UMIL 25

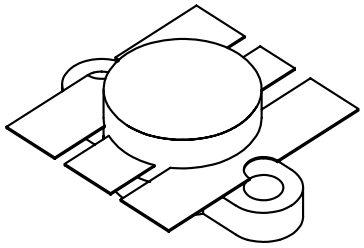
25 Watts, 28 Volts, Class AB
Defcom 225 - 400 MHz

GENERAL DESCRIPTION

The UMIL 25 is an 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.

CASE OUTLINE

55HV, Style 2



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C 70 Watts

Maximum Voltage and Current

BVces	Collector to Emitter Voltage	60 Volts
BVebo	Emitter to Base Voltage	4.0 Volts
Ic	Collector Current	3 A

Maximum Temperatures

Storage Temperature	- 65 to +150°C
Operating Junction Temperature	+200°C

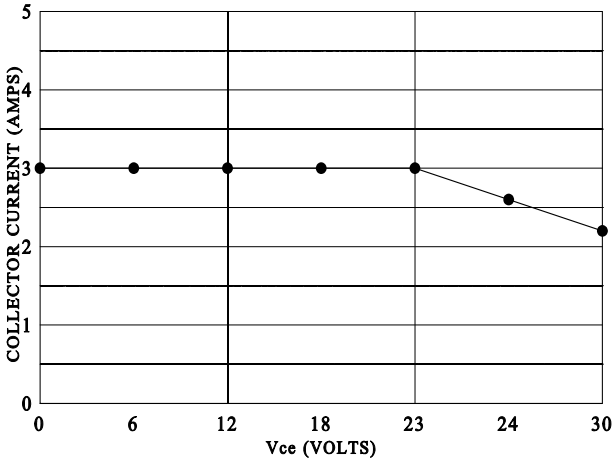
ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P_{OUT}	Power Output	F = 400 MHz	25			W
P_{IN}	Power Input	V_{cc} = 28 Volts			3.2	W
P_G	Power Gain		8.9	10		dB
η_c	Collector Efficiency			50		%
VSWR	Load Mismatch Tolerance[1]				5:1	

BV_{EBO}	Emitter to Base Breakdown	Ie = 5 mA	4.0			Volts
BV_{CES}	Collector to Emitter Breakdown	Ic = 50 mA	65			Volts
BV_{CEO}	Collector to Emitter Breakdown	Ie = 50 mA	33			Volts
h_{FE}	DC - Current Gain	Ic = 0.5 A, Vce = 5 V	10			
θjc[1]	Thermal Resistance				2.5	°C/W
Cob	Output Capacitance	Vcb = 28 V, F = 1 MHz		22	27	pF
I_{EBO}	Emitter to Base Leakage	Veb = 2 V			2	mA
I_{CBO}	Collector to Base Leakage	Vcb = 20 V			2	mA

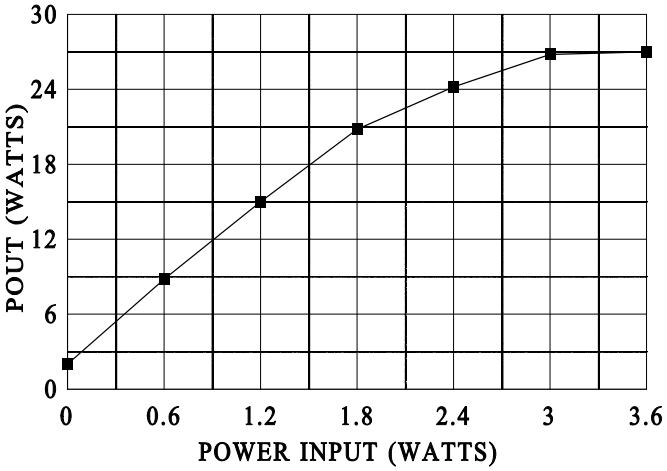
Rev. A – Apr 2004

DC SAFE OPERATING AREA

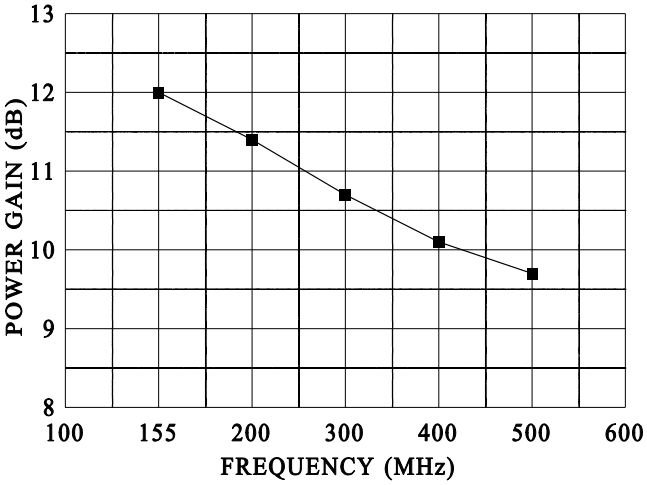


POWER OUTPUT vs POWER INPUT

Vcc= 28V f=400MHz

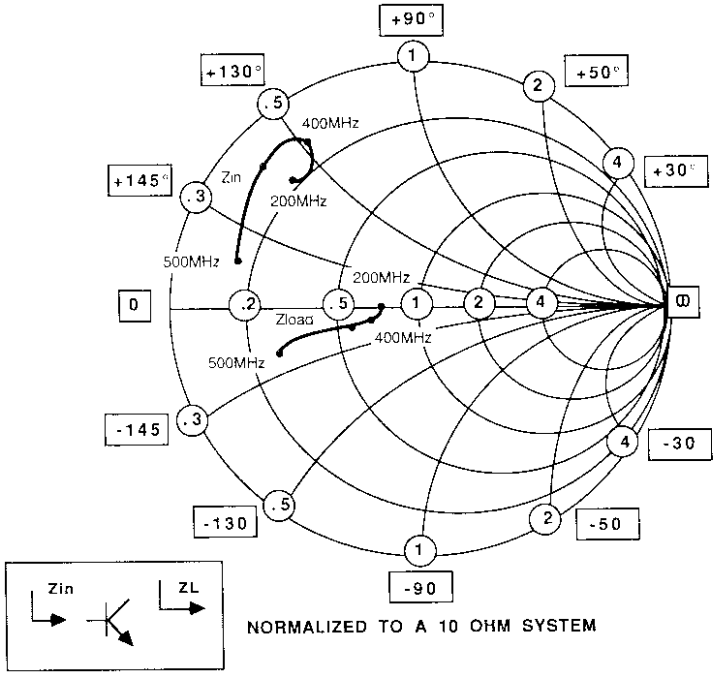


POWER GAIN VS FREQUENCY



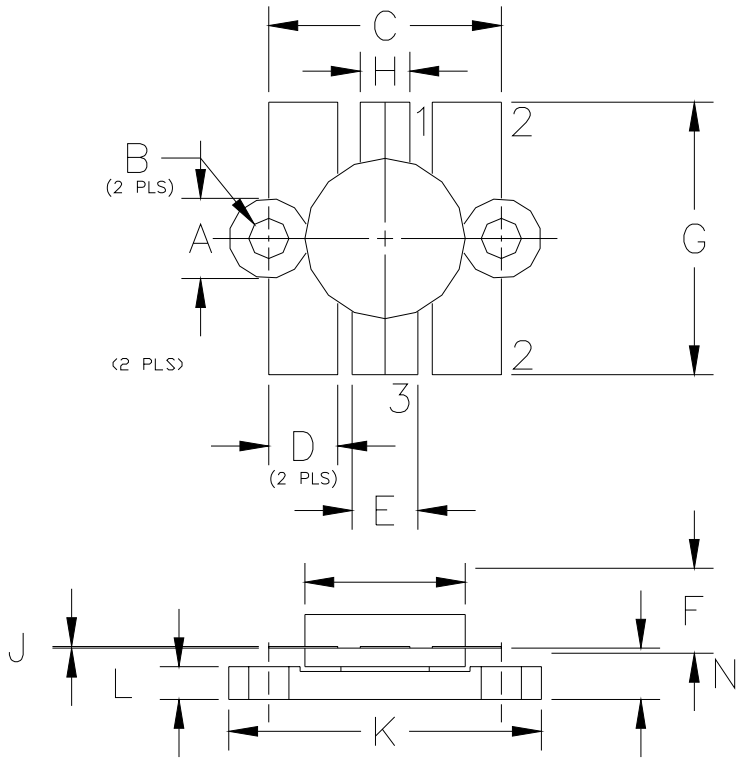
SMITH CHART
UMIL25

NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES



NORMALIZED TO A 10 OHM SYSTEM

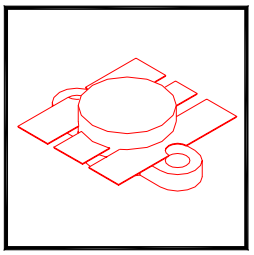
FREQUENCY MHz	Zin R	Zin JX	FREQUENCY MHz	Zload R	Zload JX
200	1.6	+1.5	200	7.6	0.0
300	1.1	+4.0	300	7.5	-1.0
400	1.7	+5.1	400	6.0	-1.3
500	1.7	+4.2	500	3.0	-2.0



DIM	MILLIMETER	±TOL	INCHES	±TOL
A	6.35 DIA	.13	.250 DIA	.005
B	3.17 DIA	.13	.325 DIA	.005
C	18.41	.13	.725	.005
D	5.46	.13	.215	.005
E	5.21	.13	.205	.005
F	6.73	REF	.265	REF
G	21.59	.38	.850	.015
H	3.94	.13	.155	.005
I	12.70 DIA	.13	.500 DIA	.005
J	0.13	.02	.005	.001
K	24.76	.13	.975	.005
L	2.59	.13	.102	.005
M	4.06	.25	.160	.010

STYLE 1:
PIN 1 = COLLECTOR
2 = BASE
3 = EMITTER

STYLE 2:
PIN 1 = COLLECTOR
2 = EMITTER
3 = BASE



GHz TECHNOLOGY
RF – MICROWAVE SILICON POWER TRANSISTORS

DWG NO.
55HV