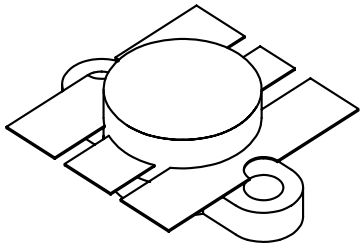


<p><b>GENERAL DESCRIPTION</b> The UMIL 25 is an input matched COMMON EMITTER broadband transistor specifically intended for use in the 225-400 MHz frequency band. It may be operated in Class AB or C. Gold metallization and silicon diffused resistors ensure ruggedness and high reliability.</p>	<p><b>CASE OUTLINE</b> <b>55HV, Style 2</b></p> 													
<p><b>ABSOLUTE MAXIMUM RATINGS</b> Maximum Power Dissipation @ 25°C <span style="float: right;">70 Watts</span></p> <p><b>Maximum Voltage and Current</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">BVces</td> <td style="width: 45%;">Collector to Emitter Voltage</td> <td style="width: 40%; text-align: right;">60 Volts</td> </tr> <tr> <td>BVebo</td> <td>Emitter to Base Voltage</td> <td style="text-align: right;">4.0 Volts</td> </tr> <tr> <td>Ic</td> <td>Collector Current</td> <td style="text-align: right;">3 A</td> </tr> </table> <p><b>Maximum Temperatures</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 40%;">Storage Temperature</td> <td style="text-align: right;">- 65 to +150°C</td> </tr> <tr> <td>Operating Junction Temperature</td> <td style="text-align: right;">+200°C</td> </tr> </table>	BVces	Collector to Emitter Voltage	60 Volts	BVebo	Emitter to Base Voltage	4.0 Volts	Ic	Collector Current	3 A	Storage Temperature	- 65 to +150°C	Operating Junction Temperature	+200°C	
BVces	Collector to Emitter Voltage	60 Volts												
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**ELECTRICAL CHARACTERISTICS @ 25 °C**

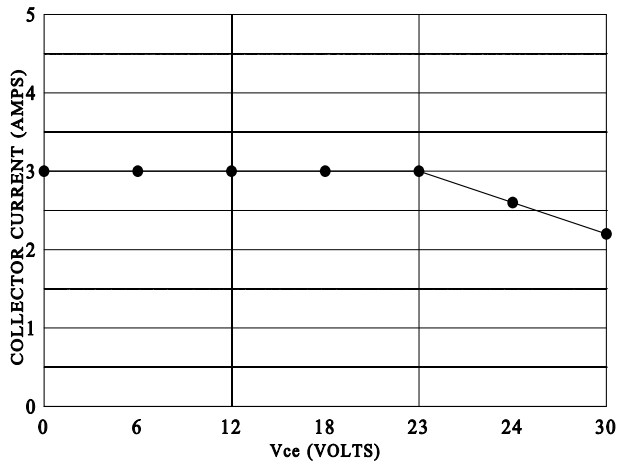
SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P <sub>OUT</sub>	Power Output	F = 400 MHz	25			W
P <sub>IN</sub>	Power Input	V <sub>cc</sub> = 28 Volts			3.2	W
P <sub>G</sub>	Power Gain		8.9	10		dB
η <sub>c</sub>	Collector Efficiency			50		%
VSWR	Load Mismatch Tolerance <sup>1</sup>				5:1	

BV <sub>EBO</sub>	Emitter to Base Breakdown	I <sub>e</sub> = 5 mA	4.0			Volts
BV <sub>CES</sub>	Collector to Emitter Breakdown	I <sub>c</sub> = 50 mA	65			Volts
BV <sub>CEO</sub>	Collector to Emitter Breakdown	I <sub>e</sub> = 50 mA	33			Volts
h <sub>FE</sub>	DC - Current Gain	I <sub>c</sub> = 0.5 A, V <sub>ce</sub> = 5 V	10			
θ <sub>jc</sub> <sup>1</sup>	Thermal Resistance				2.5	°C/W
C <sub>ob</sub>	Output Capacitance	V <sub>cb</sub> = 28 V, F = 1 MHz		22	27	pF
I <sub>EBO</sub>	Emitter to Base Leakage	V <sub>eb</sub> = 2 V			2	mA
I <sub>CBO</sub>	Collector to Base Leakage	V <sub>cb</sub> = 20 V			2	mA

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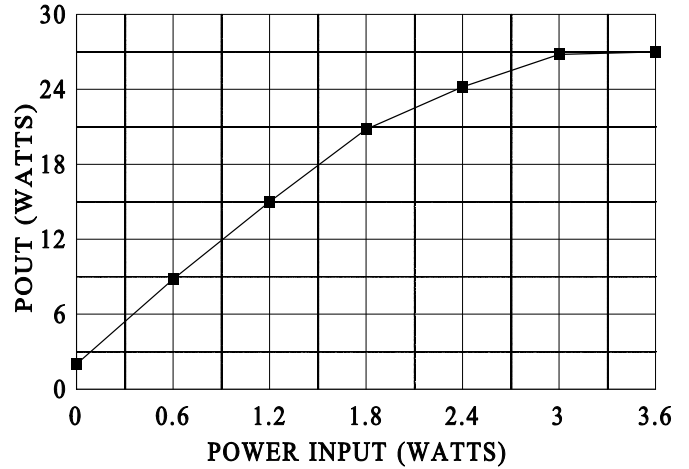
# UMIL25

### DC SAFE OPERATING AREA

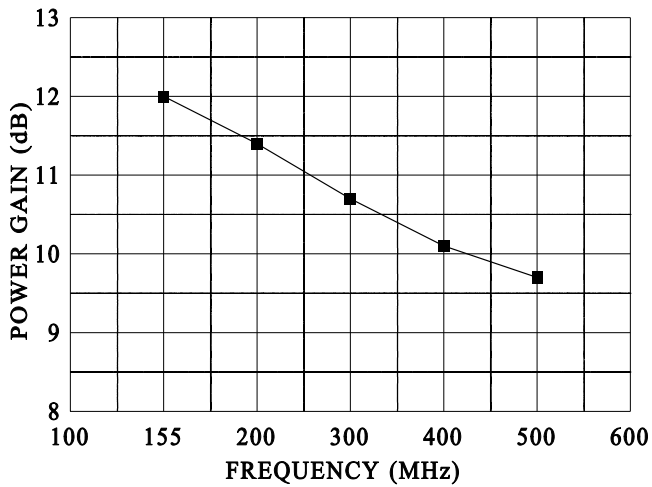


### POWER OUTPUT vs POWER INPUT

Vcc= 28V f=400MHz

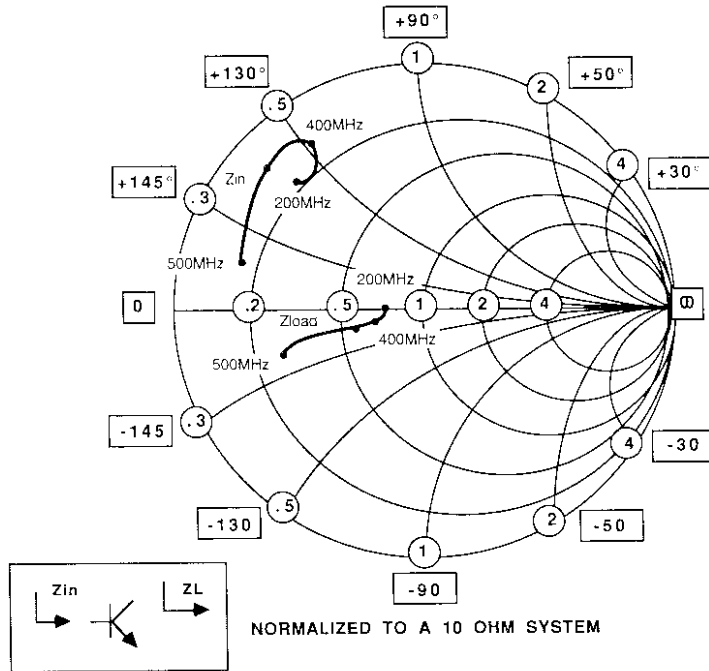


### POWER GAIN VS FREQUENCY

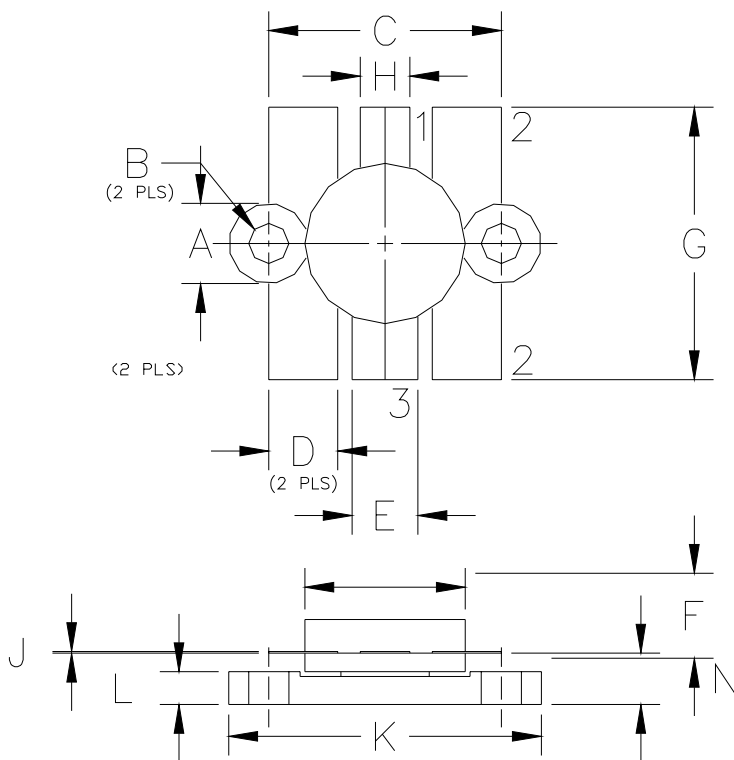


**SMITH CHART  
UMIL25**

NORMALIZED IMPEDANCE AND ADMITTANCE COORDINATES



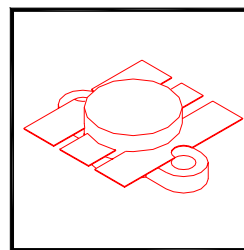
FREQUENCY MHz	R	Z <sub>in</sub>	JX	FREQUENCY MHz	R	Z <sub>load</sub>	JX
200	1.6		+1.5	200	7.6		0.0
300	1.1		+4.0	300	7.5		-1.0
400	1.7		+5.1	400	6.0		-1.3
500	1.7		+4.2	500	3.0		-2.0



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