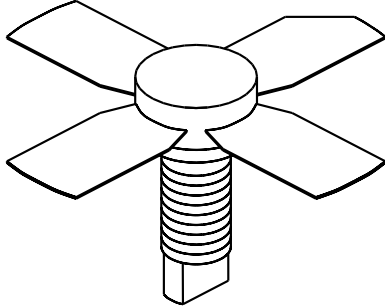


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# UMIL 10

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

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<p><b>GENERAL DESCRIPTION</b></p> <p>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.</p>	<p><b>CASE OUTLINE</b> <b>55FT, Style 2</b></p> 
<p><b>ABSOLUTE MAXIMUM RATINGS</b></p> <p>Maximum Power Dissipation @ 25°C                      28 Watts</p> <p><b>Maximum Voltage and Current</b></p> <p>BVces    Collector to Emitter Voltage                      55 Volts          BVebo    Emitter to Base Voltage                              4.0 Volts          Ic        Collector Current    1.5 A</p> <p><b>Maximum Temperatures</b></p> <p>Storage Temperature    - 65 to +150°C          Operating Junction Temperature                              +200°C</p>	

## ELECTRICAL CHARACTERISTICS @ 25 °C

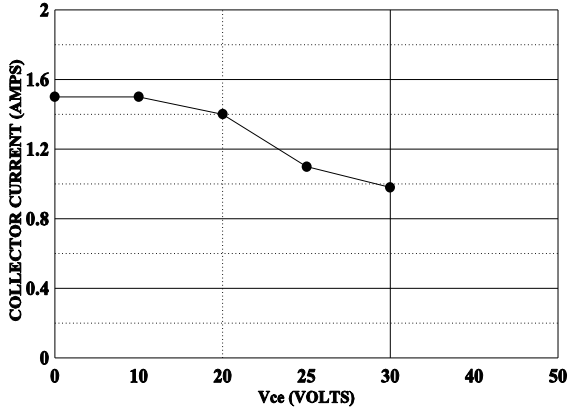
SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
<b>Pout</b>	Power Output	F = 400 MHz	10			Watts
<b>Pin</b>	Power Input	Vcc = 28 Volts			1.0	Watts
<b>Pg</b>	Power Gain		10.0			dB
$\eta_c$	Efficiency			60		%
<b>VSWR</b>	Load Mismatch Tolerance				30:1	

<b>BVebo</b>	Emitter to Base Breakdown	Ie = 5 mA	4.0			Volts
<b>BVces</b>	Collector to Emitter Breakdown	Ic = 50 mA	55			Volts
<b>BVceo</b>	Collector to Emitter Breakdown	Ie = 50 mA	30			Volts
<b>Cob</b>	Output Capacitance	Vcb = 28 V, F = 1 MHz		11.5		pF
<b>h<sub>FE</sub></b>	DC - Current Gain	Vce = 5 V, Ic = 200 mA	10			
$\theta_{jc}$	Thermal Resistance				6.3	°C/W

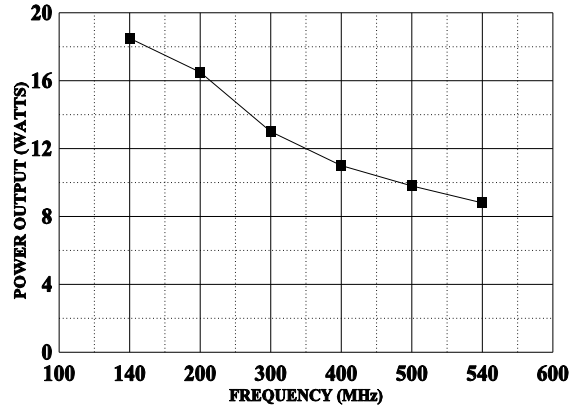
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**DC SAFE OPERATING AREA**

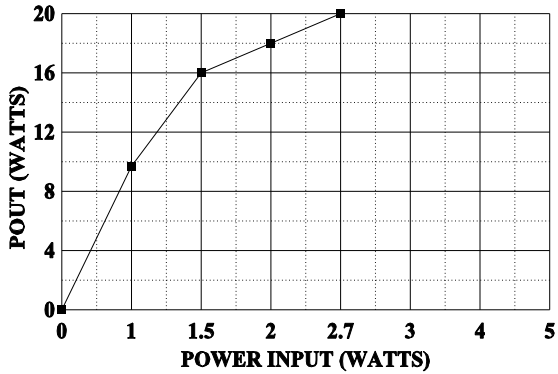


**POWER GAIN VS FREQUENCY**



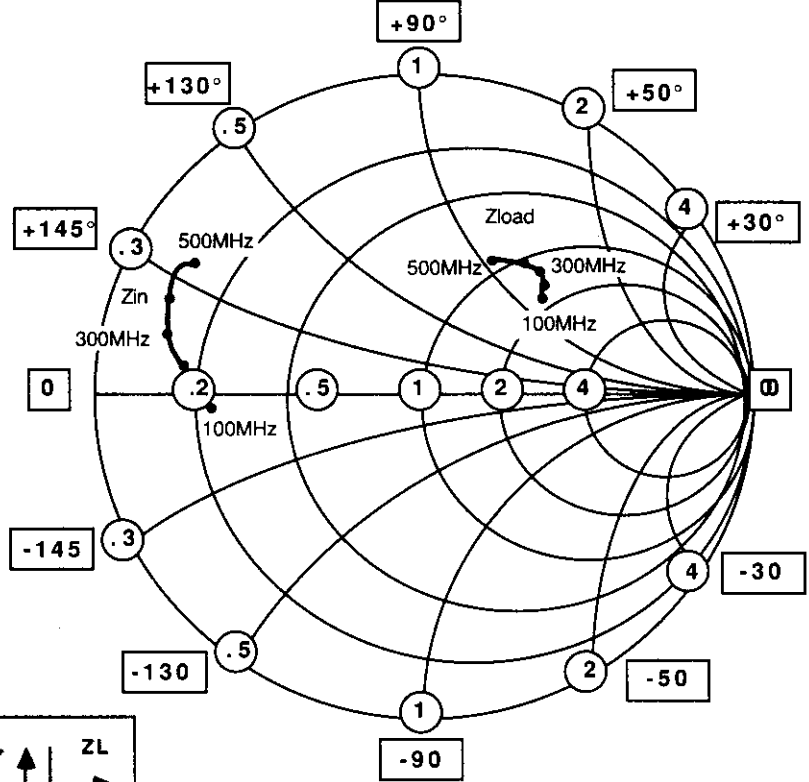
**POWER OUTPUT vs POWER INPUT**

Vcc= 28V f=400MHz



# SMITH CHART UMIL10

NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES



NORMALIZED TO A 10 OHM SYSTEM

FREQUENCY MHz	R	Z <sub>in</sub> JX	FREQUENCY MHz	R	Z <sub>load</sub> 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