GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

UMIL 10

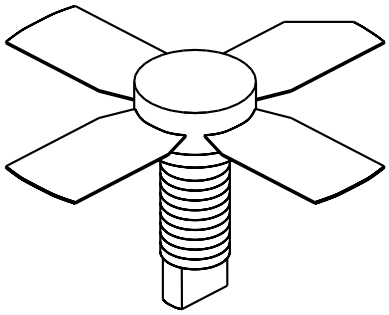
100 Watts, 28 Volts, Class AB
Defcom 100 - 400 MHz

GENERAL DESCRIPTION

The UMIL10 is a COMMON EMITTER broadband transistor specifically intended for use in the 100-400 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

55FT, Style 2



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25ºC 28 Watts

Maximum Voltage and Current

BVces	Collector to Emiter Voltage	55 Volts
BVebo	Emitter to Base Voltage	4.0 Volts
Ic	Collector Current	1.5 A

Maximum Temperatures

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

ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Output	F = 400 MHz	10			Watts
Pin	Power Input	Vcc = 28 Volts			1.0	Watts
Pg	Power Gain		10.0			dB
ηc	Efficiency			60		%
VSWR	Load Mismatch Tolerance				30:1	

BVebo	Emitter to Base Breakdown	Ie = 5 mA	4.0			Volts
BVces	Collector to Emitter Breakdown	Ic = 50 mA	55			Volts
BVceo	Collector to Emitter Breakdown	Ie = 50 mA	30			Volts
Cob	Output Capacitance	Vcb = 28 V, F = 1 MHz		11.5		pF
h_{FE}	DC - Current Gain	Vce = 5 V, Ic = 200 mA	10			
θjc	Thermal Resistance				6.3	ºC/W

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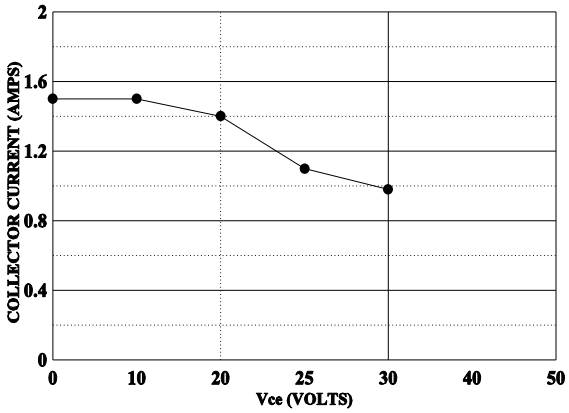
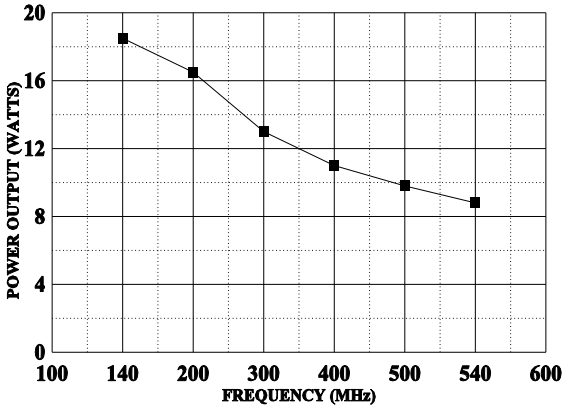
DC SAFE OPERATING AREA

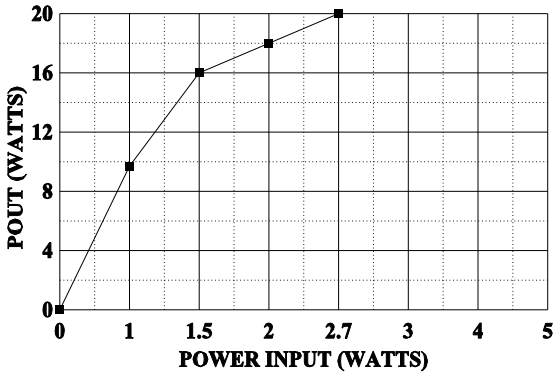


POWER GAIN VS FREQUENCY



POWER OUTPUT vs POWER INPUT

Vcc= 28V f=400MHz



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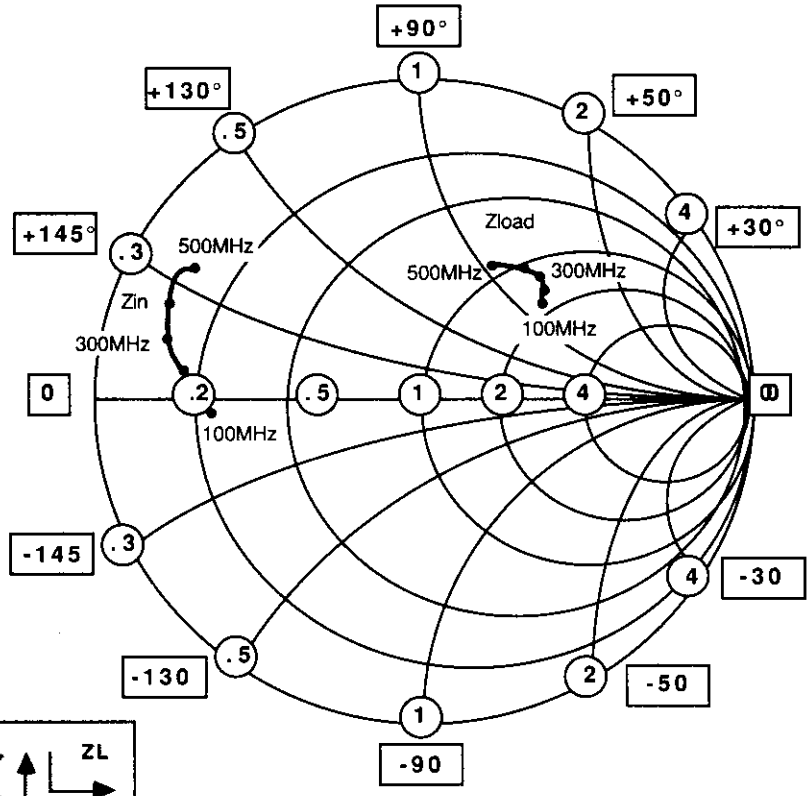
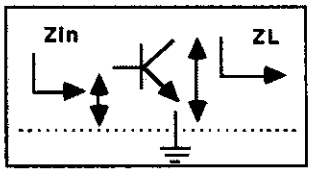
SMITH CHART
UMIL10

NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES





NORMALIZED TO A 10 OHM SYSTEM

FREQUENCY MHz	Zin R	Zin JX	FREQUENCY MHz	Zload R	Zload JX
100	2.3	- j0.9	100	18	+ j14
200	1.8	+ j0.4	200	15	+ j15
300	1.4	+ j1.3	300	13	+ j15
400	1.25	+ j2.4	400	10.5	+ j13
500	1.4	+ j3.3	500	9.0	+ j10.5