

0105 - 12

12 Watts, 28 Volts, Class AB

Defcom 100 - 500 MHz

GENERAL DESCRIPTION

The 0105-12 is a double input matched COMMON EMITTER broadband transistor specifically intended for use in the 100-500 MHz frequency band. It may be operated in Class AB or C. Gold metallization and silicon diffused resistors ensure ruggedness and high reliability.

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C 22 Watts

Maximum Voltage and Current

BVces Collector to Emitter Voltage 55 Volts

BVebo Emitter to Base Voltage 4.0 Volts

Ic Collector Current 1.4 A

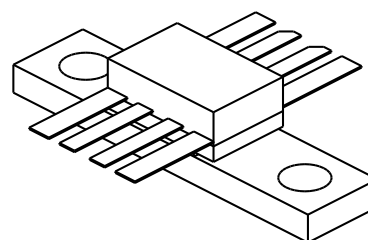
Maximum Temperatures

Storage Temperature - 65 to +150°C

Operating Junction Temperature +200°C

CASE OUTLINE

55CU, Style 2



ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P_{out}	Power Output	F = 500 MHz	12			Watts
P_{in}	Power Input	V _{cc} = 28 Volts		1.2	2.0	Watts
P_g	Power Gain		7.8	10		dB
η_c	Efficiency			60		%
VSWR	Load Mismatch Tolerance				20:1	

BVebo	Emitter to Base Breakdown	I _e = 5 mA	4.0			Volts
BVces	Collector to Emitter Breakdown	I _c = 20 mA	55			Volts
BVceo	Collector to Emitter Breakdown	I _e = 50 mA	30			Volts
Cob	Output Capacitance	V _{cb} = 28 V, F = 1 MHz		9.0		pF
h_{FE}	DC - Current Gain	V _{ce} = 5 V, I _c = 100 A	10			
θ_{jc}	Thermal Resistance				8.0	°C/W

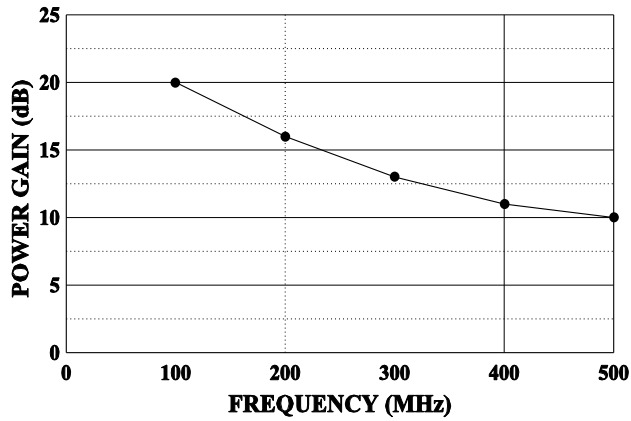
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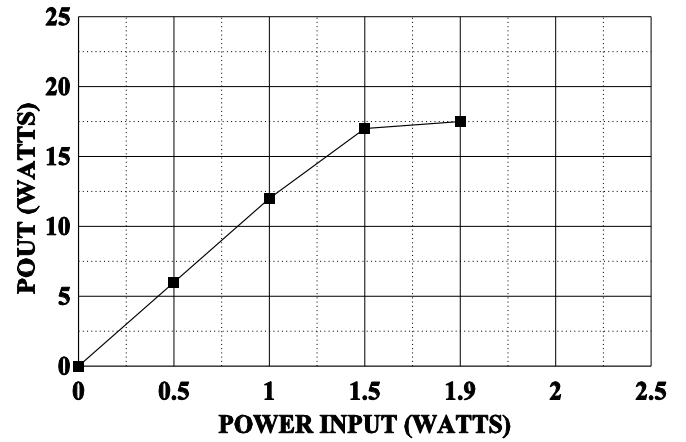
POWER GAIN VS FREQUENCY

P_o=12W, V_{cc}=28V

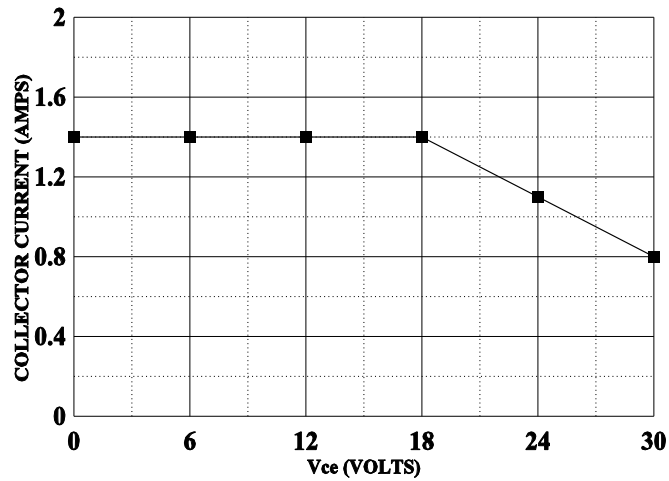


POWER OUTPUT vs POWER INPUT

V_{cc}= 28V f=400MHz

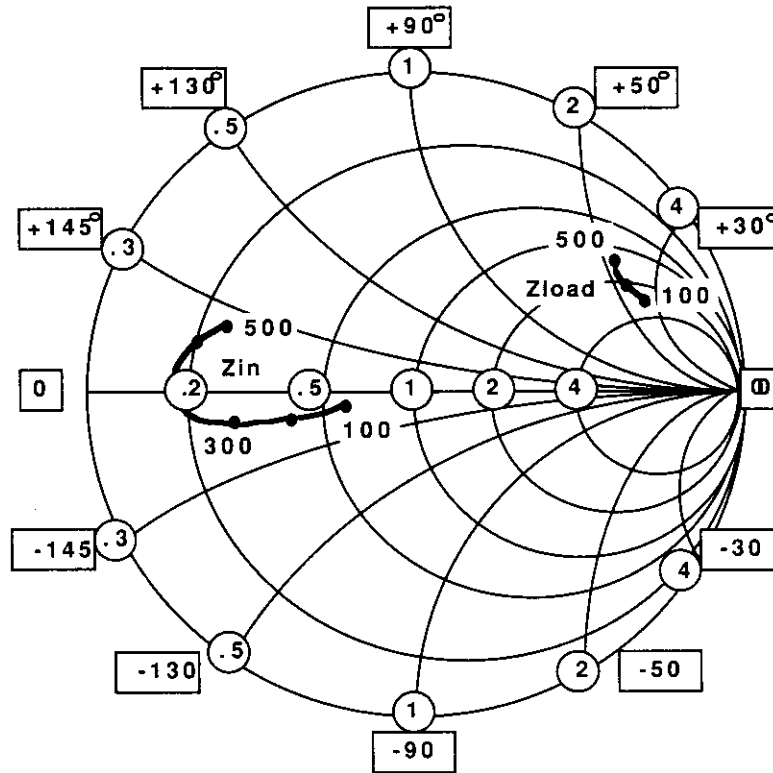


DC SAFE OPERATING AREA

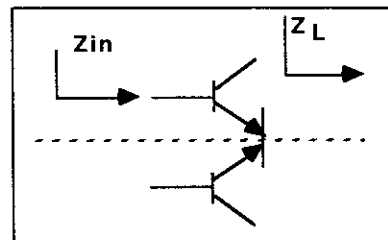


SMITH CHART 0105-12

NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES



NORMALIZED TO A 10 OHM SYSTEM.



FREQUENCY			FREQUENCY		
MHz	R	JX	MHz	R	JX
100	6.8	-0.4	100	28	+33
200	4.8	-0.8	200	25	+26
300	3.3	-0.6	300	22	+22
400	2.0	+0.8	400	18	+21
500	2.5	+2.0	500	14	+21