PH1819-15N



Wireless Bipolar Power Transistor 15W, 1.78-1.90 GHz

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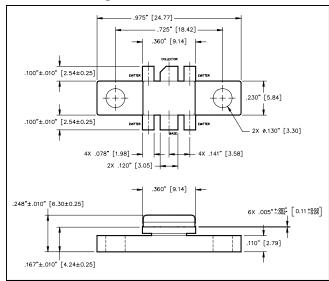
Features

- NPN silicon microwave power transistor
- Designed for linear amplifier applications
- Class AB: -34 dBc typ. 3rd IMD at 15 W PEP
- Class A: +48 dBm typ. 3rd order intercept point -
- Common emitter configuration
- Internal input impedance matching
- Diffused emitter ballasting
- Gold metallization system

ABSOLUTE MAXIMUM RATING AT 25°C

Parameter	Symbol	Rating	Units
Collector-Base Voltage	V _{CBO}	60	V
Collector-Emitter Voltage	V _{CES}	60	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current	I _C	2.0	Α
Power Dissipation	P _D	58	W
Junction Temperature	TJ	200	°C
Storage Temperature	T _{STG}	-55 to + 150	°C
Thermal Resistance	θ_{JC}	3.0	°C/W

Outline Drawing

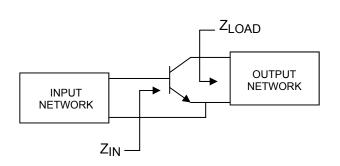


ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	BV _{CES}	60	-	V	I _C = 10mA
Collector-Emitter Leakage Current	I _{CES}	-	1.0	mA	V _{CE} = 24V
Collector-Emitter Breakdown Voltage	BV _{CEO}	24	-	V	I _C = 10mA
Emitter-Base Breakdown Voltage	BV_{EBO}	3.0	-	V	I _B = 10mA
DC Forward Current Gain	h _{FE}	15	120	-	$V_{CE} = 5V, I_{C} = 0.5 \text{ mA}$
Power Gain	G _P	7.0	-	dB	V_{CC} = 26V, I_{CQ} = 25 mA, P_{out} = 15 W PEP, F =1880 GHz, Δ F=100kHz
Collector Efficiency	ŋC	25	-	%	V_{CC} = 26V, I_{CQ} = 25 mA, P_{out} = 15 W PEP, F =1880 GHz, Δ F=100kHz
Input Return Loss	RL	10	-	dB	V_{CC} = 26V, I_{CQ} = 25 mA, P_{out} = 15 W PEP, F =1880 GHz, Δ F=100kHz
Load Mismatch Tolerance	VSWR	-	10:1	-	V_{CC} = 26V, I_{CQ} = 25 mA, P_{out} = 15 W PEP, F =1880 GHz, Δ F=100kHz
3rd Order IMD	IMD ₃	-	-30	dBc	V _{CC} = 26V, I _{CQ} = 25 mA, P _{out} = 15 W PEP, F =1880 GHz, Δ F=100kHz

TYPICAL OPTIMUM DEVICE IMPEDANCES

F (MHz)	Z _{IN} (Ω)	Z_{LOAD} (Ω)
1780	10.5+j12.3	1.6-j1.9
1850	11.4+j11	1.6-j2.2
1880	11.9+j6.2	1.6-j.2.5
1880	9.9+j3.6	1.6-j2.7
1900	8.8+j1.9	1.4-j2.7



PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

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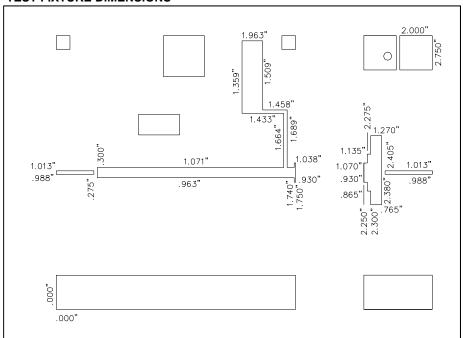
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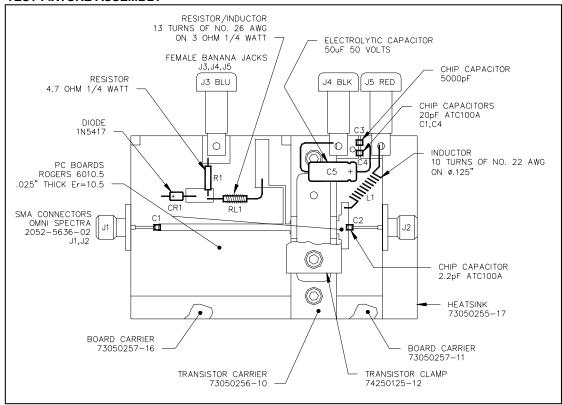
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TEST FIXTURE DIMENSIONS



TEST FIXTURE ASSEMBLY



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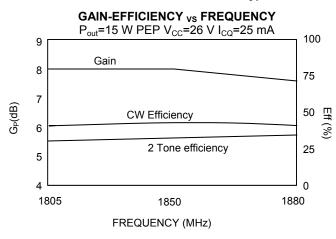
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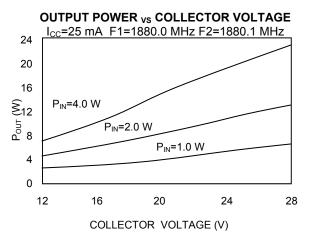


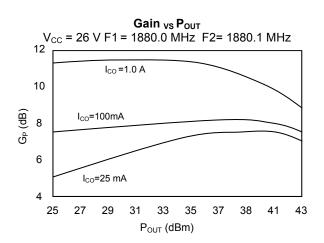
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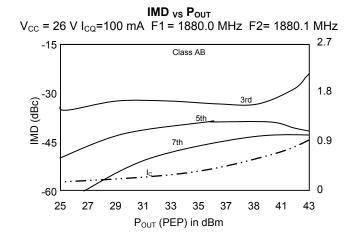
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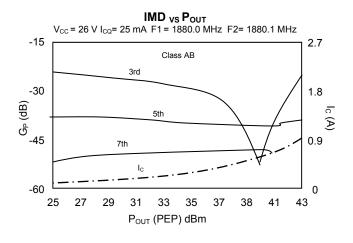
Typical Broadband Performance Curves

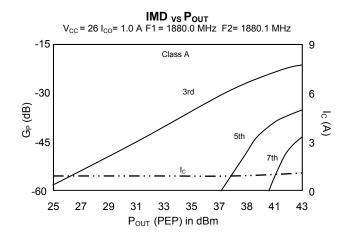












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