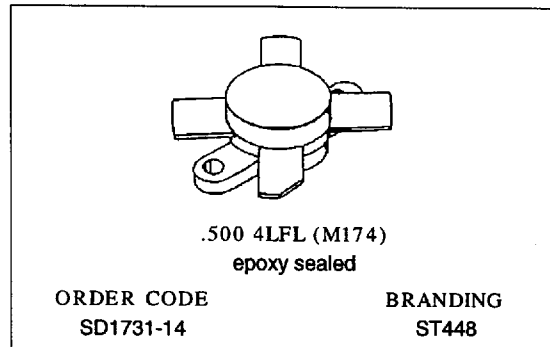


RF & MICROWAVE TRANSISTORS HF SSB APPLICATIONS

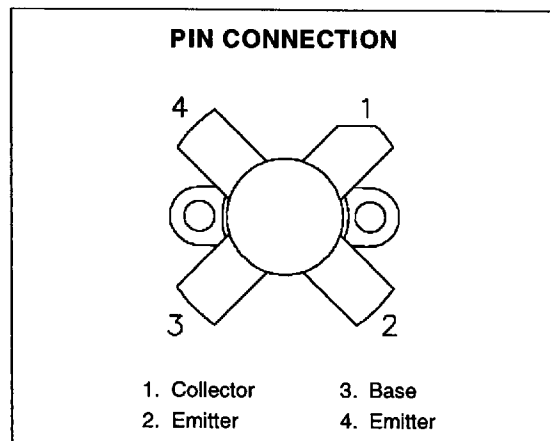
PRELIMINARY DATA

- OPTIMIZED FOR SSB
- 30 MHz
- 50 VOLTS
- EFFICIENCY 40%
- COMMON EMITTER
- GOLD METALLIZATION
- $P_{OUT} = 250$ W PEP WITH 12 dB GAIN



DESCRIPTION

The SD1731 is a 50 V epitaxial silicon NPN planar transistor designed primarily for SSB communications. This device utilizes emitter ballasting for improved ruggedness and reliability.



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
I_c	Device Current	20	A
P_{DISS}	Power Dissipation ($T_{heatsink} \leq 25^{\circ}C$)	257	W
T_J	Junction Temperature	+200	$^{\circ}C$
T_{STG}	Storage Temperature	- 65 to +150	$^{\circ}C$

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	0.48	$^{\circ}C/W$
$R_{TH(c-s)}$	Case-Heatsink Thermal Resistance	0.2	$^{\circ}C/W$

September 6, 1996

ELECTRICAL SPECIFICATIONS

STATIC ($T_{\text{case}} = 25^{\circ}\text{C}$)

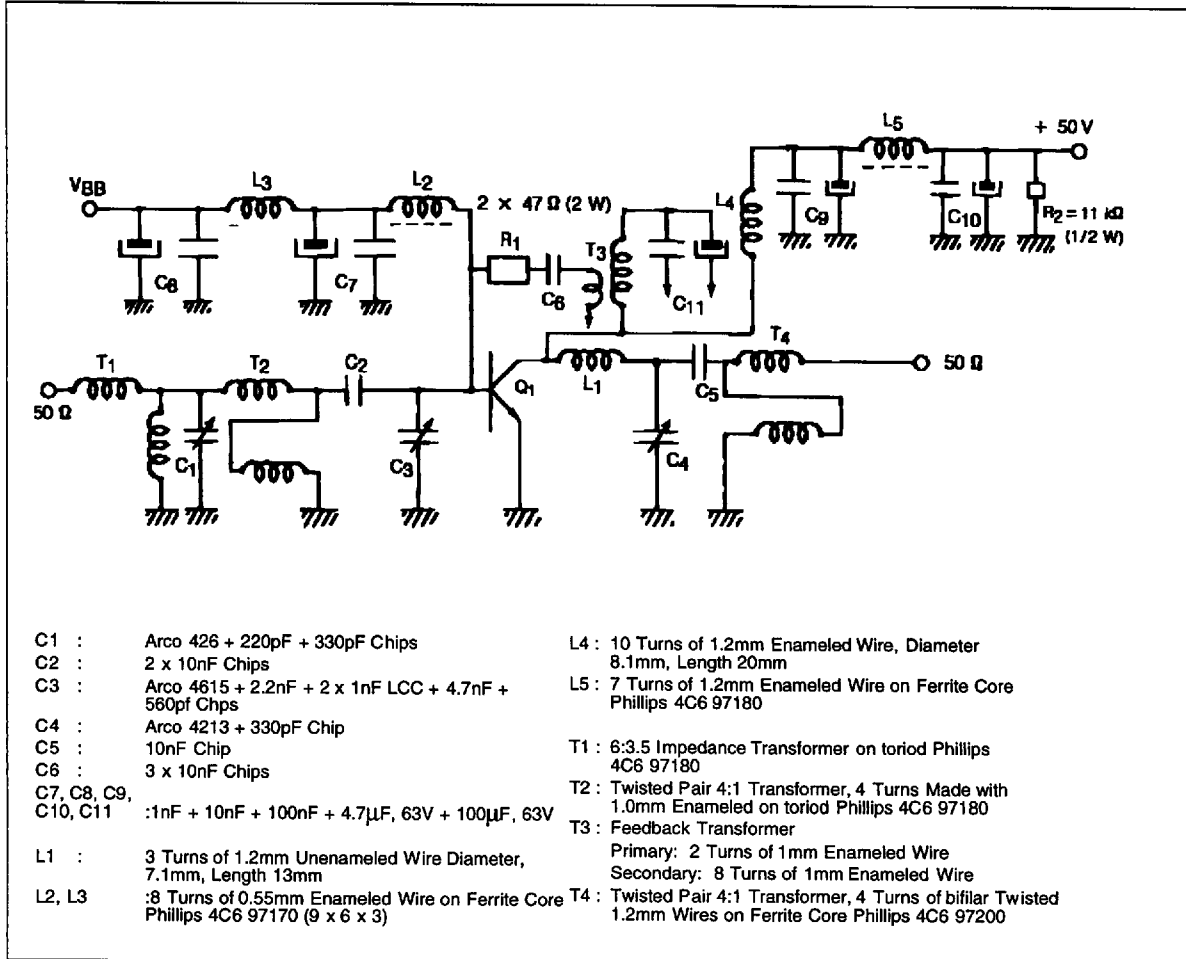
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_C = 200 \text{ mA}$	$I_E = 0 \text{ mA}$	110	—	—	V
BV_{CEO}	$I_C = 200 \text{ mA}$	$I_B = 0 \text{ mA}$	55	—	—	V
BV_{EBO}	$I_E = 20 \text{ mA}$	$I_C = 0 \text{ mA}$	4.0	—	—	V
I_{CEO}	$V_{CE} = 30 \text{ V}$	$I_B = 0 \text{ mA}$	—	—	5	mA
I_{CES}	$V_{CE} = 55 \text{ V}$	$V_{BE} = 0 \text{ V}$	—	—	10	mA
h_{FE}	$V_{CE} = 6 \text{ V}$	$I_C = 10 \text{ A}$	5	—	20	—

DYNAMIC ($T_{\text{heatsink}} = 25^{\circ}\text{C}$)

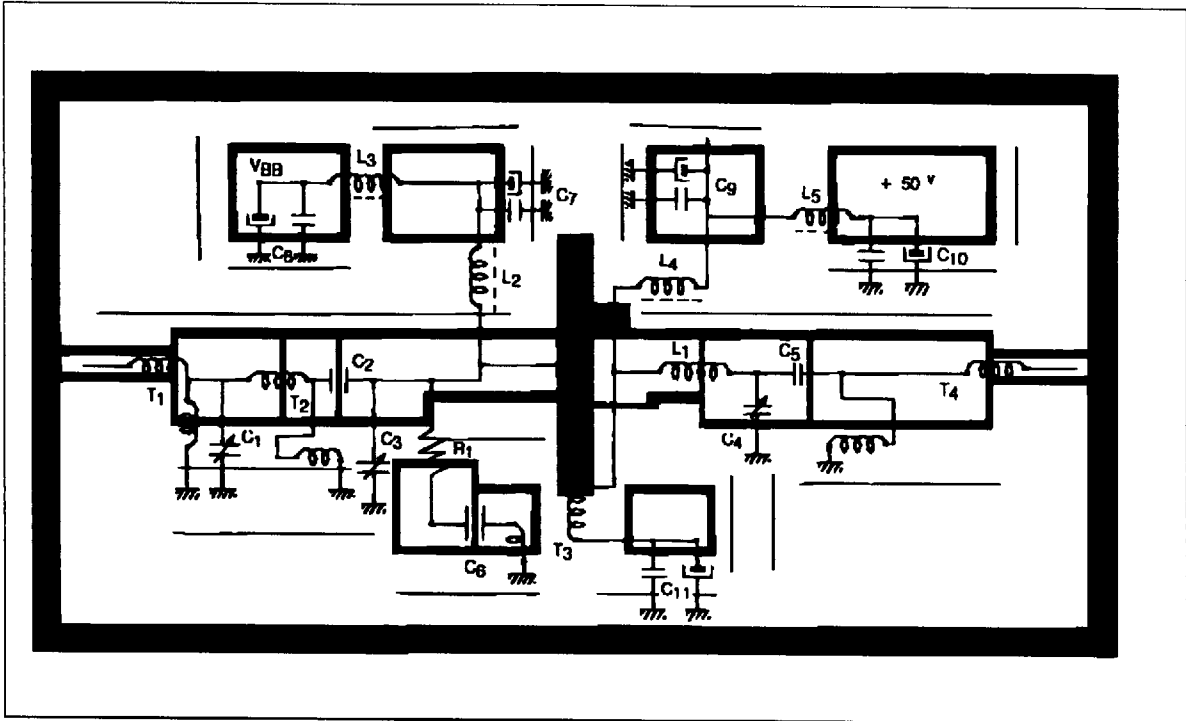
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 30 \text{ MHz}$	$V_{CC} = 50 \text{ V}$	$I_{CQ} = 150 \text{ mA}$	250	—	—	W
G_P^*	$P_{OUT} = 250 \text{ W PEP}$	$V_{CC} = 50 \text{ V}$	$I_{CQ} = 150 \text{ mA}$	12	—	—	dB
IMD^*	$P_{OUT} = 250 \text{ W PEP}$	$V_{CC} = 50 \text{ V}$	$I_{CQ} = 150 \text{ mA}$	—	—	-30	dBc
η_c^*	$P_{OUT} = 250 \text{ W PEP}$	$V_{CC} = 50 \text{ V}$	$I_{CQ} = 150 \text{ mA}$	40	45	—	%
COB	$f = 1 \text{ MHz}$	$V_{CB} = 50 \text{ V}$		—	270	—	pf

Note: $*f_1 = 30.00 \text{ MHz}$, $f_2 = 30.001 \text{ MHz}$

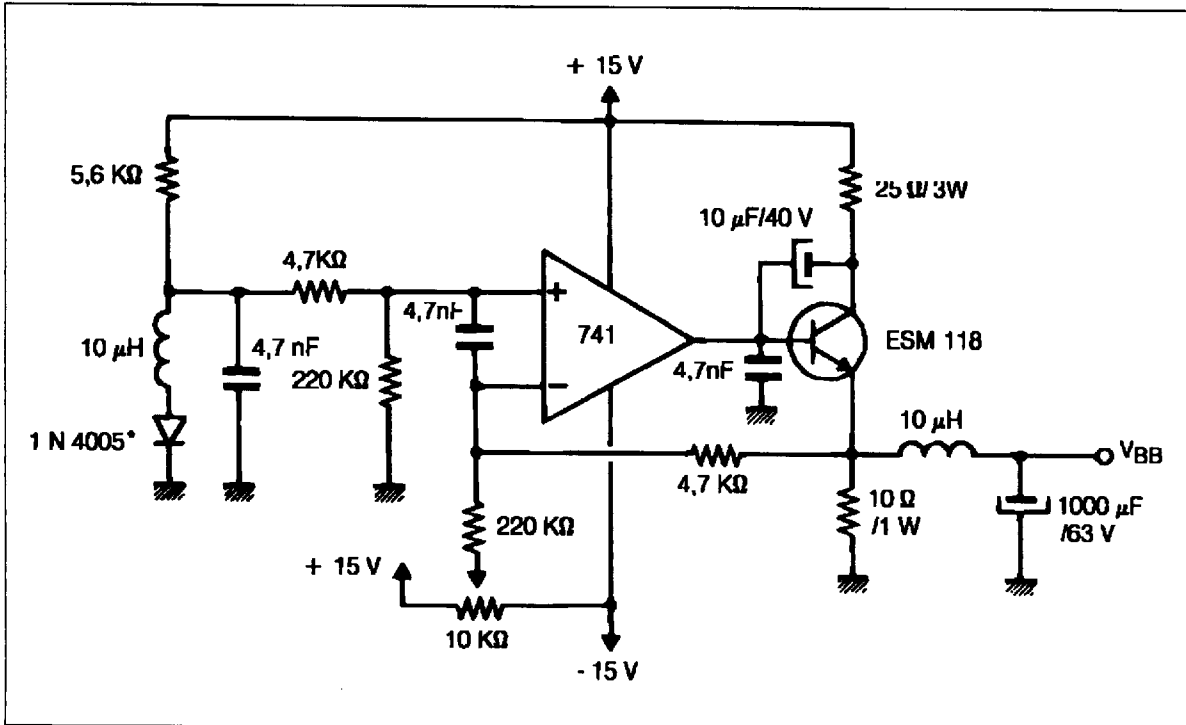
TEST CIRCUIT



MOUNTING CIRCUIT

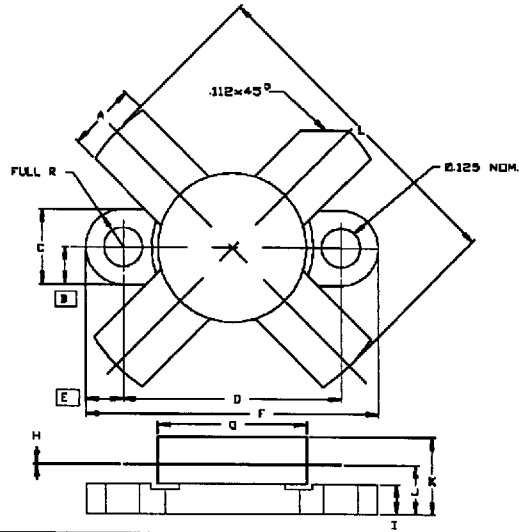


BIAS CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0174
UDCS No. 1011000 rev. C



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	.980/24,89	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	.150/3,81	.175/4,45			

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