

Radar Pulsed Power Module

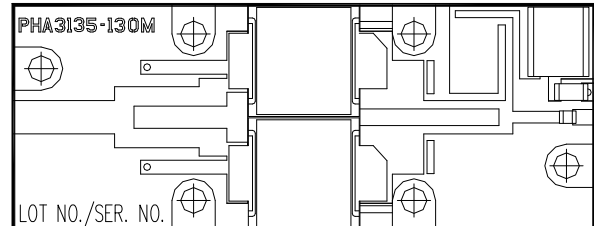
115, 130, 145 W, 3.1 - 3.5 GHz, 100 ms Pulse, 10% Duty

Rev. V1

Features

- NPN silicon bipolar transistor
- Input and output matched to 50 W
- Duroid circuit board
- Easily combined for high power transmitters
- Plated copper flange

Outline Drawing



Electrical Specifications: $T_A = 25 \pm 5^\circ\text{C}$, $V_{CC} = 36\text{ V}$, $P_{IN} = 21\text{ W}$

Symbol	Parameter	Frequency	Min	Max	Units
$R_{TH(JC)}$	Thermal Resistance	3.1, 3.3, 3.5 GHz	-	0.24	$^\circ\text{C/W}$
P_{OUT}	Output Power	3.1 GHz 3.3 GHz 3.5 GHz	145 130 115	—	W
G_P	Power Gain	3.1 GHz 3.3 GHz 3.5 GHz	8.4 7.9 7.4	—	dB
h_C	Collector Efficiency	3.1, 3.3, 3.5 GHz	35	—	%
R_L	Input Return Loss	3.1, 3.3, 3.5 GHz	—	-6	dB
Droop	Pulse Droop	3.1, 3.3, 3.5 GHz	—	0.5	dB
VSWR-T	Load Mismatch Tolerance	3.1, 3.3, 3.5 GHz	—	3:1	—
VSWR-S	Load Mismatch Stability	3.1, 3.3, 3.5 GHz	—	2:1	—

Typical RF Performance

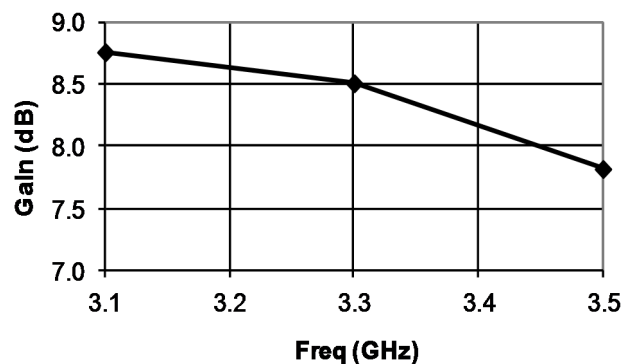
Freq. (GHz)	P_{IN} (W)	P_{OUT} (W)	Gain (dB)	ΔGain (dB)	I_C (A)	Eff (%)	R_L (dB)	VSWR-S (2:1)	VSWR-T (3:1)
3.1	21	158	8.76	—	10.3	44.6	-12.3	S	P
3.3	21	149	8.51	—	9.7	42.7	-11.0	S	P
3.5	21	127	7.82	0.96	8.7	40.0	-14.7	S	P

Absolute Maximum Ratings @ 25°C

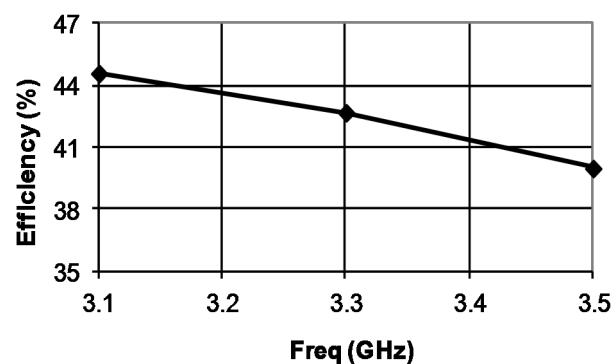
Symbol	Parameter	Rating
I_C	Collector Current (Peak)	23 A
P_{TOT}	Power Dissipation	730 W
T_{OP}	Operating Temperature	-30°C to +100°C
T_{STG}	Storage Temperature	-40°C to +125°C
T_J	Junction Temperature	200°C

Typical Performance Curves

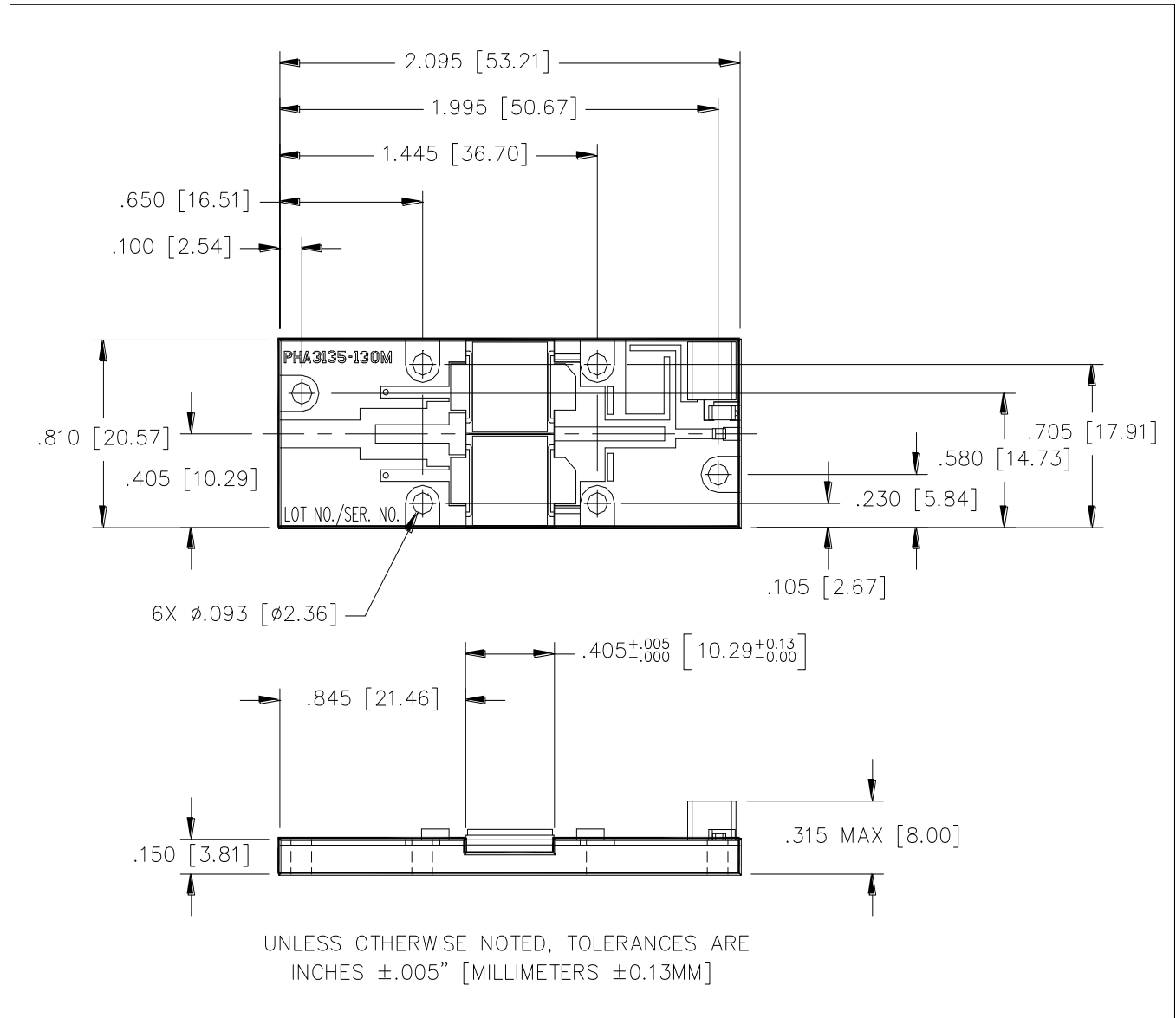
Gain vs. Frequency



Collector Efficiency vs. Frequency



Power Module Dimensions



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Rev. V1

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