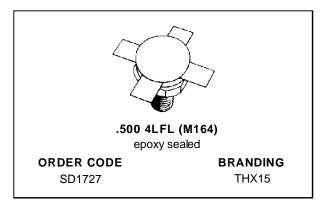
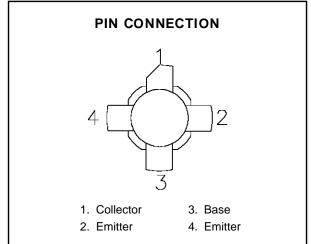


SD1727 (THX15)

RF & MICROWAVE TRANSISTORS HF SSB APPLICATIONS

- OPTIMIZED FOR SSB
- 30 MHz
- 50 VOLTS
- IMD -30 dB
- COMMON EMITTER
- GOLD METALLIZATION
- Pout = 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 $(T_{case} = 25^{\circ}C)$

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	
Ic	Device Current	10	А	
Poiss	Power Dissipation	233		
TJ	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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November 1992 1/7

SD1727 (THX15)

ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

STATIC

Symbol	Test Conditions	Value			Unit		
		Min.	Тур.	Max.			
ВУсво	I _C = 100mA	$I_E = 0mA$		110	_	_	V
BVces	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
ICEO	V _{CE} = 30V	I _E = 0mA		_	_	5	mA
Ices	V _{CE} = 60V	$I_E = 0mA$		_	_	5	mA
h _{FE}	V _{CE} = 6V	I _C = 1.4A		18	_	43.5	_

DYNAMIC

Symbol	Toot Conditions		Value			Unit	
Symbol	Test Conditions			Min.	Тур.	Max.	Onit
Роит	f = 30 MHz	$V_{CE} = 50 \text{ V}$	$I_{CQ} = 100 \text{mA}$	150	_	_	W
G _P *	P _{OUT} = 150 W PEP	$V_{CE} = 50 \text{ V}$	$I_{CQ} = 100 \text{mA}$	14	_	_	dB
IMD*	P _{OUT} = 150 W PEP	V _{CE} = 50 V	$I_{CQ} = 100 \text{mA}$	_	_	-30	dBc
η _c *	Pout = 150 W PEP	V _{CE} = 50 V	I _{CQ} = 100mA	37	_	_	%
Сов	f = 1 MHz	$V_{CB} = 50 \text{ V}$		_	_	220	pF

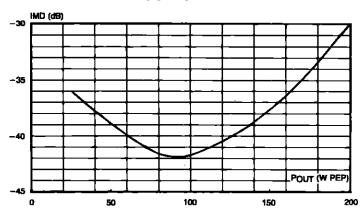
ote: The SD1727 is also usable in Class A at 40 V. Typical performance is:

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

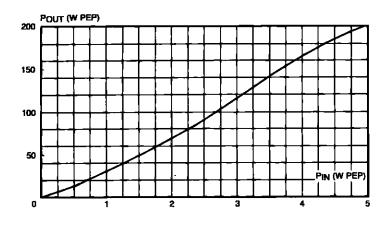
^{*} $f_1 = 30.00 \text{ MHz}; f_2 = 30.001 \text{ MHz}$

TYPICAL PERFORMANCE

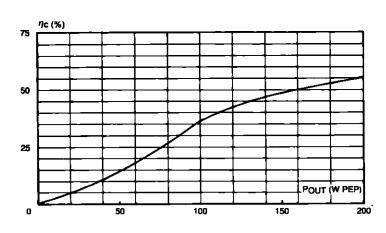




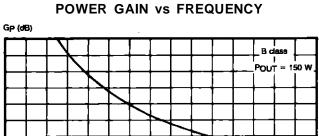
POWER OUTPUT PEP vs POWER INPUT



COLLECTOR EFFICIENCY vs POWER OUTPUT PEP

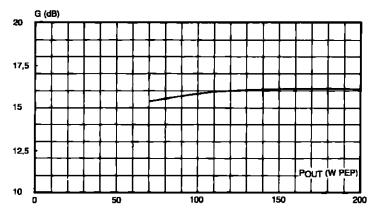


TYPICAL PERFORMANCE (cont'd)

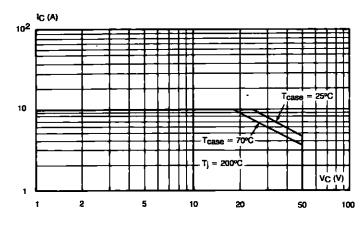




F (MHz)

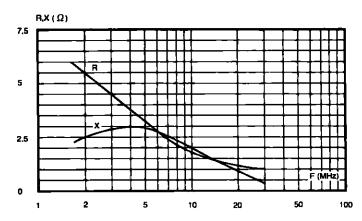


SAFE OPERATING AREA

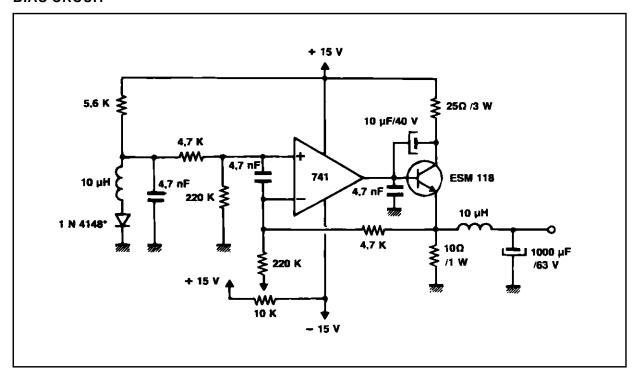


IMPEDANCE DATA

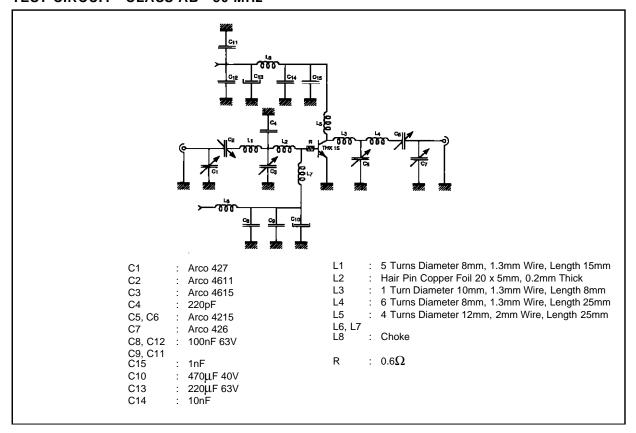
TYPICAL INPUT IMPEDANCE



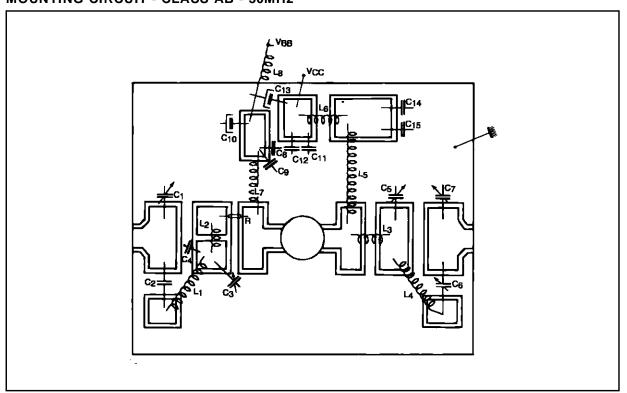
BIAS CRCUIT



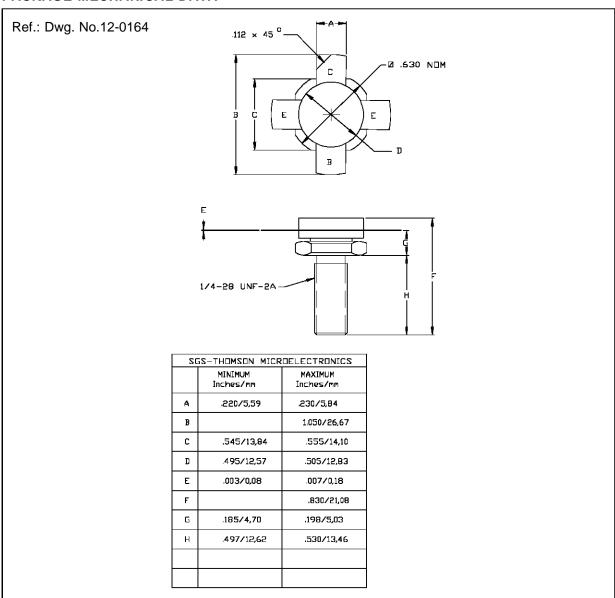
TEST CIRCUIT - CLASS AB - 30 MHz



MOUNTING CIRCUIT - CLASS AB - 30MHz



PACKAGE MECHANICAL DATA



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