GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

0105-50

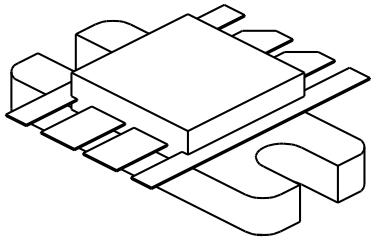
50 Watts, 28 Volts, Class AB
Defcom 100 - 500 MHz

GENERAL DESCRIPTION

The 0105-50 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.

CASE OUTLINE

55JT, Style 2



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25ºC 140 Watts

Maximum Voltage and Current

BVces	Collector to Emiter Voltage	65 Volts
BVebo	Emitter to Base Voltage	4.0 Volts
Ic	Collector Current	7.0 A

Maximum Temperatures

Storage Temperature	- 65 to +150ºC
Operating Junction Temperature	+200ºC

ELECTRICAL CHARACTERISTICS @ 25 ^{O}C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Output	F = 500 MHz	50			Watts
Pin	Power Input	Vcc = 28 Volts		5.0	7.0	Watts
Pg	Power Gain		8.5	10		dB
η**c**	Efficiency			55		%
VSWR	Load Mismatch Tolerance				5:1	

BVebo	Emitter to Base Breakdown	Ie = 10 mA	4.0			Volts
BVces	Collector to Emitter Breakdown	Ic = 100 mA	60			Volts
BVceo	Collector to Emitter Breakdown	Ie = 100 mA	33			Volts
Cob	Output Capacitance	Vcb = 28 V, F = 1 MHz		52		pF
$\mathbf{h_{FE}}$	DC - Current Gain	Vce = 5 V, Ic = 1 A	10			
θ**jc**	Thermal Resistance				1.25	ºC/W

Issue August 1996

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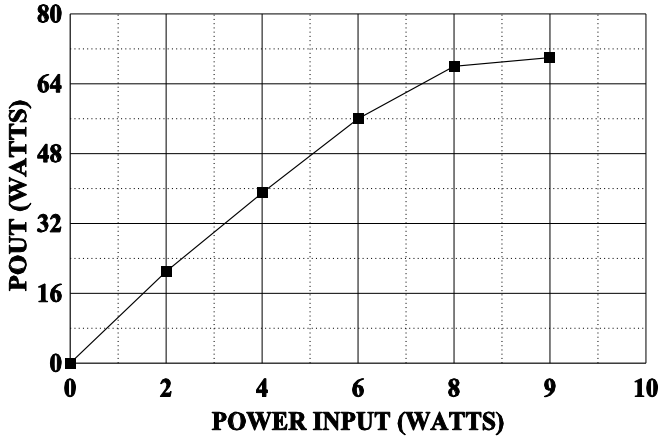
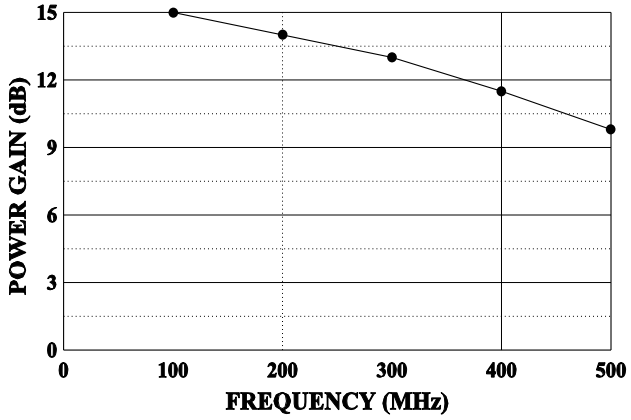
POWER OUTPUT vs POWER INPUT

Vcc= 28V f=400MHz

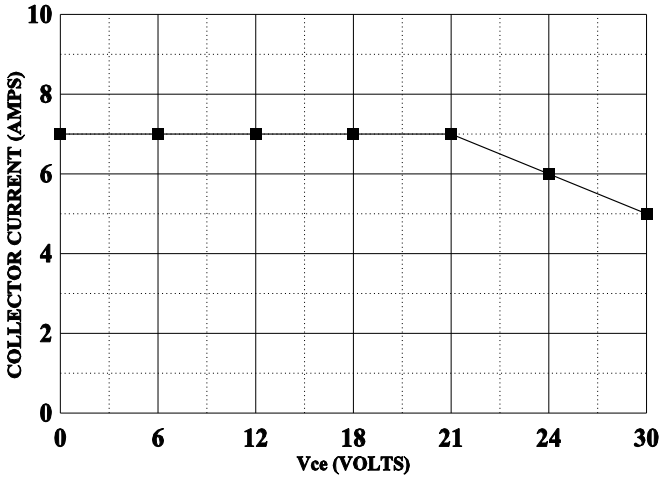


POWER GAIN VS FREQUENCY

Po=50W, Vcc=28V



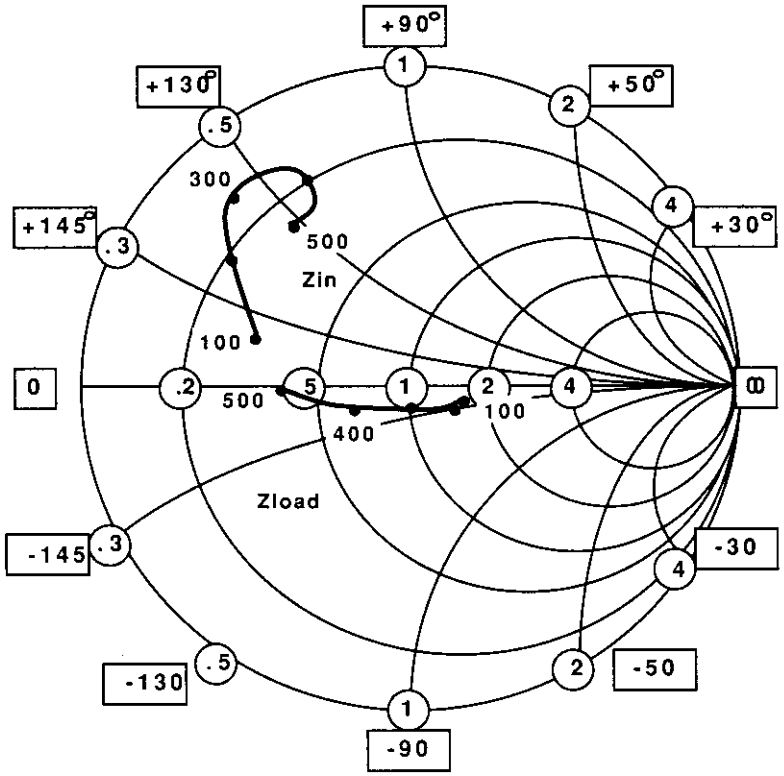
DC SAFE OPERATING AREA



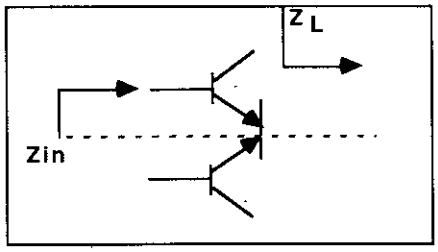
SMITH CHART

0105-50

NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES



NORMALIZED TO 10 OHM SYSTEM



FREQUENCY MHz	Zin R	Zin JX	FREQUENCY MHz	Zload R	Zload JX
100	3.5	+ 1.8	100	12.2	- 2.0
200	2.2	+ 3.0	200	11.0	- 2.5
300	1.5	+ 4.4	300	10.0	- 1.4
400	2.4	+ 5.2	400	7.0	- 1.4
500	2.8	+ 4.0	500	4.0	- 0.5