

10AM20

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

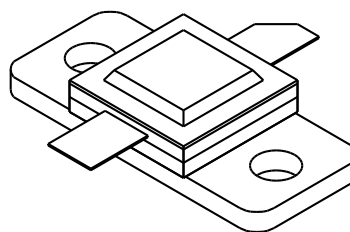
GENERAL DESCRIPTION

The 10AM20 is a COMMON EMITTER transistor capable of providing 20 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. The transistor uses a fully hermetic High Temperature Solder Sealed package.

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C		63 Watts
Maximum Voltage and Current		
BVces	Collector to Emitter Voltage	50 Volts
BVebo	Emitter to Base Voltage	3.5 Volts
Ic	Collector Current	5.5 Amps
Maximum Temperatures		
Storage Temperature		- 65 to + 200°C
Operating Junction Temperature		+ 200°C

CASE OUTLINE 55AT, STYLE 2



SEE NOTE BELOW

ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P _{out}	Power Out	F = 1.0 GHz	20	24		Watts
P _{in}	Power Input	I _c = 2.8 A		3.0	4.5	Watts
P _g	Power Gain	V _{cc} = 20 Volts	6.5	7.0		dB
F _t	Transition Frequency	V _{ce} = 22 V, I _c = 2.8 A				GHz
VSWR	Load Mismatch Tolerance				3:1	

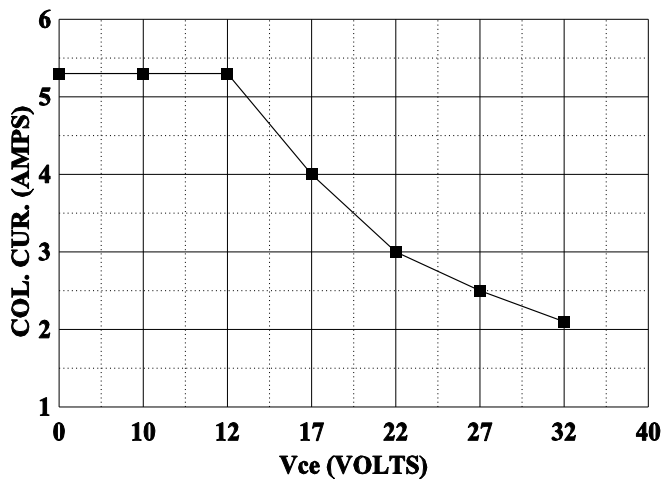
BVebo	Emitter to Base Breakdown	I _e = 15 mA	3.5			Volts
BVces	Collector to Emitter Breakdown	I _c = 180 mA	50			Volts
BVceo	Collector to Emitter Breakdown	I _c = 180 mA	24			Volts
H _{FE}	DC Current Gain	V _{ce} = 5 V, I _c = 1.0 A	20	40		
C _{ob}	Output Capacitance	V _{cb} = 28V, f = 1.0 MHz		1.2	1.5	pF
θ _{jc}	Thermal Resistance					°C/W

Case Outline Note: During 1995 Ghz will be converting the 55AT style flange to the version using a slot in the mounting area, refer to 55AW.

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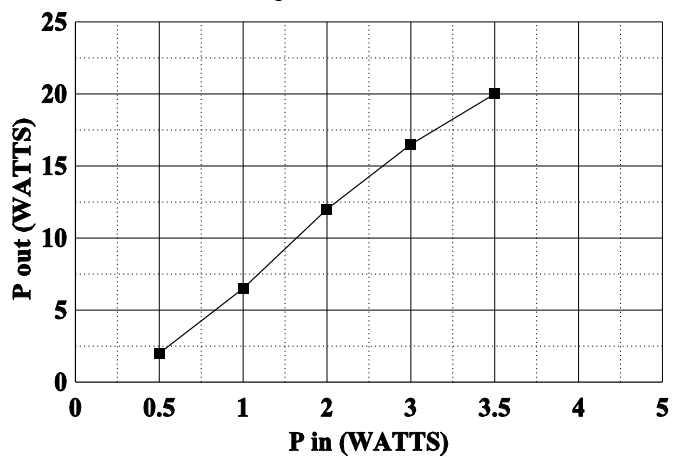
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DC SAFE OPERATING AREA



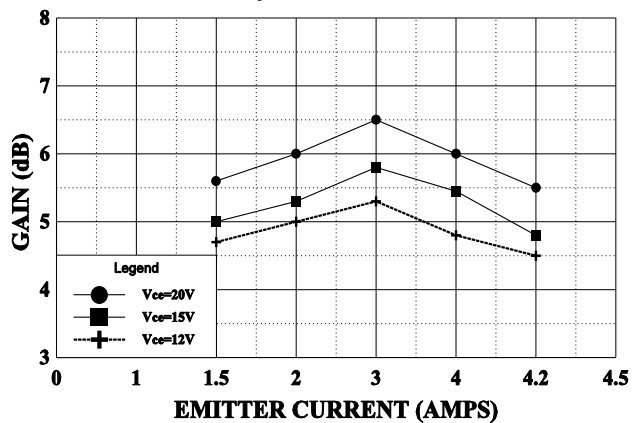
POWER OUTPUT vs POWER INPUT

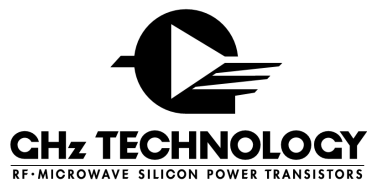
@ f = 1.0 GHz



POWER GAIN vs EMITTER CURRENT

@ f = 1.0 GHz





10AM20-1 (20V, 2.8A)

MMICAD for Windows Thu Jul 07 15:16:12 1994
CIRCUIT: MES

FREQ	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
0.100	0.98042	179.102	2.10044	84.3821	0.00574	7.49294	0.84911	-178.354
0.200	0.97942	178.441	1.06009	76.0413	0.00590	12.7304	0.85165	179.711
0.300	0.98164	177.294	0.71638	68.2457	0.00610	15.4545	0.85250	179.132
0.400	0.98027	176.356	0.54849	60.6564	0.00648	23.1369	0.85673	178.300
0.500	0.97771	175.494	0.45085	53.1962	0.00712	27.3157	0.86079	177.544
0.600	0.97545	174.510	0.38717	45.5503	0.00780	29.5643	0.86456	176.610
0.700	0.97364	173.638	0.34494	37.7533	0.00839	28.3111	0.86626	175.715
0.800	0.97163	172.940	0.31628	30.0171	0.00952	28.4029	0.86454	174.832
0.900	0.96813	172.016	0.29728	22.2154	0.01005	26.5730	0.86344	174.180
1.000	0.96290	170.981	0.28765	13.9446	0.01148	22.7451	0.86394	173.765
1.100	0.95560	170.070	0.28538	4.87368	0.01195	17.3657	0.86818	173.314
1.200	0.94359	169.205	0.29143	-5.68266	0.01285	8.82168	0.87628	172.784
1.300	0.93035	168.424	0.30431	-18.6203	0.01303	-1.13779	0.88605	172.090
1.400	0.90972	168.118	0.32028	-35.3034	0.01286	-16.1156	0.90316	171.029
1.500	0.88974	168.540	0.32622	-56.8590	0.01133	-32.8235	0.92303	169.294