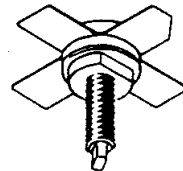


RF & MICROWAVE TRANSISTORS HF SSB APPLICATIONS

- OPTIMIZED FOR SSB
- 30 MHz
- 50 VOLTS
- COMMON EMITTER
- GOLD METALLIZATION
- $P_{OUT} = 75 \text{ W MIN. WITH } 14.0 \text{ dB GAIN}$

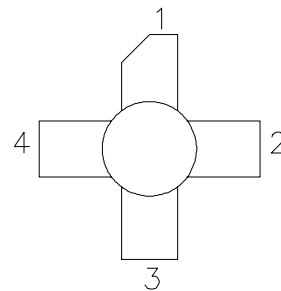


.380 4L STUD (M135)
epoxy sealed

ORDER CODE
SD1733

BRANDING
TH513

PIN CONNECTION



- | | |
|--------------|------------|
| 1. Collector | 3. Base |
| 2. Emitter | 4. Emitter |

DESCRIPTION

The SD1733 is a 50 V Class AB epitaxial silicon NPN planar transistor designed primarily for SSB and VHF communications. This device utilizes emitter ballasting for improved ruggedness and reliability.

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}\text{C}$)

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	3.25	A
P_{DISS}	Power Dissipation	127	W
T_J	Junction Temperature	+200	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	- 65 to +150	$^{\circ}\text{C}$

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	2.0	$^{\circ}\text{C/W}$
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SD1733 (TH513)

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

STATIC

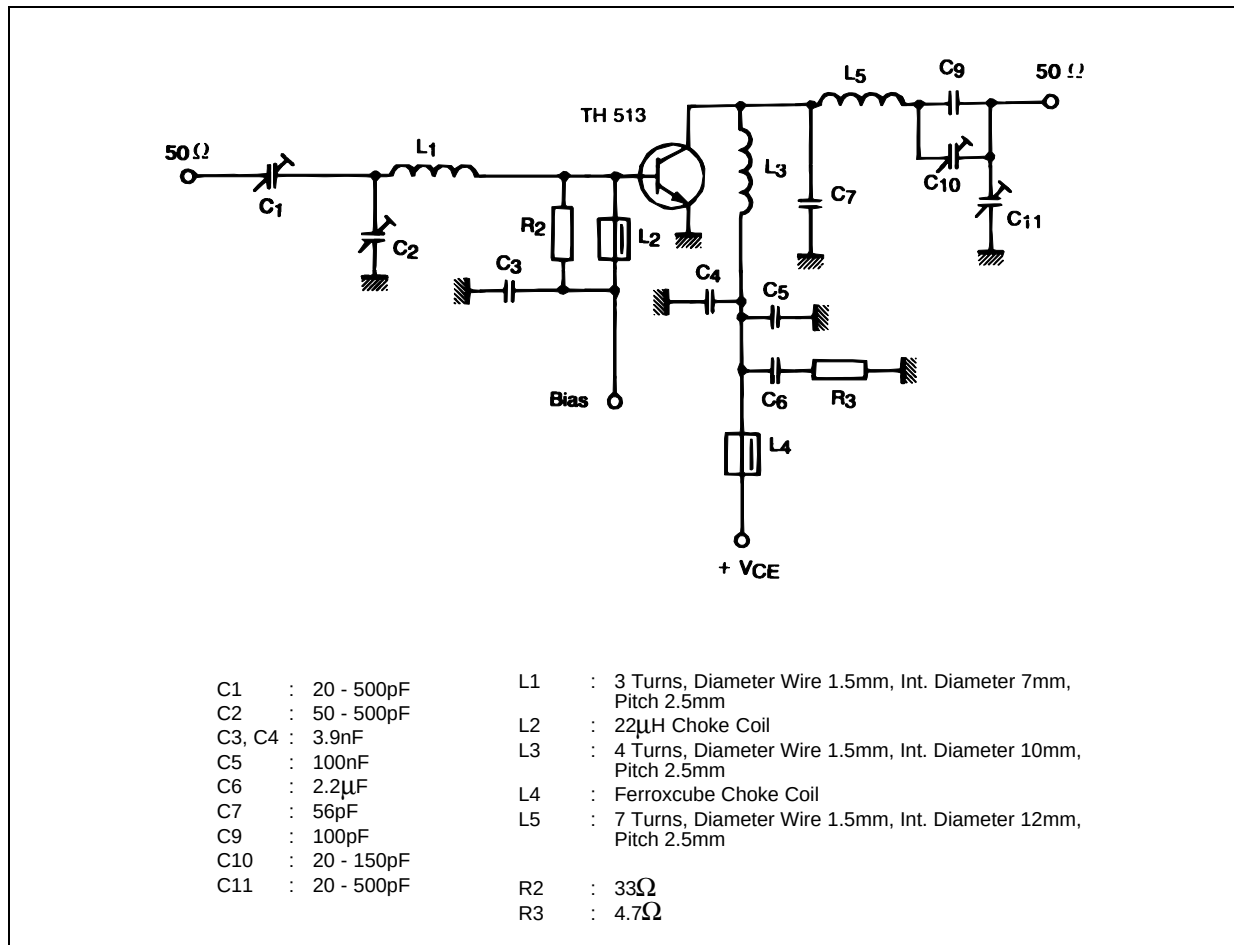
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CES}	$I_{\text{C}} = 100\text{mA}$	$V_{\text{BE}} = 0\text{V}$	110	—	—	V
BV_{CEO}	$I_{\text{C}} = 200\text{mA}$	$I_{\text{B}} = 0\text{mA}$	55	—	—	V
BV_{EBO}	$I_{\text{E}} = 10\text{mA}$	$I_{\text{C}} = 0\text{mA}$	4.0	—	—	V
h_{FE}	$V_{\text{CE}} = 6\text{V}$	$I_{\text{C}} = 1.4\text{A}$	19	—	50	—

DYNAMIC

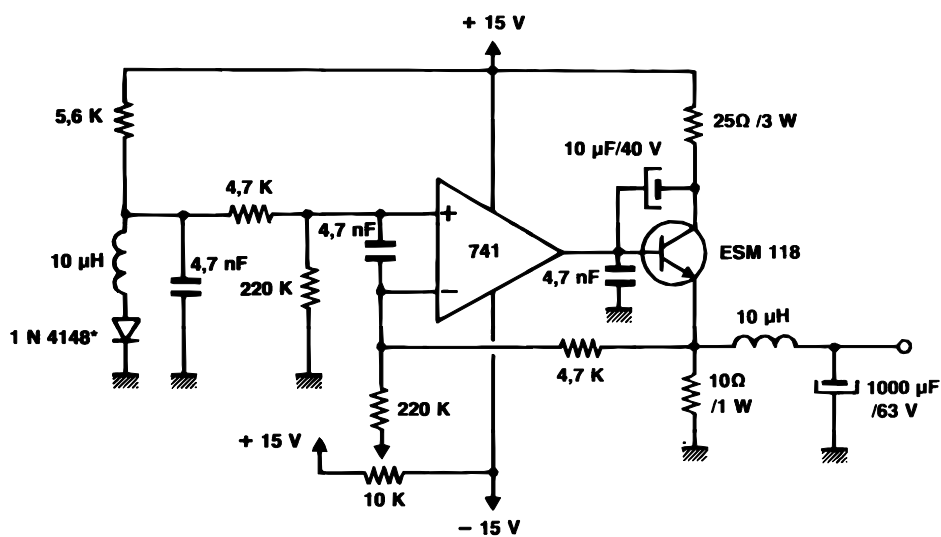
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
P_{OUT}	$f = 30\text{ MHz}$	$V_{\text{CE}} = 50\text{ V}$	75	—	—	W
G_{P}^*	$P_{\text{OUT}} = 75\text{ W PEP}$	$V_{\text{CE}} = 50\text{ V}$	14	—	—	dB
IMD^*	$P_{\text{OUT}} = 75\text{ W PEP}$	$V_{\text{CE}} = 50\text{ V}$	—	—	−30	dBc
η_{C}^*	$P_{\text{OUT}} = 75\text{ W PEP}$	$V_{\text{CE}} = 50\text{ V}$	37	—	—	%
C_{OB}	$f = 1\text{ MHz}$	$V_{\text{CB}} = 50\text{ V}$	—	—	100	pF

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

TEST CIRCUIT



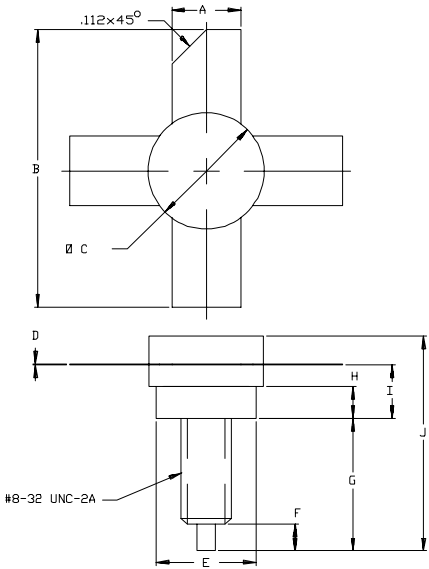
BIAS CIRCUIT



SD1733 (TH513)

PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0135



SGS-THOMSON MICROELECTRONICS		
	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.220/5,59	.230/5,84
B	.980/24,89	
C	.370/9,40	.385/9,78
D	.004/0,10	.007/0,18
E	.320/8,13	.330/8,38
F	.100/2,54	.130/3,30
G	.450/11,43	.490/12,45
H	.090/2,29	.100/2,54
I	.155/3,94	.175/4,45
J		.750/19,05

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