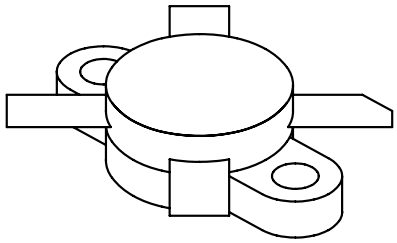
S175 - 50

175 Watts, 50 Volts, Class AB
Milcom 1.5 - 30 MHz

GENERAL DESCRIPTION

The S175-50 is a 50 Volt, COMMN EMITTER 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. The transistor chip is built using Gold Topside Metal, diffused emitter ballast resistors and silicon nitride passivation, providing the user with the Highest MTTF available.

CASE OUTLINE
55HX, Style 2



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C 270 Watts

Maximum Voltage and Current

BVces	Collector to Emiter Voltage	110 Volts
BVebo	Emitter to Base Voltage	4.0 Volts
Ic	Collector Current	20 A

Maximum Temperatures

Storage Temperature	- 65 to +150°C
Operating Junction Temperature	+200°C

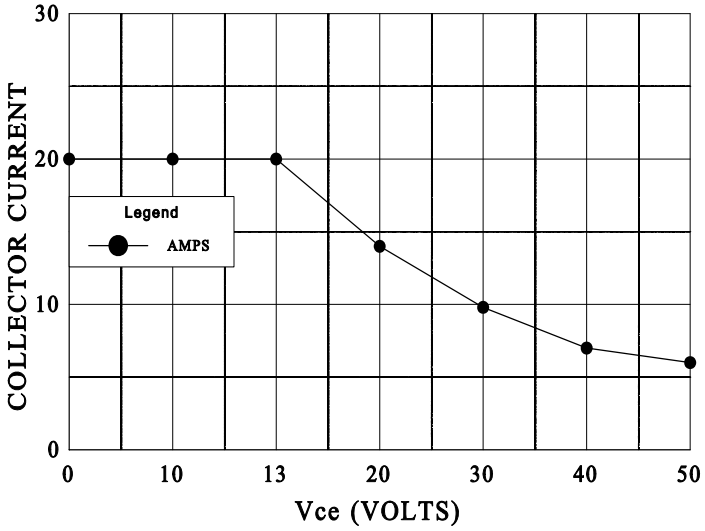
ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Output	F = 30 MHz	175			Watts
Pin	Power Input	Vcc = 50 Volts			3.5	Watts
Pg	Power Gain	At Rated Power Out	17	17.5		dB
ηc	Efficiency			65		%
VSWR	Load Mismatch Tolerance				30:1	

BVebo	Emitter to Base Breakdown	Ie = 10 mA	4			Volts
BVces	Collector to Emitter	Ic = 100 mA	110			Volts
BVceo	Breakdown	Ie = 100 mA	53			Volts
Zin	Collector to Emitter	At Rated Pout & Freq.		0.6-j0.4		OHMS
ZI	Breakdown	At Rated Pout & Freq.		4.6+2.1		OHMS
Cob	Series Input Impedance	Vcb = 50 V, Ie = 0		180		
h_{FE}	Series Load Impedance	Vce = 5 V, Ic = 2 A	10			
IMD	Output Capacitance	At Rated Pout		-35		dBc
	DC - Current Gain					
	Intermodulation Distortion Lev.					

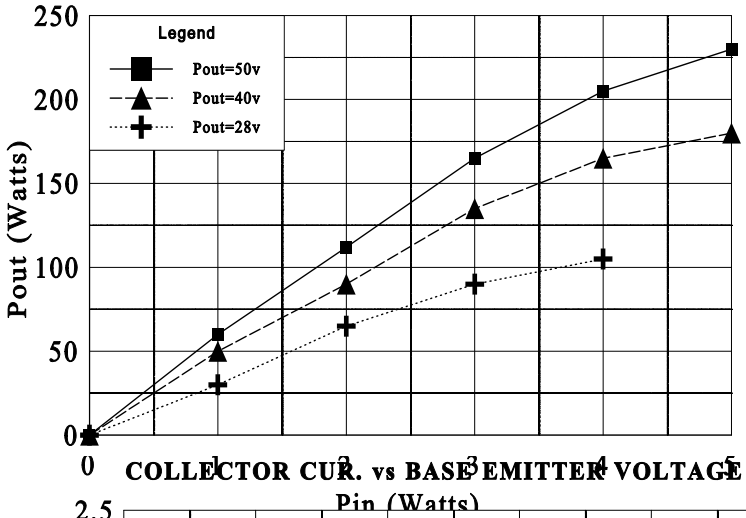
Initial Issue June, 1994

DC SAFE OPERATING AREA

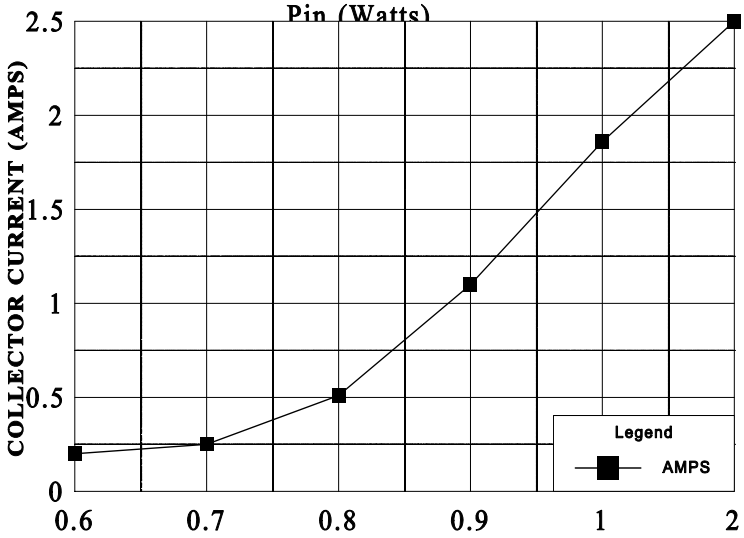


POWER OUTPUT vs POWER INPUT

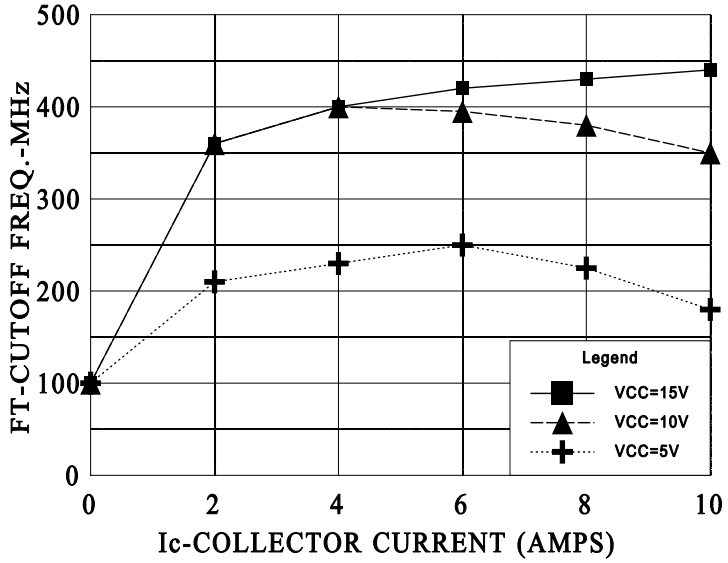
Vcc - 50V, Frequency 30MHz



COLLECTOR CUR. vs BASE EMITTER VOLTAGE

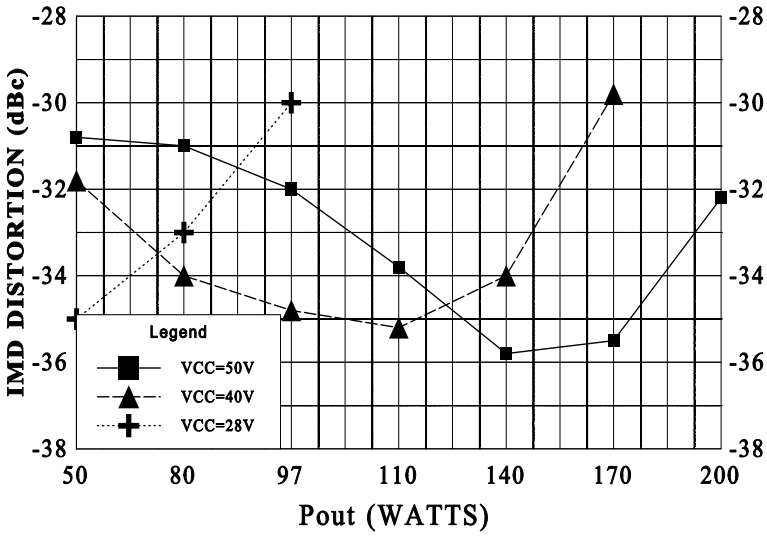


CUTOFF FREQUENCY vs COLLECTOR CURRENT



3RD ORDER IMD vs Pout

Vcc = 50V, Pin = W



SERIES INPUT IMPEDANCE vs FREQUENCY