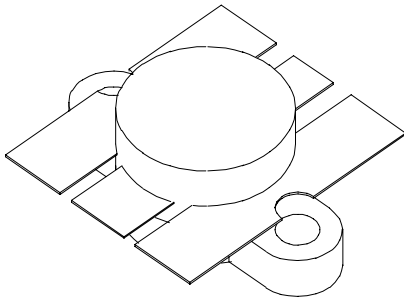


**UMIL 100**  
100 Watts, 28 Volts, Class AB  
Defcom 225 - 400 MHz

<p><b>GENERAL DESCRIPTION</b></p> <p>The UMIL100 is a double input matched COMMON EMITTER broadband transistor specifically intended for use in the 225-400 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>55HV, Style 2</b></p> 
<p><b>ABSOLUTE MAXIMUM RATINGS</b></p> <p>Maximum Power Dissipation @ 25°C                      250 Watts</p> <p><b>Maximum Voltage and Current</b></p> <p>BVces    Collector to Emitter Voltage                      60 Volts              BVebo    Emitter to Base Voltage                              4.0 Volts              Ic        Collector Current    12.0 A</p> <p><b>Maximum Temperatures</b></p> <p>Storage Temperature    - 65 to +150°C              Operating Junction Temperature                              +150°C</p>	

**ELECTRICAL CHARACTERISTICS @ 25 °C**

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Output	F = 400 MHz	100			Watts
Pin	Power Input	Vcc = 28 Volts			19	Watts
Pg	Power Gain		7.2	8.5		dB
ηc	Efficiency			55		%
VSWR	Load Mismatch Tolerance				5:1	

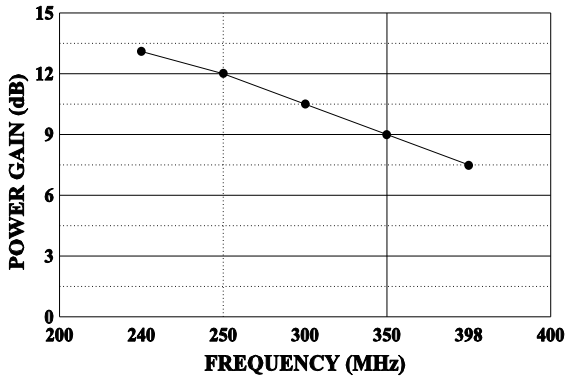
BVebo	Emitter to Base Breakdown	Ie = 5 mA	4.0			Volts
BVces	Collector to Emitter Breakdown	Ic = 100 mA	60			Volts
BVceo	Collector to Emitter Breakdown	Ie = 50 mA	31			Volts
BVcbo	Collector to Base Breakdown	Ic = 100 mA	60			Volts
Icbo	Collector to Base Current	Vc = 30 Volts			50	mA
Cob	Output Capacitance	Vcb = 28 V, F = 1 MHz		120		pF
hFE	DC - Current Gain	Vce = 5 V, Ic = 1 A	10			
θjc	Thermal Resistance				0.7	°C/W

Issue October 1998: Correction on Case from HU to HV

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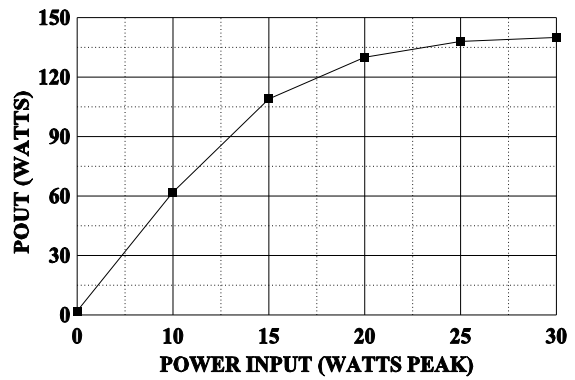
**POWER GAIN VS FREQUENCY**

Pout = 100 Watt, Vcc = 28 Volts

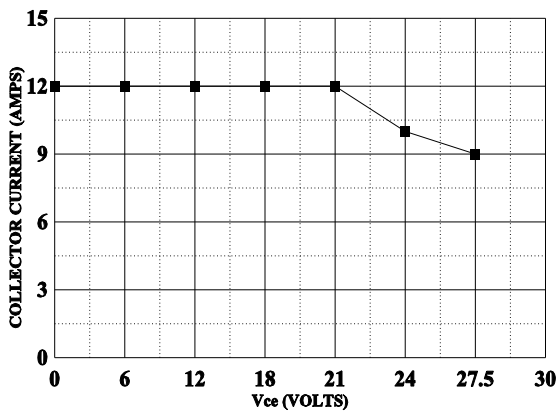


**POWER OUTPUT vs POWER INPUT**

Vcc = 28V f = 400MHz

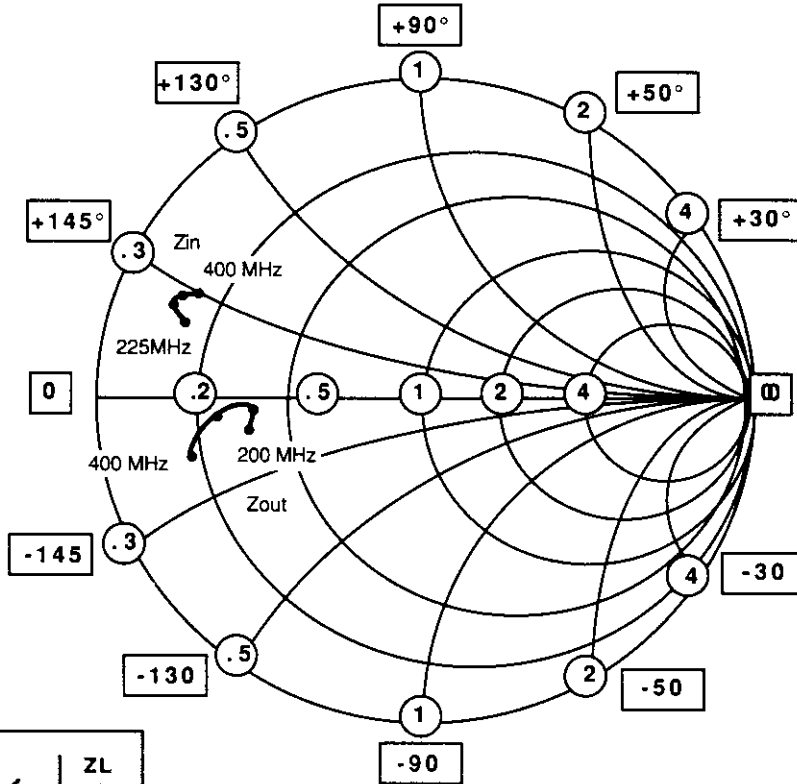


**DC SAFE OPERATING AREA**

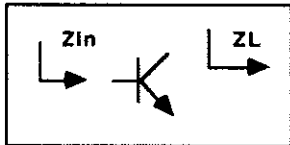


# SMITH CHART UMIL100

NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES



NORMALIZED TO A 10 OHM SYSTEM



FREQUENCY MHz	R	Zin JX	FREQUENCY MHz	R	Zload JX
225	1.7	+ j2.2	225	3.5	- j1.5
300	1.2	+ j2.4	300	3.8	- j0.9
350	1.3	+ j2.6	350	2.7	- j1.0
400	1.5	+ j2.8	400	1.8	- j2.0