PH2729-130M Datasheet

DiGi Electronics Part Number	PH2729-130M-DG
Manufacturer	MACOM Technology Solutions
Manufacturer Product Number	PH2729-130M
Description	RF TRANS NPN 63V
Detailed Description	RF Transistor NPN 63V 12.5A 130W Chassis Mount

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Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
PH2729-130M	MACOM Technology Solutions
Series:	Product Status:
-	Active
Transistor Type:	Voltage - Collector Emitter Breakdown (Max):
NPN	63V
Frequency - Transition:	Noise Figure (dB Typ @ f):
-	-
Gain:	Power - Max:
9.73dB ~ 8.85dB	130W
DC Current Gain (hFE) (Min) @ Ic, Vce:	Current - Collector (Ic) (Max):
-	12.5A
Operating Temperature:	Mounting Type:
200°C (TJ)	Chassis Mount
Package / Case:	Supplier Device Package:
-	-
Base Product Number:	
PH2729	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
ECCN:	HTSUS:
EAR99	8541.29.0095

PH2729-130M

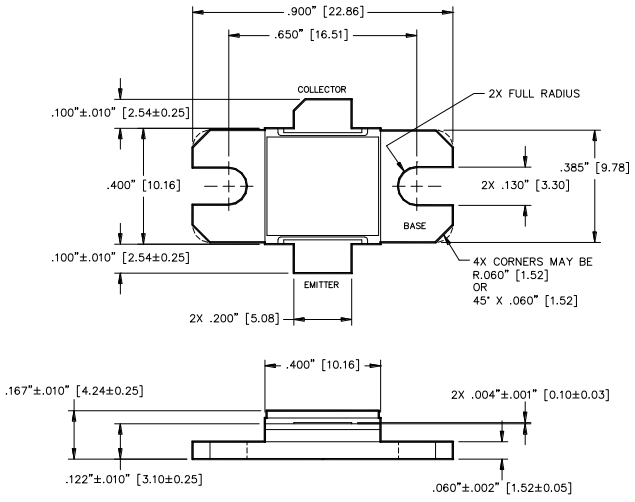
Radar Pulsed Power Transistor
130 W, 2.7—-2.9 GHz, 100 µs Pulse, 10% Duty

Rev. V1

Features

- NPN silicon microwave power transistors
- Common base configuration
- Broadband Class C operation
- High efficiency inter-digitized geometry
- Diffused emitter ballasting resistors
- Gold metallization system
- Internal input and output impedance matching
- Hermetic metal/ceramic package
- RoHS compliant

Outline Drawing



UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES ±.005" [MILLIMETERS ±0.13MM]

Absolute Maximum Ratings at 25°C

Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	V_{CES}	63	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current (Peak)	I_C	12.5	A
Power Dissipation @ +25°C	P_{TOT}	575	W
Storage Temperature	T_{STG}	-65 to +200	°C
Junction Temperature	T_J	200	°C

Electrical Specifications: T_C = 25 ± 5°C (Room Ambient)

Parameter	Test Conditions	Frequency	Symbol	Min	Max	Units
Collector-Emitter Breakdown Voltage	I_C = 40mA		BV_{CES}	63	-	V
Collector-Emitter Leakage Current	V_{CE} = 36V		I_{CES}	-	7.5	mA
Thermal Resistance	Vcc = 36V, Pout = 130W	F = 2.7, 2.8, 2.9 GHz	$R_{TH(JC)}$	-	0.3	°C/W
Input Power	Vcc = 36V, Pout = 130W	F = 2.7, 2.8, 2.9 GHz	P_{IN}	-	23	W
Power Gain	Vcc = 36V, Pout = 130W	F = 2.7, 2.8, 2.9 GHz	G_P	7.0	-	dB
Collector Efficiency	Vcc = 36V, Pout = 130W	F = 2.7, 2.8, 2.9 GHz	η_C	40	-	%
Input Return Loss	Vcc = 36V, Pout = 130W	F = 2.7, 2.8, 2.9 GHz	RL	-	-10	dB
Pulse Droop	Vcc = 36V, Pout = 130W	F = 2.7, 2.8, 2.9 GHz	Droop	-	0.5	dB
Load Mismatch Tolerance	Vcc = 36V, Pout = 130W	F = 2.7, 2.8, 2.9 GHz	VSWR-T	-	2:1	-
Load Mismatch Stability	Vcc = 36V, Pout = 130W	F = 2.7, 2.8, 2.9 GHz	VSWR-S	-	1.5:1	-

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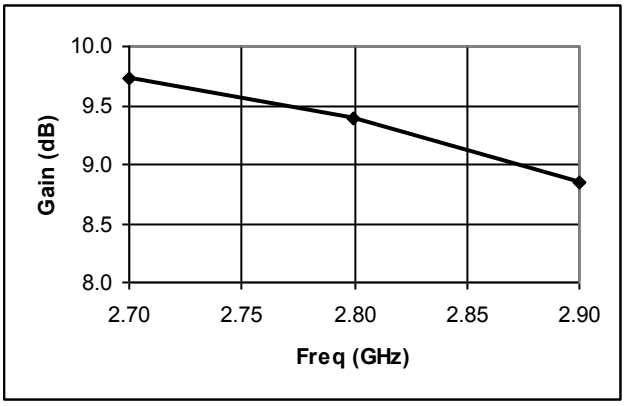
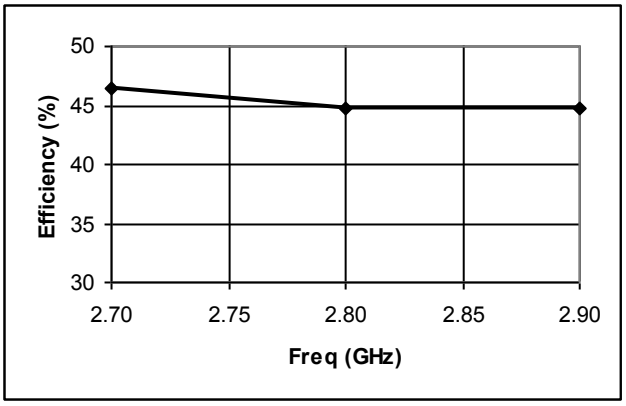
Typical RF Performance

Freq. (GHz)	Pin (W)	Pout (W)	Gain (dB)	Ic (A)	Eff (%)	RL (dB)	VSWR-S (1.5:1)	VSWR-T (2:1)
2.7	13.9	130	9.73	7.78	46.4	-11.4	S	P
2.8	15.0	130	9.38	8.07	44.8	-13.6	S	P
2.9	17.0	130	8.85	8.07	44.8	-13.8	S	P

Gain vs. Frequency

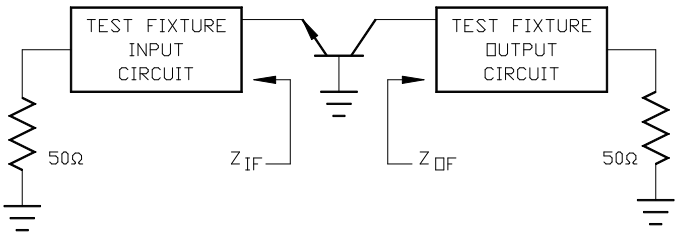


Collector Efficiency vs. Frequency



RF Test Fixture Impedance

F (GHz)	Z_{IF} (Ω)	Z_{OF} (Ω)
2.7	5.5 - j9.1	1.9 - j5.6
2.8	5.25 - j8.8	1.75 - j5.2
2.9	5.05 - j8.3	1.6 - j4.8



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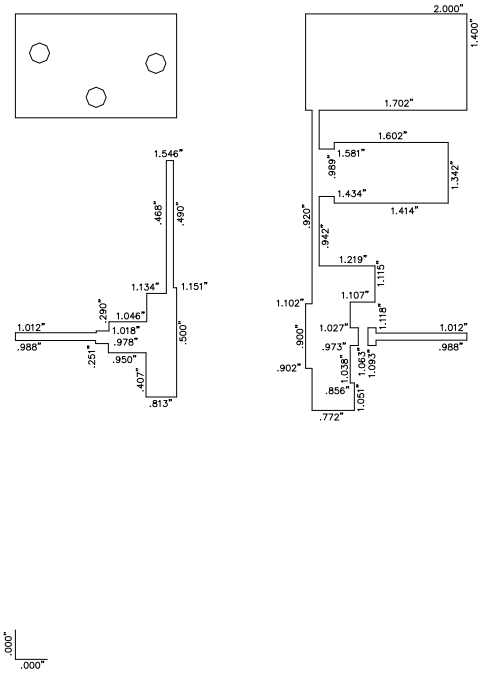
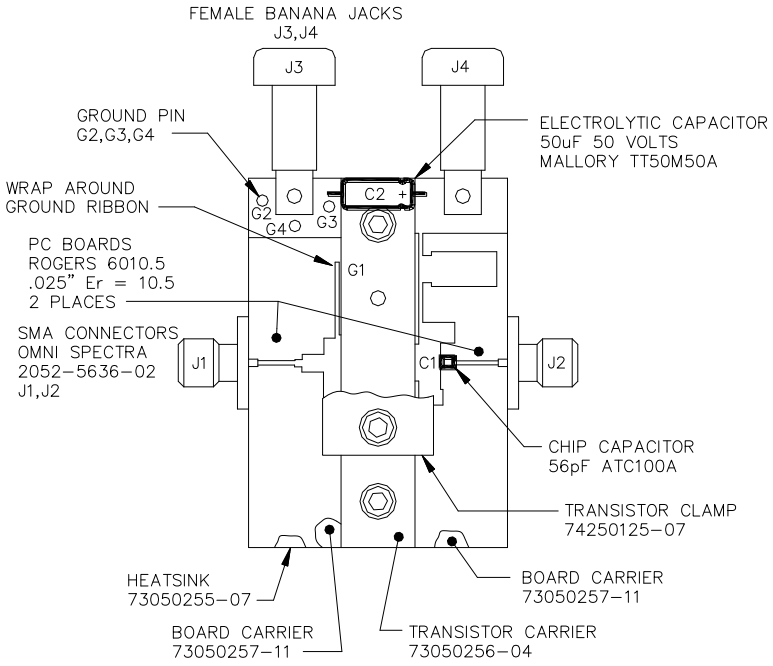
Test Fixture Circuit Dimensions



Test Fixture Assembly



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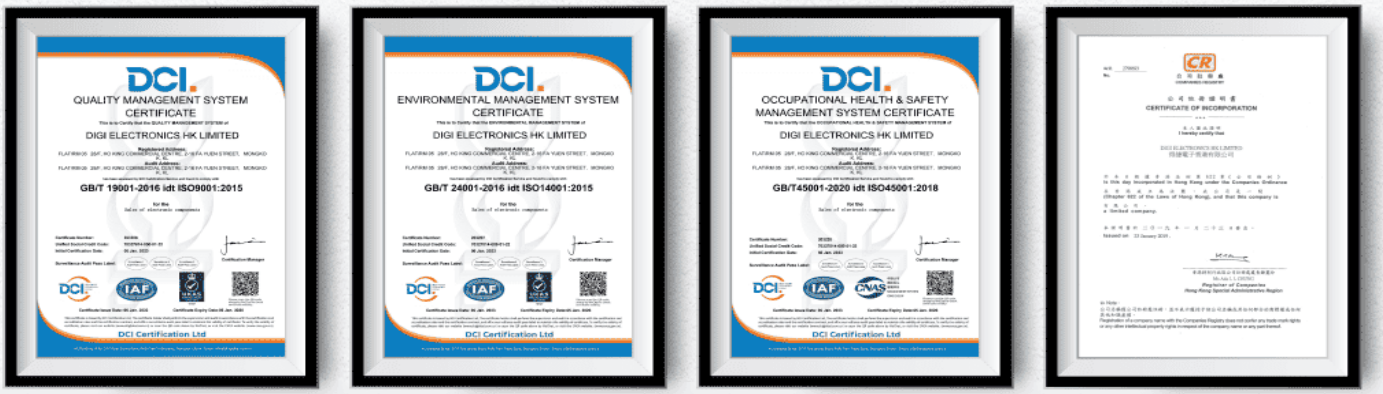

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