

UMIL 100

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

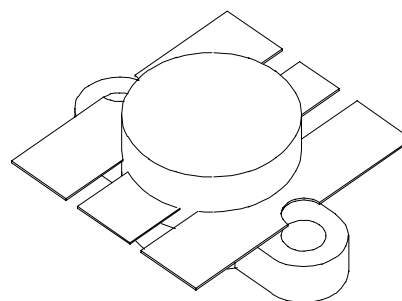
GENERAL DESCRIPTION

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.

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C	250 Watts
Maximum Voltage and Current	
BVces Collector to Emitter Voltage	60 Volts
BVebo Emitter to Base Voltage	4.0 Volts
Ic Collector Current	12.0 A
Maximum Temperatures	
Storage Temperature	- 65 to +150°C
Operating Junction Temperature	+150°C

CASE OUTLINE 55HV, Style 2



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
η_c	Efficiency			55		%
VSWR	Load Mismatch Tolerance				5:1	

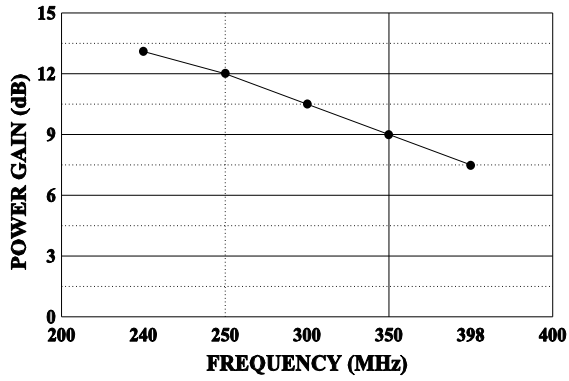
BVebo	Emitter to Base Breakdown	Ie = 5 mA	4.0			Volts
BVces	Collector to Emitter Breakdown	Ic = 100 mA	60			Volts
BVceo	Collector to Emitter Breakdown	Ie = 50 mA	31			Volts
BVcbo	Collector to Base Breakdown	Ic = 100 mA	60			Volts
Icbo	Collector to Base Current	Vc = 30 Volts			50	mA
Cob	Output Capacitance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

Issue October 1998: Correction on Case from HU to HV

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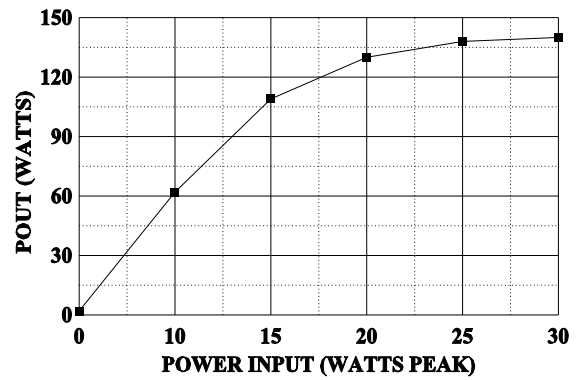
POWER GAIN VS FREQUENCY

Pout = 100 Watt, Vcc = 28 Volts

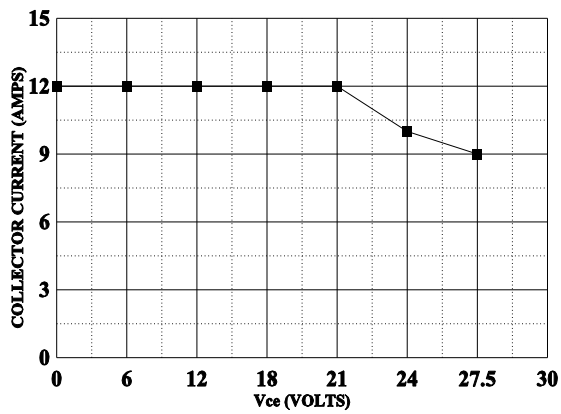


POWER OUTPUT vs POWER INPUT

Vcc = 28V f = 400MHz

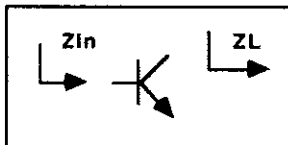
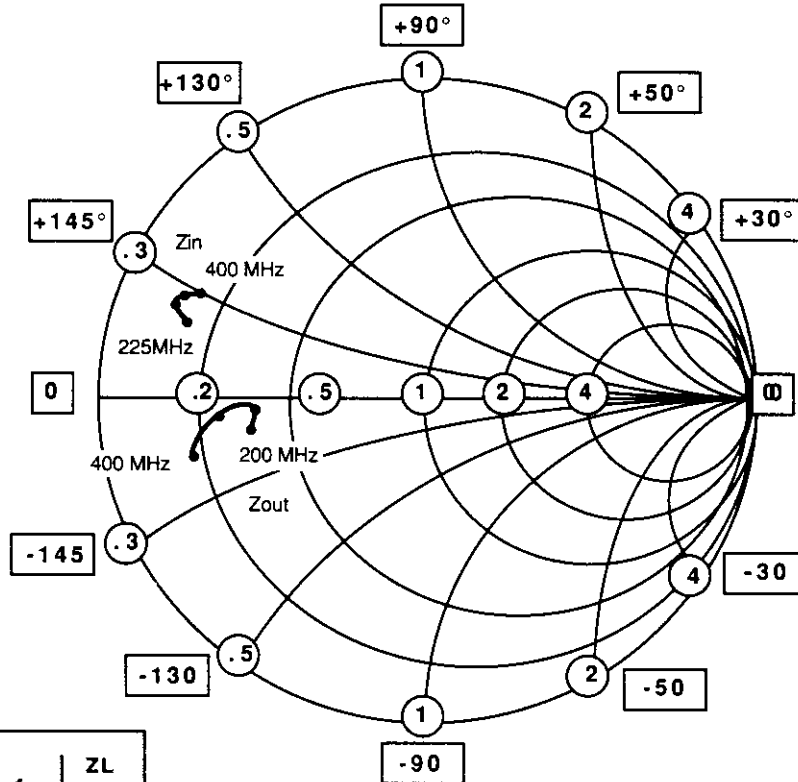


DC SAFE OPERATING AREA



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