

10A030

3 Watts, 20 Volts, Class A
Linear to 1000 MHz

GENERAL DESCRIPTION

The 10A030 is a COMMON EMITTER transistor capable of providing 3 Watts of Class A, RF Output power to 1000 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 13 Watts

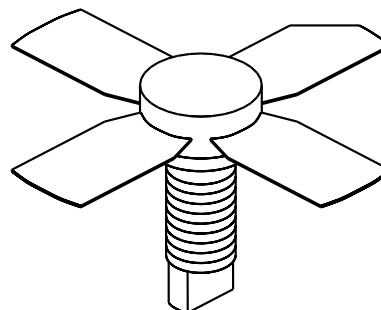
Maximum Voltage and Current

BVces	Collector to Emitter Voltage	50 Volts
BVebo	Emitter to Base Voltage	3.5 Volts
Ic	Collector Current	1.5 Amps

Maximum Temperatures

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

CASE OUTLINE 55FT, STYLE 2



ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Pout	Power Out	F = 1.0 GHz	3.0			Watts
Pin	Power Input	Ic = 440 mA			0.5	Watts
Pg	Power Gain	Vcc = 20 Volts	7.8	8.5		dB
Ft	Transition Frequency	Vce = 20, Ic = 440 mA	2.5			GHz
VSWR	Load Mismatch Tolerance				30:1	

BVebo	Emitter to Base Breakdown	Ie = 3 mA	3.5			Volts
BVces	Collector to Emitter Breakdown	Ic = 20 mA	50			Volts
BVceo	Collector to Emitter Breakdown	Ic = 20 mA	24			Volts
H_{FE}	DC Current Gain	Vce=5V, Ic = 200mA	20		120	
Cob	Output Capacitance	Vcb =28 V, f = 1 MHz		7.3		pF
θjc	Thermal Resistance			10	12.5	°C/W

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MMICAD for Windows Fri Jul 08 10:17:14 1994
CIRCUIT: MES

FREQ	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
0.100	0.86384	-175.711	11.7840	105.213	0.01656	32.7200	0.45128	-140.710
0.200	0.89810	179.995	6.10916	89.5435	0.02060	40.9158	0.45741	-159.485
0.300	0.90527	176.520	4.16857	80.7476	0.02514	47.2410	0.46154	-165.538
0.400	0.90785	173.904	3.14678	73.6585	0.03015	51.2864	0.46771	-168.636
0.500	0.90700	171.423	2.52484	67.4717	0.03550	55.1953	0.47246	-170.457
0.600	0.90492	168.892	2.10293	61.4682	0.04125	56.9639	0.48146	-171.720
0.700	0.90257	166.853	1.80580	55.4964	0.04748	57.4954	0.49119	-172.811
0.800	0.90136	164.829	1.58167	49.9756	0.05393	57.0883	0.50187	-173.903
0.900	0.90665	162.175	1.40575	44.6891	0.06001	56.1720	0.51287	-175.044
1.000	0.90552	159.672	1.26614	39.5858	0.06570	56.1404	0.52442	-175.894
1.100	0.90379	157.279	1.15114	34.6325	0.07235	55.5571	0.53744	-176.970
1.200	0.90146	154.948	1.05407	29.8619	0.07911	54.6194	0.55254	-178.171
1.300	0.90233	152.516	0.97387	25.2954	0.08630	53.5752	0.56592	-179.458
1.400	0.90200	150.160	0.90476	20.8799	0.09339	52.2043	0.58222	179.010
1.500	0.90182	147.523	0.84418	16.5119	0.10084	50.9693	0.59526	177.511
1.600	0.90152	144.908	0.79061	12.4170	0.10864	49.5408	0.60907	175.889
1.700	0.90044	142.204	0.74234	8.48018	0.11652	47.8588	0.62313	174.159
1.800	0.89850	139.275	0.70058	4.69724	0.12503	46.0504	0.63722	172.557
1.900	0.89801	136.529	0.66354	1.23899	0.13410	44.3220	0.64890	170.627
2.000	0.89693	133.646	0.63065	-2.17927	0.14301	42.1476	0.66246	168.861
2.100	0.89520	130.452	0.60102	-5.48733	0.15190	40.0520	0.67673	166.921
2.200	0.89129	127.406	0.57319	-8.77778	0.16034	37.7350	0.69161	164.720
2.300	0.88649	124.259	0.54748	-11.7633	0.17049	35.8499	0.70637	162.144
2.400	0.88484	121.038	0.52446	-14.4361	0.18103	33.6996	0.71437	159.442
2.500	0.87981	117.871	0.50491	-17.0019	0.19223	31.2443	0.72089	156.717
2.600	0.88015	114.514	0.48842	-19.3765	0.20294	28.7067	0.72406	154.339
2.700	0.87616	111.121	0.47349	-21.8592	0.21444	25.8643	0.72989	151.636
2.800	0.87201	107.555	0.45931	-24.2220	0.22621	23.0871	0.73380	148.787
2.900	0.86562	104.136	0.44612	-26.2819	0.23776	20.2884	0.73507	145.901
3.000	0.86077	100.696	0.43476	-28.1578	0.24963	17.4908	0.73428	142.942