

2A3/2A3A

0.3 Watts, 20 Volts, Class A
Linear to 2000 MHz

GENERAL DESCRIPTION

The 2A3 is a COMMON EMITTER transistor capable of providing up to 0.3 Watt of Class A, RF output power to 2000 MHz. This transistor is specifically designed for general Class A amplifier applications. It utilizes gold metalization and diffused ballasting to provide high reliability and supreme ruggedness.

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C 3.5 Watts

Maximum Voltage and Current

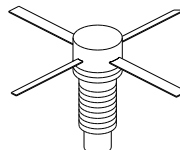
BVces	Collector to Emitter Voltage	50 Volts
BVebo	Emitter to Base Voltage	3.5 Volts
Ic	Collector Current	300 mAmps

Maximum Temperatures

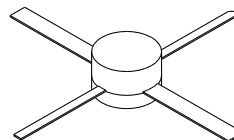
Storage Temperature	- 65 to + 150°C
Operating Junction Temperature	+ 200°C

CASE OUTLINE

2A3 - 55ET, STYLE 2



2A3A - 55EU, STYLE 2



ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Out (<1.0 db gain comp)	F = 2000 MHz	0.3	0.4		Watts
Pin	Power Input	Ic = 140 mA			0.05	Watts
Pg	Power Gain	Vcc = 20 Volts	7.7	8.5		dB
Ft	Transition Frequency	Vce = 20 V, Ic = 140 mA	3.4	3.7		GHz
VSWR	Load Mismatch Tolerance				30:1	

BVebo	Emitter to Base Breakdown	Ie = 1 mA	3.5			Volts
BVces	Collector to Emitter Breakdown	Ic = 25 mA	45			Volts
BVceo	Collector to Emitter Breakdown	Ic = 25 mA	22			Volts
hFE	DC Current Gain	Vce = 5 V, Ic = 100 mA	20			
Cob	Capacitance	Vcb = 28V, f = 1 MHz		2.0	3.0	pF
θjc	Thermal Resistance			45	50	°C/W

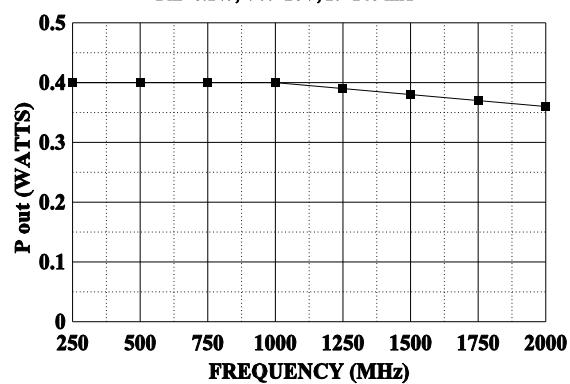
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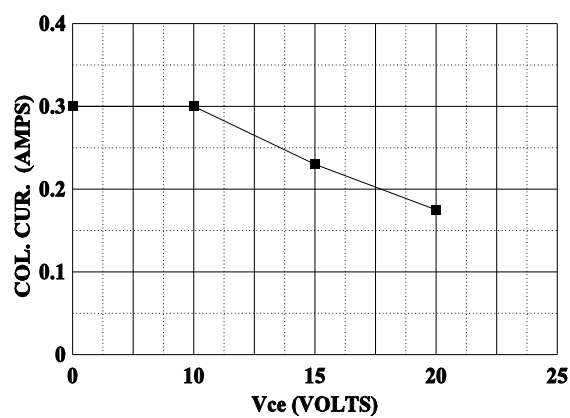
GHz Technology Inc. 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 Tel. 408 / 986-8031 Fax 408 / 986-8120

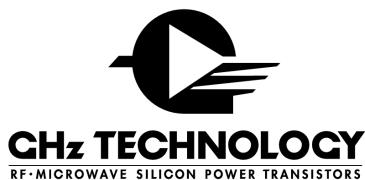
POWER OUTPUT vs FREQUENCY

$P_{in}=0.1W$, $V_{ce}=20V$, $I_c=140\text{ mA}$



DC SAFE OPERATING AREA





2A3-1 (20V, 130mA)

MMICAD for Windows Mon Aug 29 11:02:26 1994
CIRCUIT: MES

FREQ	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
Mhz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
0.100	0.45281	-95.2329	17.7808	141.128	0.01965	55.7878	0.81604	-22.1952
0.200	0.55691	-133.060	12.3921	117.968	0.02827	46.7141	0.64751	-30.1640
0.300	0.59248	-152.349	9.10960	101.891	0.03299	44.7587	0.55878	-32.5949
0.400	0.61231	-164.681	7.09676	91.9635	0.03623	44.7282	0.51092	-33.8071
0.500	0.62286	-173.689	5.79751	85.4254	0.03970	46.3717	0.48562	-35.1713
0.600	0.63042	179.169	4.88702	78.8333	0.04357	48.4265	0.47006	-36.9554
0.700	0.63575	173.085	4.22164	71.6744	0.04753	50.4244	0.46090	-39.1944
0.800	0.64196	167.619	3.71716	66.1425	0.05164	51.9863	0.45452	-41.6934
0.900	0.64676	162.558	3.32218	60.9560	0.05632	53.6343	0.45046	-44.3784
1.000	0.65157	157.794	3.00372	56.1637	0.06123	54.6645	0.44709	-47.3521
1.100	0.65567	153.295	2.74369	51.5326	0.06641	55.5499	0.44562	-50.2775
1.200	0.66019	149.020	2.52453	46.9383	0.07227	56.1550	0.44491	-53.6723
1.300	0.66541	144.902	2.33841	42.5162	0.07818	56.5120	0.44307	-57.1175
1.400	0.67149	141.039	2.17834	38.1501	0.08437	56.6073	0.44243	-60.7031
1.500	0.67803	137.074	2.04129	33.8740	0.09090	56.5741	0.44274	-64.2372
1.600	0.68361	133.165	1.91679	29.6732	0.09828	56.2333	0.44223	-68.0901
1.700	0.68950	129.374	1.80782	25.5582	0.10560	55.5522	0.44276	-72.1120
1.800	0.69527	125.716	1.70851	21.5146	0.11327	54.7967	0.44259	-76.2675
1.900	0.70182	122.178	1.61929	17.5252	0.12139	54.0898	0.44264	-80.6037
2.000	0.70930	118.765	1.53937	13.5708	0.12952	52.9403	0.44245	-85.0590
2.100	0.71692	115.332	1.46528	9.72440	0.13839	51.8619	0.44238	-89.6802
2.200	0.72424	111.925	1.39648	5.88451	0.14732	50.6184	0.44230	-94.4222
2.300	0.73126	108.652	1.33282	2.17783	0.15671	49.1244	0.44305	-99.2898
2.400	0.73907	105.440	1.27399	-1.42328	0.16651	47.5718	0.44342	-104.366
2.500	0.74681	102.352	1.21991	-4.96966	0.17699	45.8714	0.44525	-109.557
2.600	0.75511	99.2635	1.16921	-8.48887	0.18715	44.0082	0.44675	-114.880
2.700	0.76284	96.2568	1.12101	-11.9913	0.19767	42.0430	0.44916	-120.381
2.800	0.76980	93.3498	1.07474	-15.3877	0.20832	40.0242	0.45198	-125.879
2.900	0.77732	90.4059	1.03118	-18.6801	0.21936	37.8056	0.45550	-131.481
3.000	0.78316	87.5317	0.98963	-21.8531	0.23021	35.6127	0.46024	-137.030