GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

1314AB60

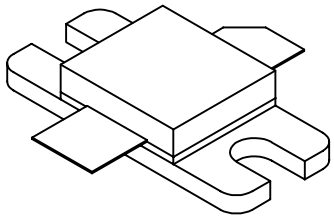
60 Watts PEP, 25 Volts, Class AB
Linear 1350 – 1400 MHz

ADVANCED RELEASE

GENERAL DESCRIPTION

The 1314AB60 is a COMMON EMITTER transistor capable of providing 60 Watts of Class AB, RF output power over the band 1350-1400 MHz. This transistor is specifically designed for **LINEAR POWER** amplifier applications. It includes Input prematching and utilizes Gold metalization and HIGH VALUE EMITTER ballalsting to provide high reliability and supreme ruggedness.

CASE OUTLINE
55MY Style 2
COMMON EMITTER



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C	**200 Watts**
Maximum Voltage and Current	
Collector to Emitter Voltage (BV_{CES})	55 V
Collector to Emitter Voltage (BV_{CEO})	27 V
Emitter to Base Voltage (BV_{EBO})	3.5 V
Collector Current (I_c)	20.0 Amps
Maximum Temperatures	
Storage Temperature	-65 to +150 °C
Operating Junction Temperature	+200 °C

ELECTRICAL CHARACTERISTICS @ 25°C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P_{out}	Power Out	F = 1350 – 1400 MHz	60			W
P_{in}	Power Input	V_{CC} = 25 Volts			12	W
P_g	Power Gain	Icq = 250 mAmps	7.0	8.0		dB
Rl	Return Loss	As above			-10	DB
η_c	Collector Efficiency		45	50		%
VSWR	Load Mismatch Tolerance	60 Watt PEP			2:1	

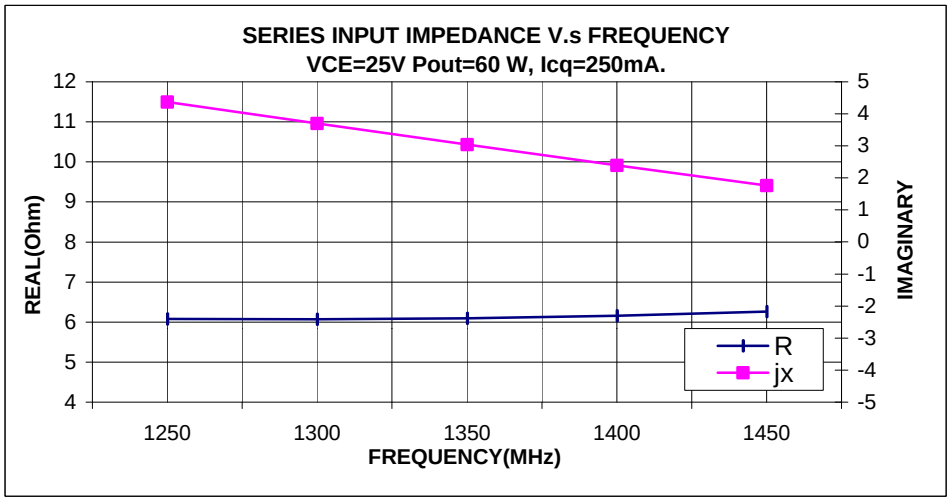
FUNCTIONAL CHARACTERISTICS @ 25°C

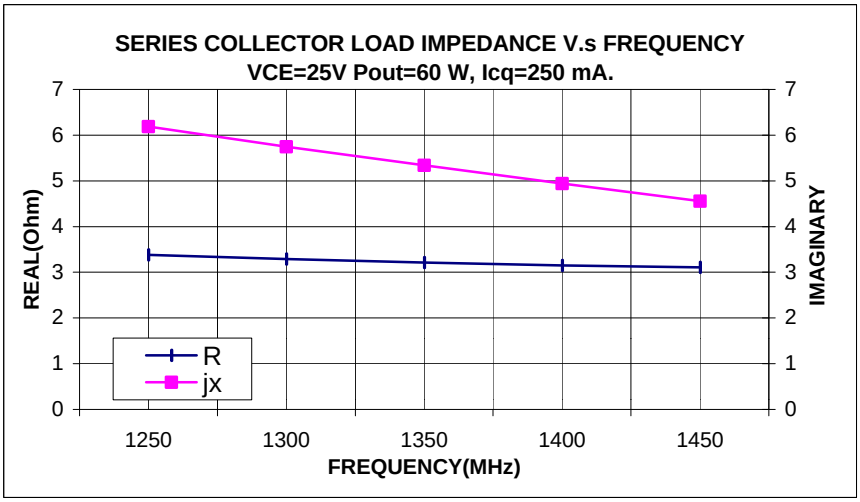
BV_{CES}	Collector to Emitter Breakdown	Ie = 100 mA	55			V
BV_{CEO}	Collector to Emitter Breakdown	Ic = 100 mA	27			V
BV_{EBO}	Emitter to Base Breakdown	Ie = 25mA	3.5			V
I_{CES}	Collector Leakage Current	Vce = 27 V			30	mA
h_{FE}	DC – Current Gain	Vce = 5V, Ic = 1.5A	20		100	
θjc^2	Thermal Resistance	Tc = 25°C			.87	°C/W

Initial Issue May 1999

1314AB60

	Zin		ZCL	
Frequency	R	jx	R	jx
1250	6.08	4.37	3.38	6.19
1300	6.07	3.7	3.29	5.75
1350	6.09	3.04	3.21	5.34
1400	6.16	2.39	3.15	4.94
1450	6.26	1.76	3.11	4.56





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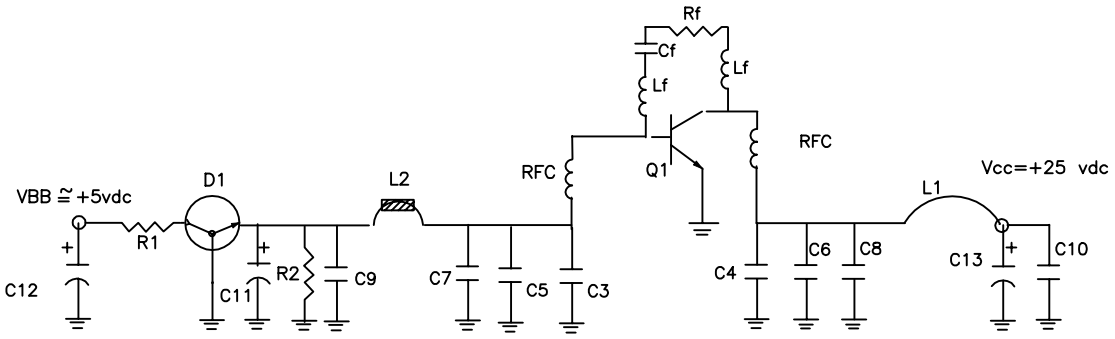
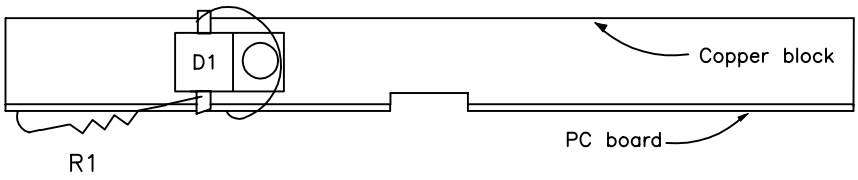
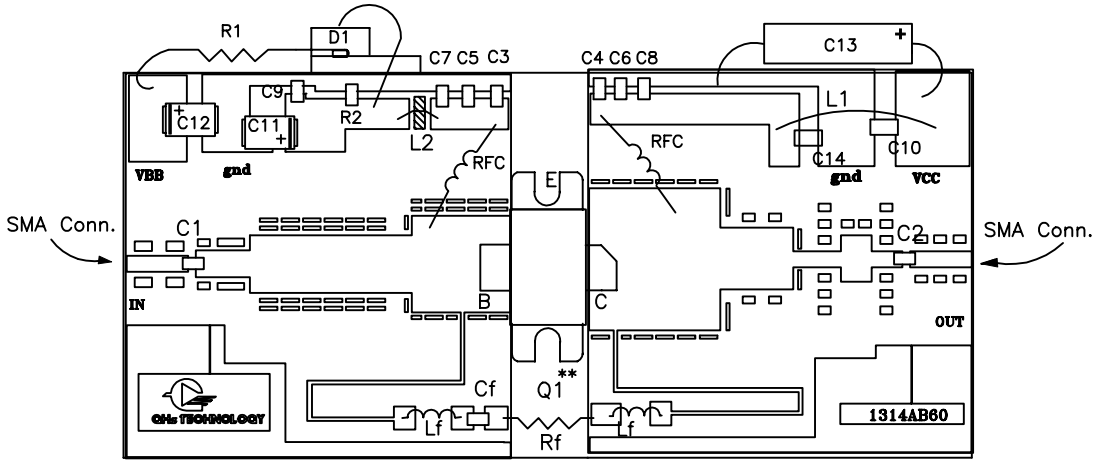
TEST FIXTURE

Assembly Drawing







BILL OF MATERIALS

D1=BYI–IT
R1=16 ohm 2w
R2=20 ohm 1/4 w x 2
Rf=82 ohm 1/2w
L1=0.75" #18 AWG wire
RFC=10 T, .1 dia, #22 AWG
Lf=10 T, .08 dia, #24 AWG
Cf=10k pF chip (ATC 200B)
L2=0.75"#18 AWG wire, ferrite

C1,C2=62 pF chip (ATC 100B)
C3,C4=10k pF chip (ATC 200B)
C5,C6=100 pF chip (ATC 100B)
C7,C8=10 pF chip (ATC 100B)
C9,C10=.1 uF chip
C11=220 uF 10V,Tantalum, SMD
C12=100uF 10V,Tantalum, SMD
C13=100 uF, 50V, Electrolytic
C14=. 01 uF chip

Copper Block
Circuit Board (1314AB60)
SMA Connectors (2 pls)

** Q1 Device under test (do not install)

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DWG NO.
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