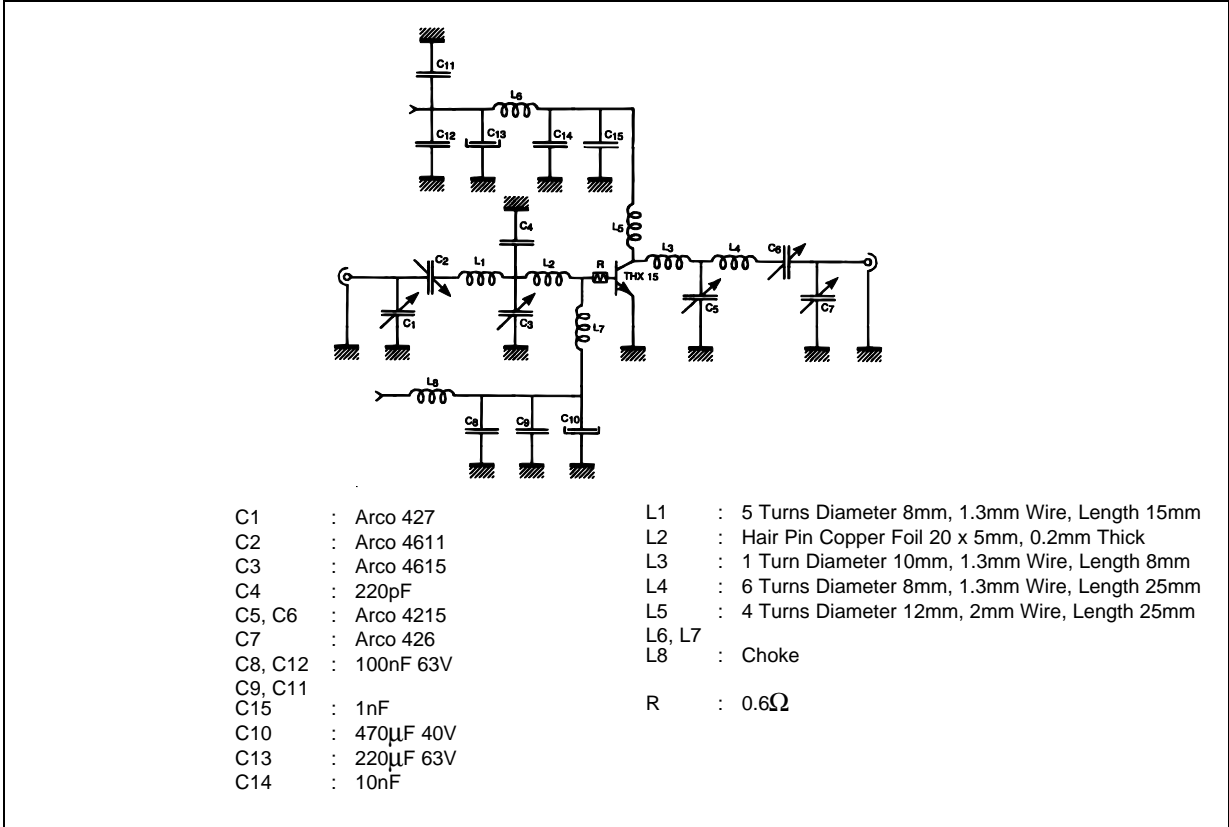


BIAS CIRCUIT

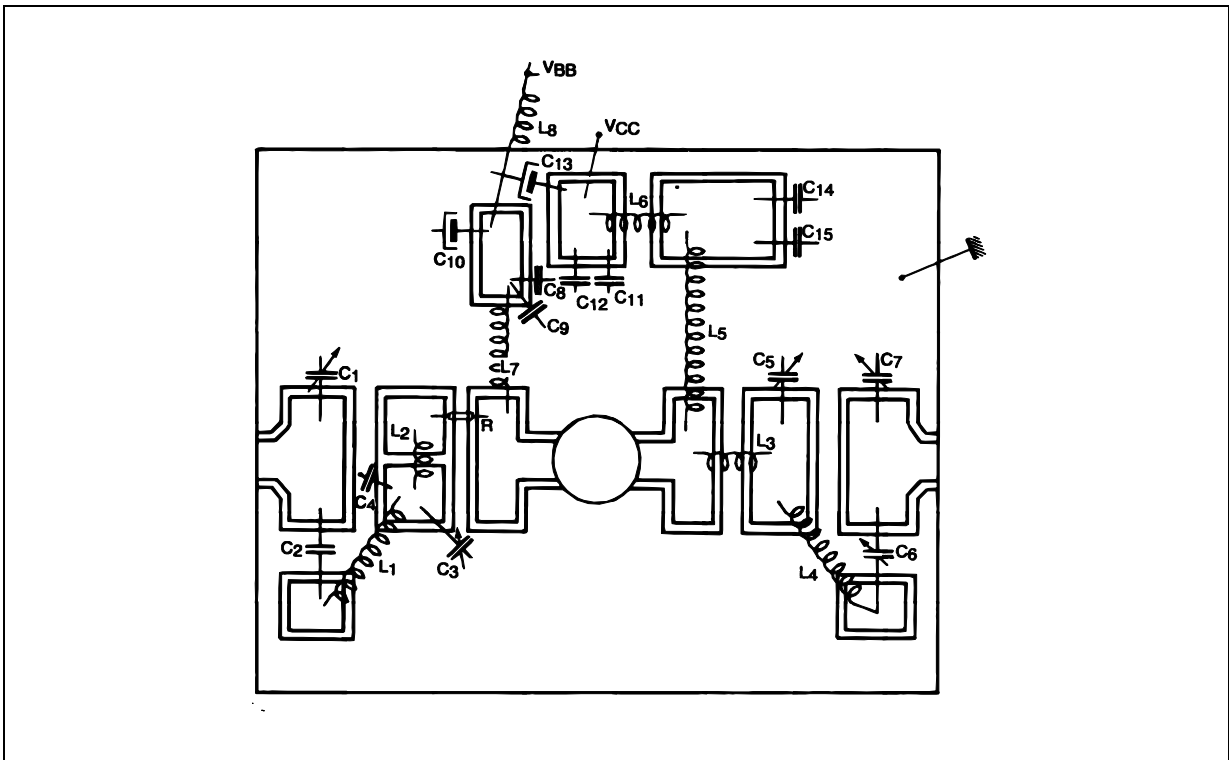


SD1727 (THX15)

TEST CIRCUIT - CLASS AB - 30 MHz

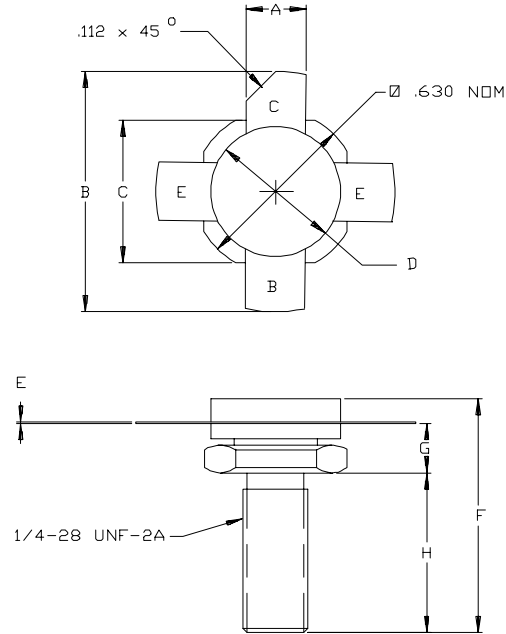


MOUNTING CIRCUIT - CLASS AB - 30MHz



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0164



SGS-THOMSON MICROELECTRONICS		
	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.220/5,59	.230/5,84
B		1.050/26,67
C	.545/13,84	.555/14,10
D	.495/12,57	.505/12,83
E	.003/0,08	.007/0,18
F		.830/21,08
G	.185/4,70	.198/5,03
H	.497/12,62	.530/13,46

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