GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

UMIL10P

10 Watts, 28 Volts, Class AB
UHF Communications 100 – 400 MHz

ADVANCED RELEASE

GENERAL DESCRIPTION

The UMIL10P 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.

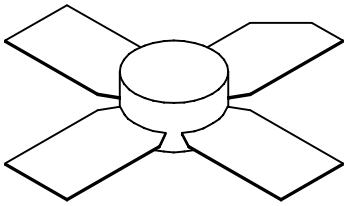
ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation
Device Dissipation @25°C 28 W

Maximum Voltage and Current
Collector to Base Voltage (BV_{ces}) 55 V
Emitter to Base Voltage (BV_{ebo}) 4.0 V
Collector Current (I_c) 1.5 A

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

CASE OUTLINE
55FU Style 2



Backside Surface is Gold Metalized

ELECTRICAL CHARACTERISTICS @ 25°C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P_{out}	Power Out	F = 400 MHz	10			W
P_{in}	Power Input	V_{CC} = 28 Volts, Pout = 10W			1.0	W
P_g	Power Gain		10.0			dB
η_c	Collector Efficiency		45	50		%
VSWR	Load Mismatch Tolerance				10:1	ψ

FUNCTIONAL CHARACTERISTICS @ 25°C

BV_{ebo}	Emitter to Base Breakdown	Ie = 5 mA	4.0			V
BV_{ces}	Collector to Emitter Breakdown	Ic = 50 mA	55			V
BV_{ceo}	Collector to Emitter Breakdown	Ie = 50 mA	30			V
Cob	Output Capacitance	Vcb = 28V, F = 1 MHz		11.5		PF
h_{FE}	DC – Current Gain	Vce = 5V, Ic = 200mA	10		150	β
θjc	Thermal Resistance				6.3	°C/W

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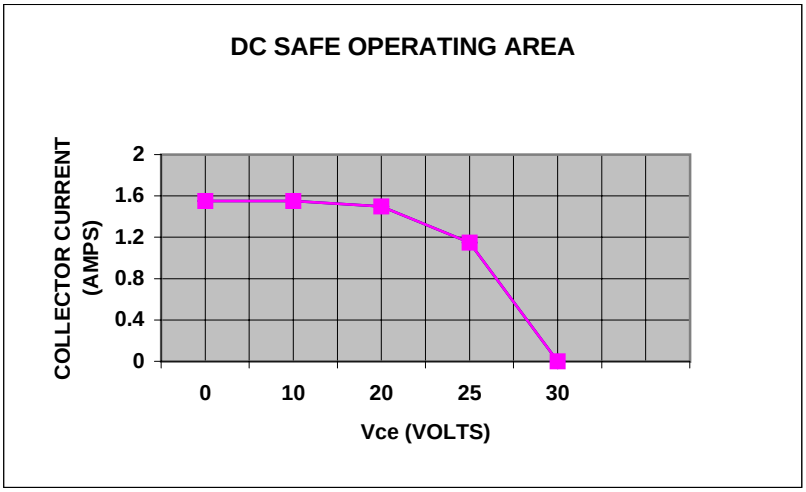
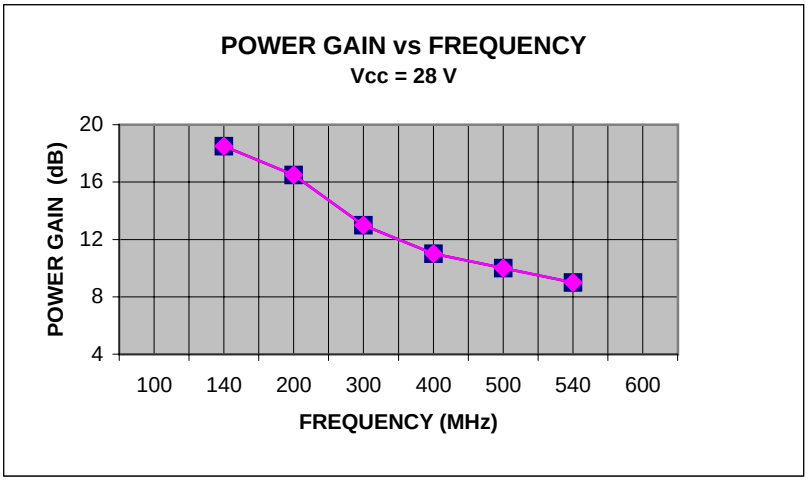
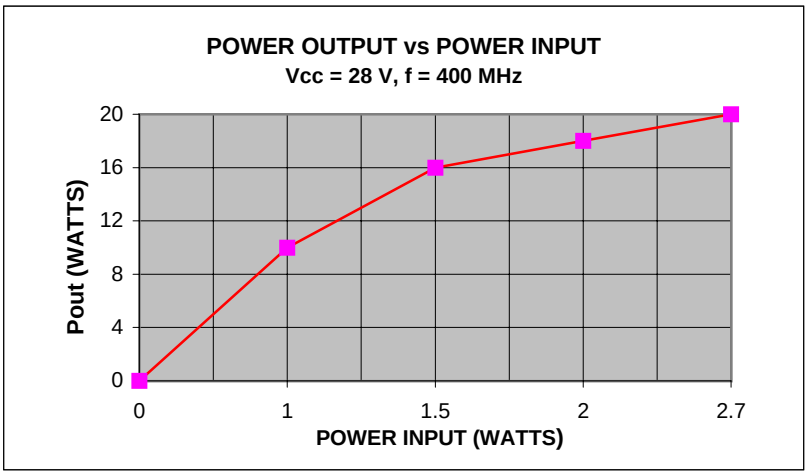
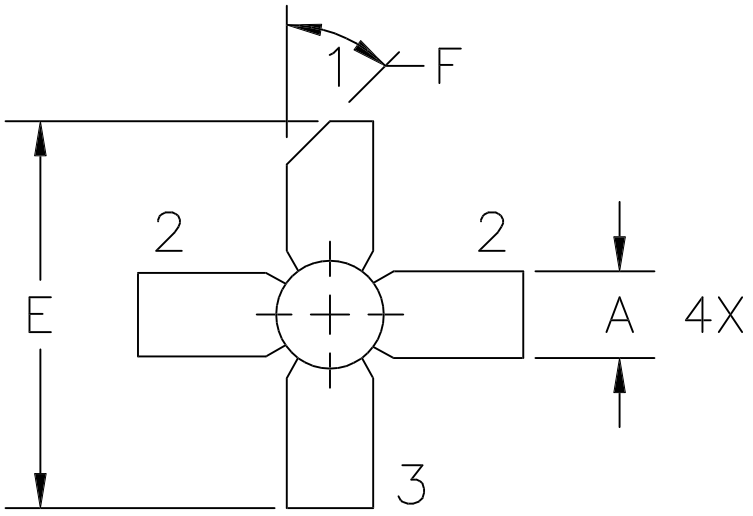
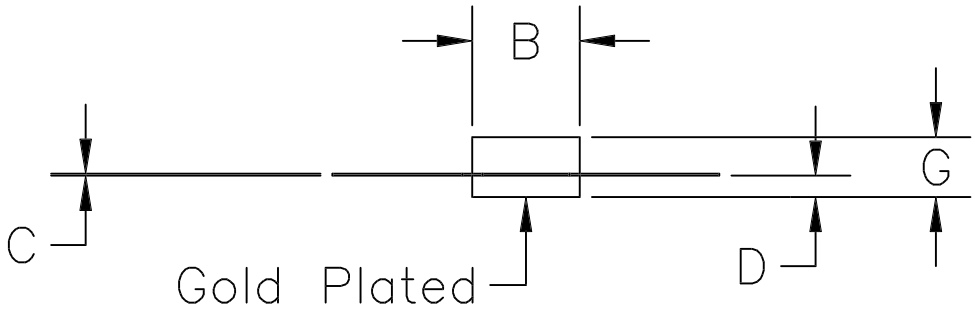
UMIL10P


DC SAFE OPERATING AREA
COLLECTOR CURRENT (AMPS)
2
1.6
1.2
0.8
0.4
0
0
10
20
25
30
Vce (VOLTS)


POWER GAIN vs FREQUENCY
Vcc = 28 V
POWER GAIN (dB)
20
16
12
8
4
100
140
200
300
400
500
540
600
FREQUENCY (MHz)


POWER OUTPUT vs POWER INPUT
Vcc = 28 V, f = 400 MHz
Pout (WATTS)
20
16
12
8
4
0
0
1
1.5
2
2.7
POWER INPUT (WATTS)

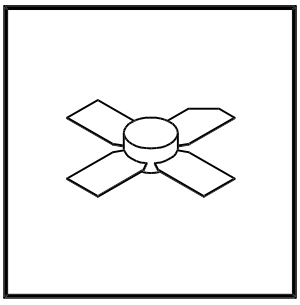




DIM	MILLIMETER	TOL	INCHES	TOL
A	5.71	.13	.225	.005
B	7.11 DIA	.13	.280 DIA	.005
C	0.13	.02	.005	.001
D	1.40	.13	.055	.005
E	25.53	.64	1.005	.025
F	45°	5°	45°	5°
G	3.94	REF	.155	REF

STYLE 1:
PIN1 = COLLECTOR
2 = BASE (2X)
3 = EMITTER

STYLE 2:
PIN1 = COLLECTOR
2 = EMITTER (2X)
3 = BASE



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DWG NO.
55FU