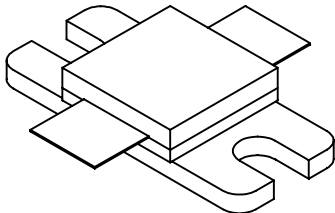


1920CD35

35 Watts, 25 Volts, Class AB
Personal 1930 – 1990 MHz

<p>GENERAL DESCRIPTION</p> <p>The 1920CD35 is a COMMON EMITTER transistor capable of providing 35 Watts of Class AB, RF output power over the band 1930-1990 MHz. This transistor is specifically designed for PERSONAL COMMUNICATIONS BASE STATION amplifier applications. It includes Input prematching and utilizes Gold metalization and HIGH VALUE EMITTER ballasting to provide high reliability and supreme ruggedness.</p>	<p>CASE OUTLINE 55AR Style 2 COMMON EMITTER</p> 
<p>ABSOLUTE MAXIMUM RATINGS</p> <p>Maximum Power Dissipation @ 25°C 120 Watts</p> <p>Maximum Voltage and Current</p> <p>Collector to Emitter Voltage (BV_{CES}) 55 V Collector to Emitter Voltage (LC_{CEO}) 27 V Collector to Emitter Voltage (BV_{CER}) 50 V Emitter to Base Voltage (BV_{EBO}) 3.5 V Collector Current (I_c) 14.0 Amps</p> <p>Maximum Temperatures</p> <p>Storage Temperature -65 to +200 °C Operating Junction Temperature +230 °C</p>	

ELECTRICAL CHARACTERISTICS @ 25°C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P_{out}	Power Out	F = 1990 MHz	35			W
P_{in}	Power Input	$V_{CC} = 25$ Volts			6.0	W
P_g	Power Gain	$I_{cq} = 250$ mAmps	8.0	8.5		dB
η_c	Collector Efficiency	As above		43		%
$VSWR_1$	Load Mismatch Tolerance				3:1	

FUNCTIONAL CHARACTERISTICS @ 25°C

BV_{CES}	Collector to Emitter Breakdown	$I_e = 50$ mA	55			V
LV_{CEO}	Collector to Emitter Breakdown	$I_c = 50$ mA	25			V
BV_{CER}	Collector to Emitter Breakdown	$I_c = 50$ mA, $R_e = 10$ Ohms	50			V
BV_{EBO}	Emitter to Base Breakdown	$I_e = 10$ mA	3.5			V
I_{CES}	Collector Leakage Current	$V_{ce} = 27$ V			10	mA
h_{FE}	DC – Current Gain	$V_{ce} = 5$ V, $I_c = 1$ A,	20		100	
C_{OB}	Output Capacitance	F = 1 MHz, $V_{cb} = 28$ V		28		PF
θ_{jc}^2	Thermal Resistance	$T_c = 25^\circ C$			1.6	°C/W

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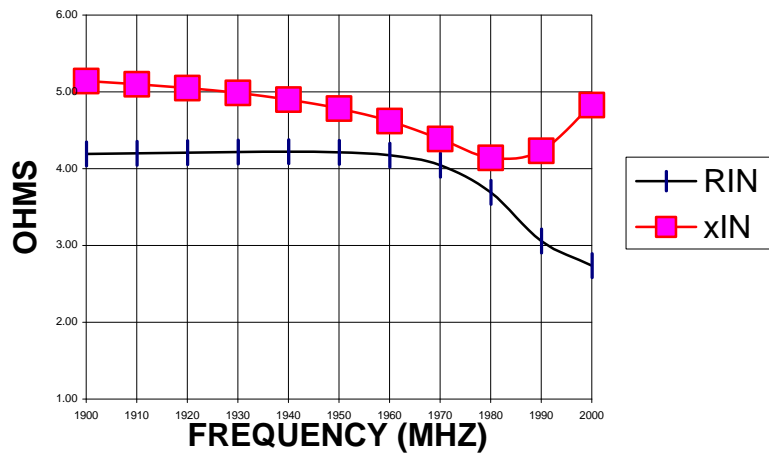
GHZ Technology Inc. 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 Tel. 408 / 986-8031 Fax 408 / 986-8120

1920CD35

Frequency	Zin		ZCL	
	R	jx	R	jx
1900	4.19	5.14	4.7	-8.28
1930	4.22	4.99	4.56	-8.24
1960	4.17	4.62	4.05	-7.69
1990	3.06	4.23	4.39	-7.38
2000	2.74	4.83	4.42	-7.34

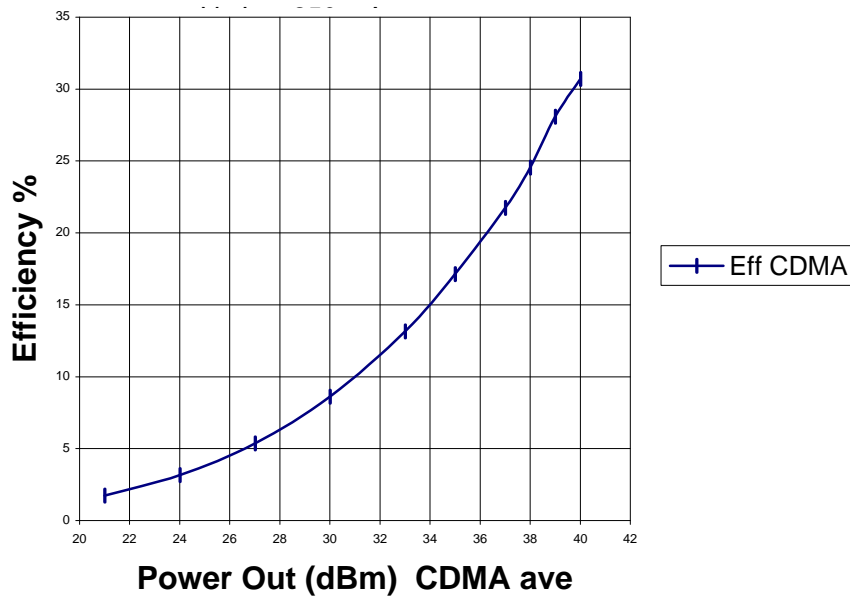
INPUT IMPEDANCE

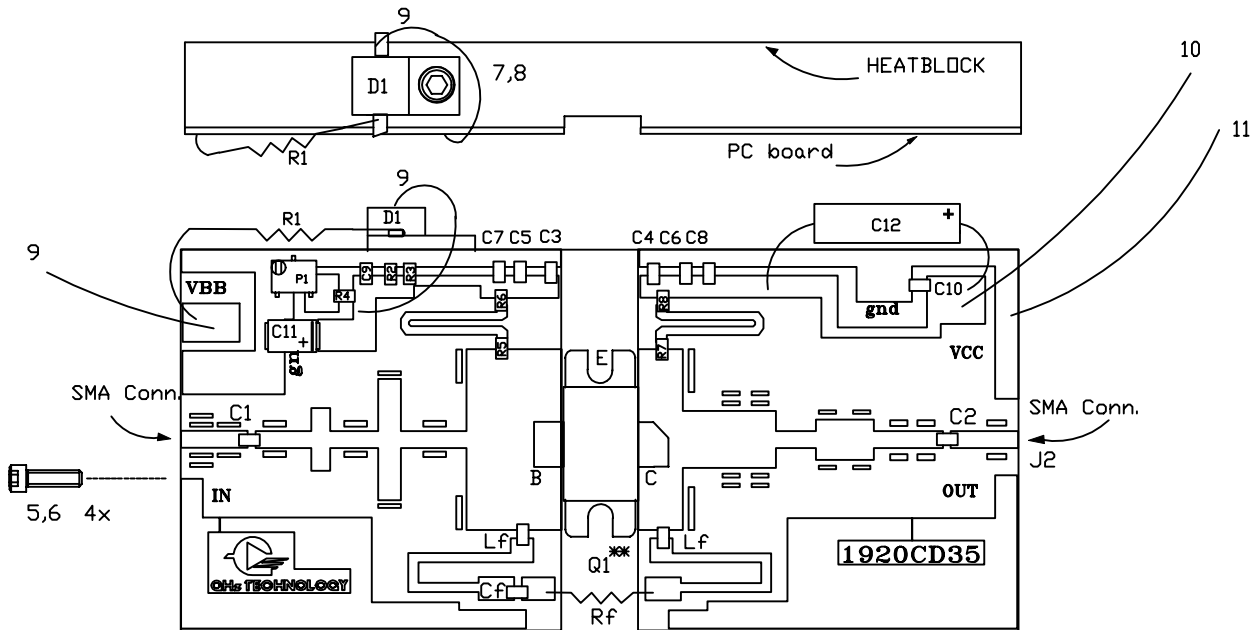
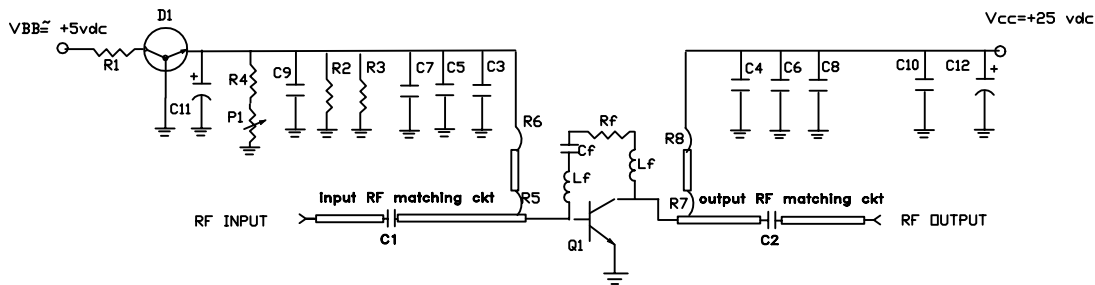
Vcc=25 V Icq=250 mA Pout=35 W CW



Collector Efficiency vs Power out CDMA

F=1990 mHz Vcc=25





ITEM	QTY	PART/MATERIAL-DESCRIPTION	PART NO.	MATL-SPEC
25	2	Ind Chip, 47 nH Coilcraft 1008CS-470		Lf
24	1	Res Chip, 16Ω, 1 w, 5%		R1
23	2	Res Chip, 27Ω, 1/4 w, 5%		R2, R3
22	1	Res Chip, 12Ω, 1/4 w, 5%		R4
21	4	Res Chip, 0Ω, jumper		R5,R6,R7,R8
20	1	Res, 68Ω, 1 w, 5%		Rf
19	1	Potentiometer 500Ω ST5w		P1
18	4	Cap, 10 pF chip (ATC 100B)		C1,C2,C3,C4
17	2	Cap, 100 pF chip (ATC 100B)		C5,C6
16	3	Cap, 10k pF chip (ATC 200B)		C7,C8,Cf
15	2	Cap, 0.1 uF chip NPO		C9
14	1	Cap, 4.7uF 50V,Tantalum, SMD		C10
13	1	Cap, 100uF 10V,Tantalum, SMD		C11
12	1	Cap, 47uF, 50V, Electrolytic		C12
11	AR	Wire, AWG 20 Black		
10	AR	Wire, AWG 20 Red		
9	AR	Wire, AWG 24 yellow		
8	1	Washer # 4		
7	1	Screw, Hex Soc HD, 4-40 x 3/8 stnls	4C37SHCS	
6	4	Washer # 2		
5	4	Screw, Hex Soc HD, 2-56 x 3/8 stnls	2C37SHCS	
4	1	Bias Device,BYI-1T	BYI-1T	
3	2	Connector, SMA, F		J1,J2
2	1	PCB for 1920CD35	42-	PCB
1	1	Heatsink, copper for 55AR outline	43-	HEATSINK



GHz TECHNOLOGY
RF - MICROWAVE SILICON POWER TRANSISTORS

Test Fixture Assembly Dwg:

1920CD35