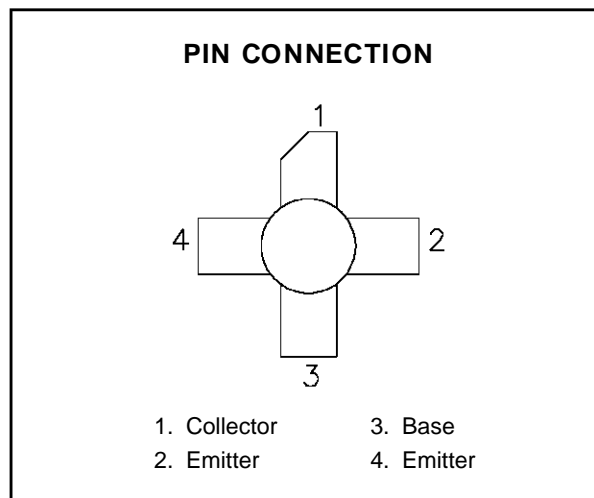
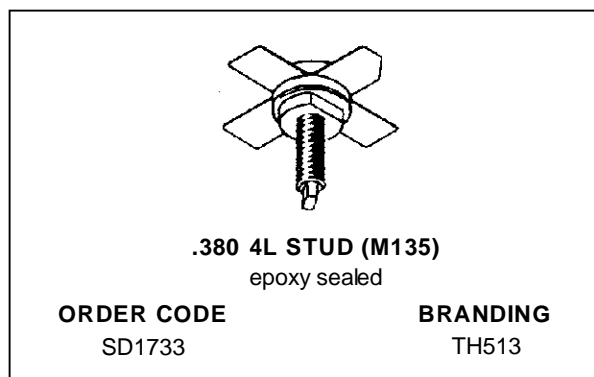


## RF & MICROWAVE TRANSISTORS HF SSB APPLICATIONS

- OPTIMIZED FOR SSB
- 30 MHz
- 50 VOLTS
- COMMON EMITTER
- GOLD METALLIZATION
- P<sub>OUT</sub> = 75 W MIN. WITH 14.0 dB GAIN



### 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<sub>case</sub> = 25°C)

Symbol	Parameter	Value	Unit
V <sub>CB0</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	3.25	A
P <sub>DISS</sub>	Power Dissipation	127	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	2.0	°C/W
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## SD1733 (TH513)

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

#### STATIC

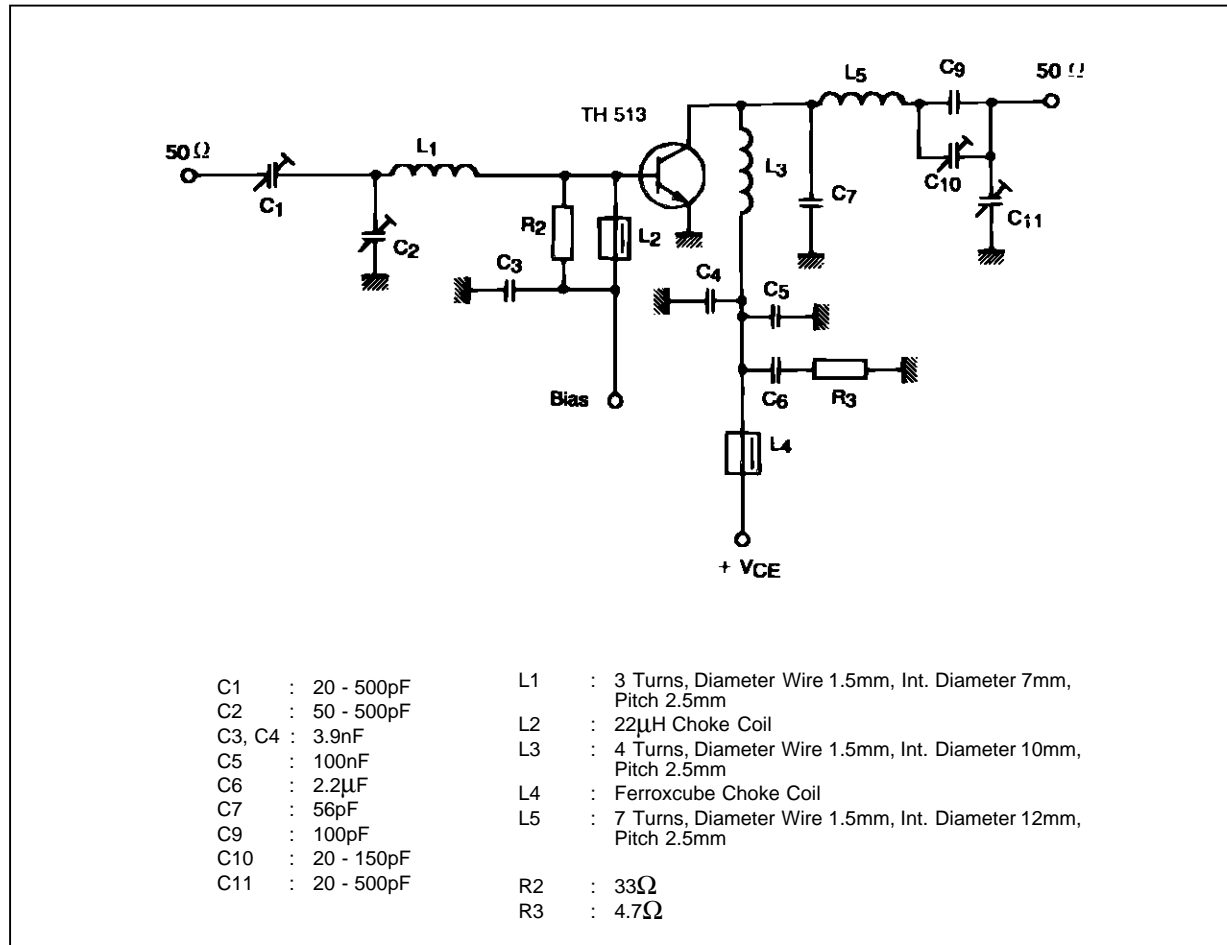
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
$BV_{\text{CES}}$	$I_{\text{C}} = 100\text{mA}$	$V_{\text{BE}} = 0\text{V}$	110	—	—	V
$BV_{\text{CEO}}$	$I_{\text{C}} = 200\text{mA}$	$I_{\text{B}} = 0\text{mA}$	55	—	—	V
$BV_{\text{EBO}}$	$I_{\text{E}} = 10\text{mA}$	$I_{\text{C}} = 0\text{mA}$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

#### DYNAMIC

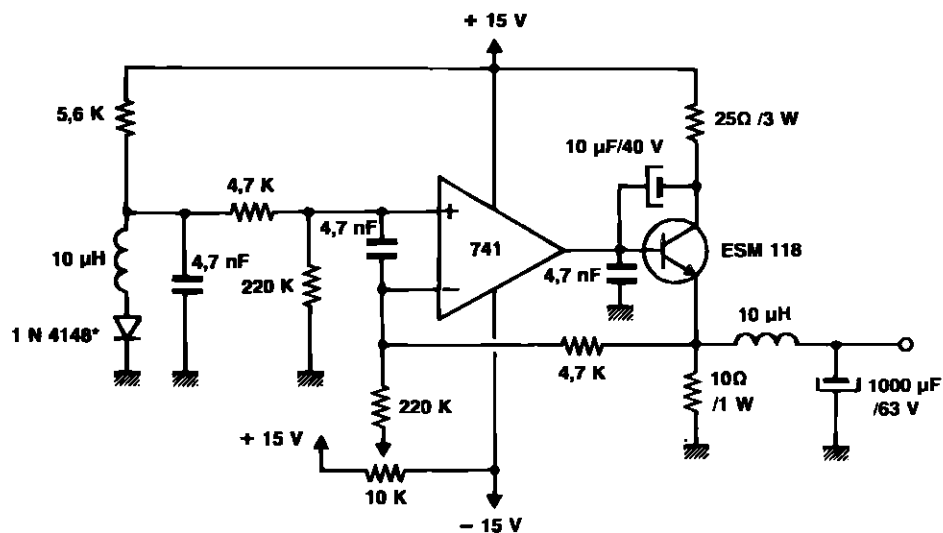
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
$P_{\text{OUT}}$	$f = 30\text{ MHz}$	$V_{\text{CE}} = 50\text{ V}$	75	—	—	W
$G_{\text{P}}^*$	$P_{\text{OUT}} = 75\text{ W PEP}$	$V_{\text{CE}} = 50\text{ V}$	14	—	—	dB
$\text{IMD}^*$	$P_{\text{OUT}} = 75\text{ W PEP}$	$V_{\text{CE}} = 50\text{ V}$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

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

## TEST CIRCUIT



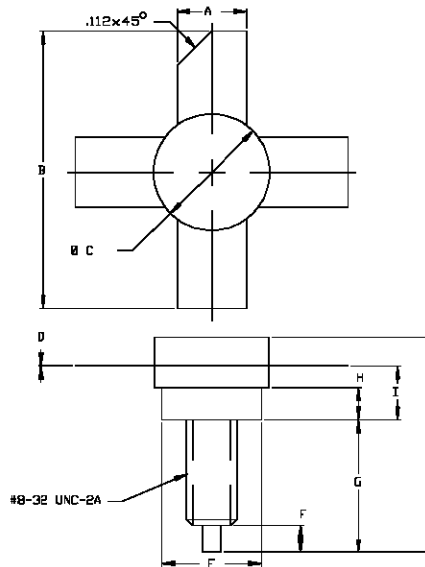
## BIAS CIRCUIT



# 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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