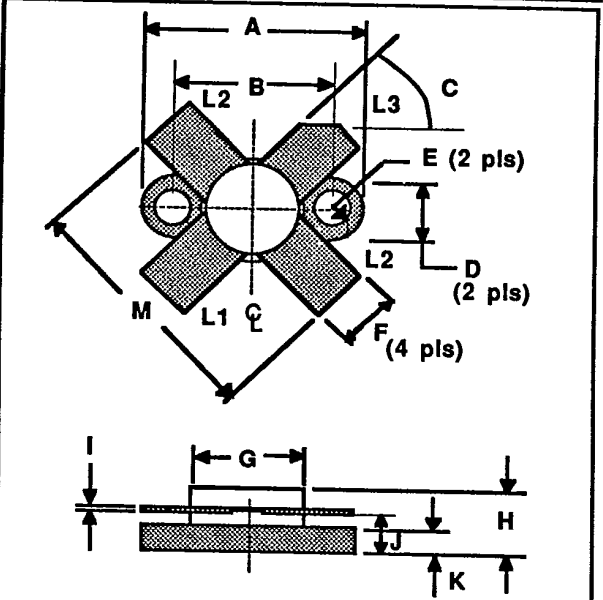


GENERAL DESCRIPTION

The S175-50 is a state-of-the-art 50 volt device designed for class A, AB, or C operation in the HF/VHF frequency bands. Its high collector voltage simplifies the design of wideband, SSB, linear amplifiers.

S175-50
175 WATTS - 50 VOLTS
2-30 MHz

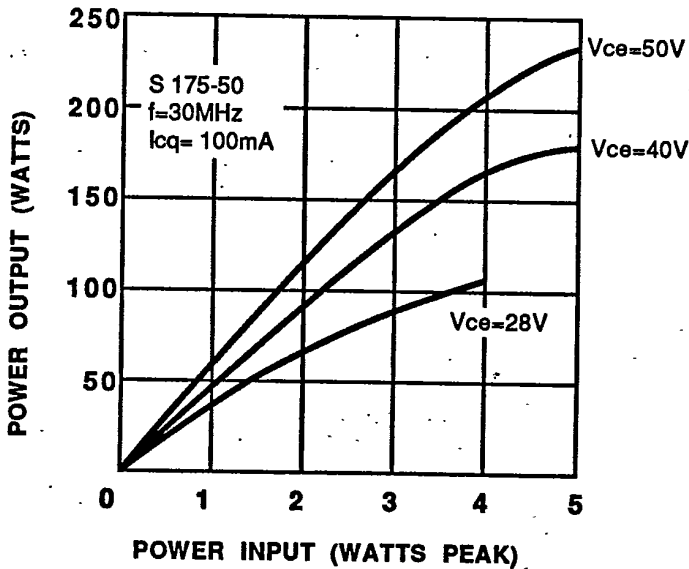
HF LINEAR BIPOLAR



ABSOLUTE MAXIMUM RATINGS

Total Power Dissipation @ 25 C Case Temperature (Note 1)	270 W
Maximum Voltage and Current	
BVces Collector to Emitter Voltage	110 V
BVebo Emitter to Base Voltage	4.0V
ic Collector Current	20 A
Maximum Temperatures	
Storage Temperature	-65 to +150°C
Operating Junction Temperature	+200°C

POWER OUTPUT VS POWER INPUT



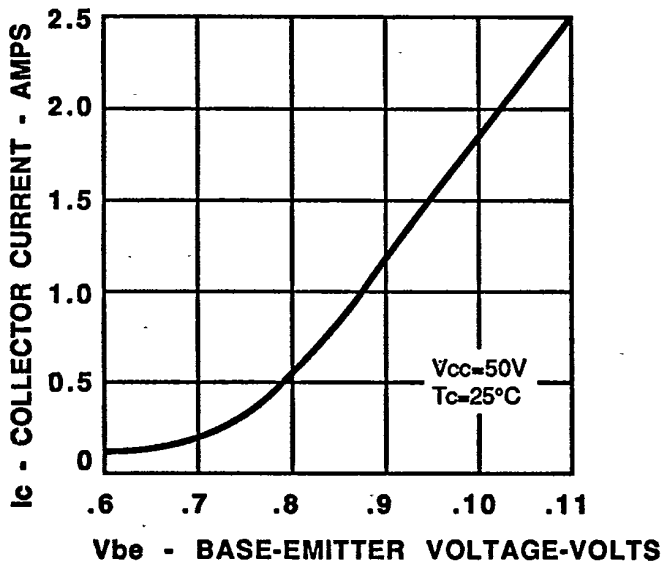
DIM	Millimeter	TOL	Inches	TOL	
L1 : B	A	24.76	.13	.975	.005
L2 : E	B	18.42	.13	.725	.005
L3 : C	C	45°	5°	45°	5°
	D	6.35	.13	.250	.005
	E	3.17 DIA	.13	.125 DIA	.005
	F	5.71	.13	.225	.005
	G	12.70 DIA	.13	.500 DIA	.005
	H	6.65	REF	.262	REF
	I	0.13	.02	.005	.001
	J	4.24	.13	.167	.005
	K	3.17	.13	.125	.005
	M	28.90	.25	1.140	.010

S175-50-2

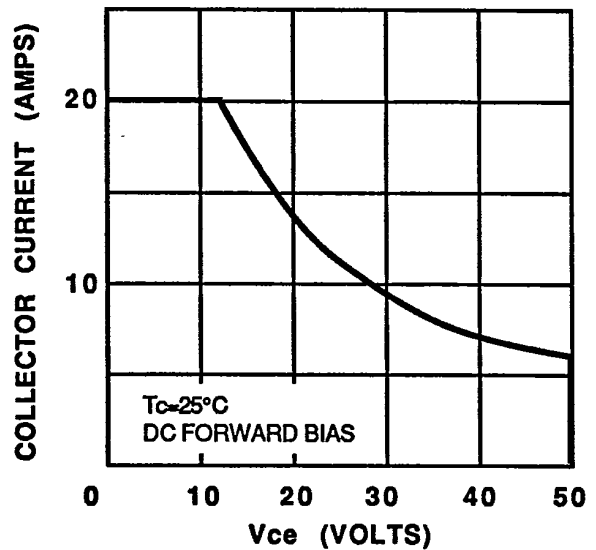
ELECTRICAL CHARACTERISTICS

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
Pout	Power Output	f= 30 MHz, Vcc= 50 V	175			Watts
Pin	Power Input	At Rated Power Out			3.5	Watts
Pg	Power Gain	At Rated Power Out	17			dB
BVebo	Voltage - Emitter to Base	Ie= 10 mA	4			Volts
BVces	Voltage - Collector to Emitter	Ic= 100 mA	110			Volts
BVceo	Voltage - Collector to Emitter	Ic= 100mA	53			Volts
η_c	Collector Efficiency	At Rated Power Out		65		%
Cob	Capacitance-Collector to Base	Vcb= 50 V, Ie= 0		180		pF
Zin	Series Input Impedance	At Rated Power Out and Frequency		0.6-j0.4		OHMS
Zl	Series Load Impedance	At Rated Power Out and Frequency		4.6+j2.1		OHMS
VSWR	Load Mismatch Tolerance	At Rated Power Out			$\infty:1$	
h_{FE}	DC - Current Gain	Vce= 5V, Ic=2A	10			

COLLECTOR CURRENT VS BASE EMITTER VOLTAGE (TYPICAL)



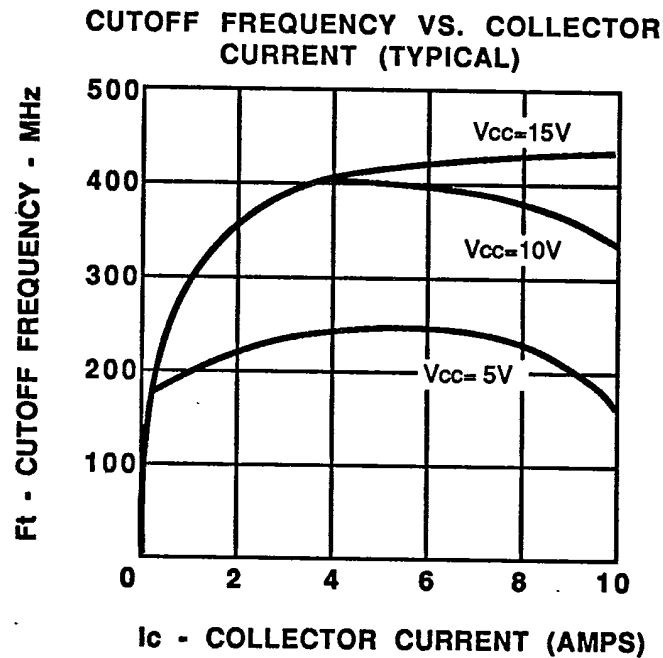
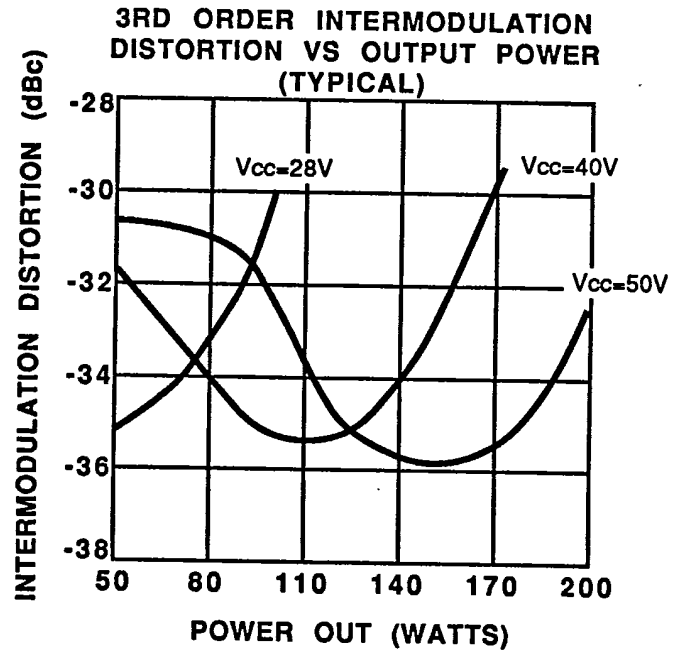
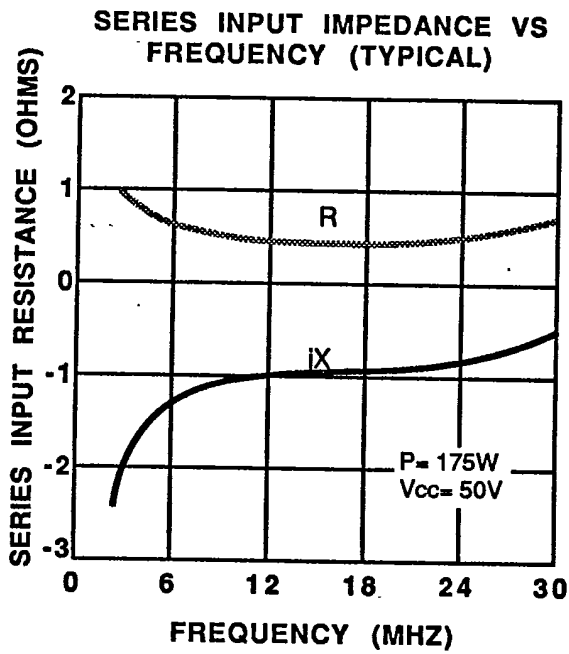
DC SAFE OPERATING AREA (TYPICAL)



SPECIFICATIONS MAY BE SUBJECT TO CHANGE WITHOUT NOTICE

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S175-50-3



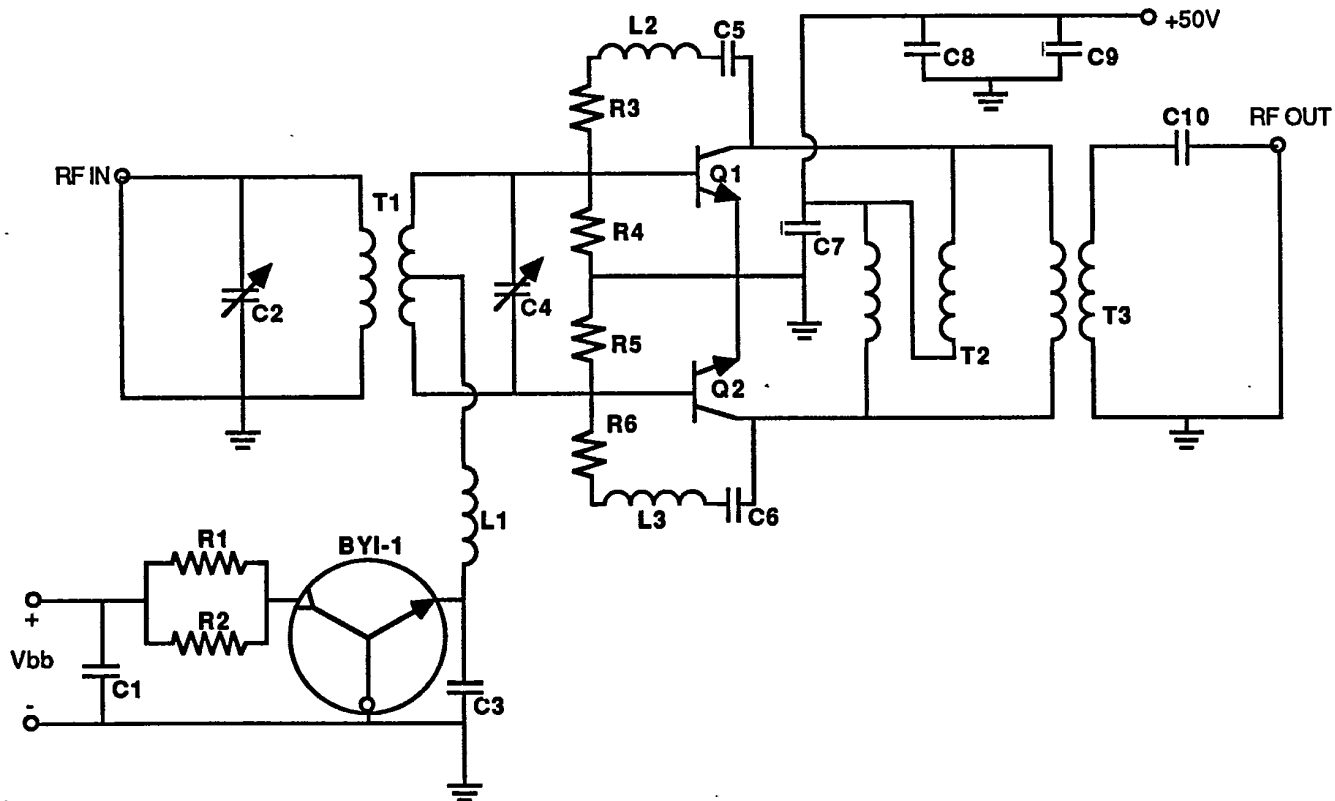
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S175-50-4

S175-50 TEST CIRCUIT

2-30 MHz, 300 Watts

Linear Amplifier



Q1, Q2
BYISTOR
C1, C3, C5, C6, C7, C8
C2
C4
C9
C10
L1
L2, L3
R1, R2
R3, R6
R4, R5

ACRIAN S175-50
ACRIAN BYI-1
0.1 μ F CERAMIC
25-240pF COMPRESSION MICA
75-480pF COMPRESSION MICA
10 μ F, 50V, ELECTROLYTIC
2700pF DM15
6 TURNS ON INDIANA GENERAL F627-9, H MATERIAL
2.2 μ H, MOLDED INDUCTOR
22 Ω , 2 WATTS
220 Ω , 2 WATTS
10 Ω , 1/4 WATT

TRANSFORMER DETAILS

- T1: 8 BEADS OF INDIANA GENERAL F625-9, H MATERIAL ON TWO BRASS TUBES. THE PRIMARY IS FOUR TURNS OF #20 VINYL CLAD WIRE WOUND THROUGH THE BRASS TUBES.
- T2: #20 TWISTED PAIR, APPROXIMATELY 2 CRESTS PER CENTIMETER, WOUND ON INDIANA GENERAL F624-19, H MATERIAL
- T3: 10 BEADS OF INDIANA GENERAL F627-8, H MATERIAL MOUNTED ON TWO BRASS TUBES. THE SECONDARY CONSIST OF 3 #20 VINYL CLAD WIRES IN PARALLEL. THE THREE WIRES SHOULD BE WOUND TO PRODUCE A 2:1 TURNS RATIO.