



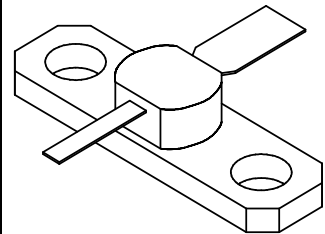
80143

1.0 Watts, 15 Volts, Class A
Linear to 2300MHz

GENERAL DESCRIPTION

The **80143** is a common emitter transistor capable of providing 1.0Watts of Class A, RF output power to 2300 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.

CASE OUTLINE 55BT, Style 2



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C	4.5 Watts
BV _{CES} Collector to Emitter Voltage	50 Volts
BV _{EBO} Emitter to Base Voltage	3.5 Volts
I _C Collector Current	0.6 Amps
Storage Temperature	-65 to +200 °C
Operating Junction Temperature	+200 °C

FUNCTIONAL CHARACTERISTICS @ 25°C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P _{OUT}	Power Out	F = 2300 MHz V _{CE} = 15V I _C = 200mA	0.1	-	-	W
P _{IN}	Power Input		-	-	0.125	W
G _P	Power Gain		9.0	10.0	-	dB
F _T	Transition Frequency		4.2	4.5		GHz
VSWR	Load Mismatch Tolerance		-	-	10:1	-

ELECTRICAL CHARACTERISTICS @ 25°C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
BV _{EBO}	Emitter to Base Breakdown	I _E = 2 mA	3.5	-	-	V
BV _{CES}	Collector to Emitter Breakdown	I _C = 20 mA	50	-	-	V
BV _{CEO}	Collector to Emitter Breakdown	I _C = 20 mA	20	-	-	V
h _{FE}	DC – Current Gain	I _C = 200 mA, V _{CE} = 5 V	20	-	-	-
C _{OB}	Output Capacitance	F = 1MHz, V _{CB} = 28V	-	3.4	-	pF
θ _{jc} ¹	Junction-Case Thermal Resistance		-	-	30	°C/W

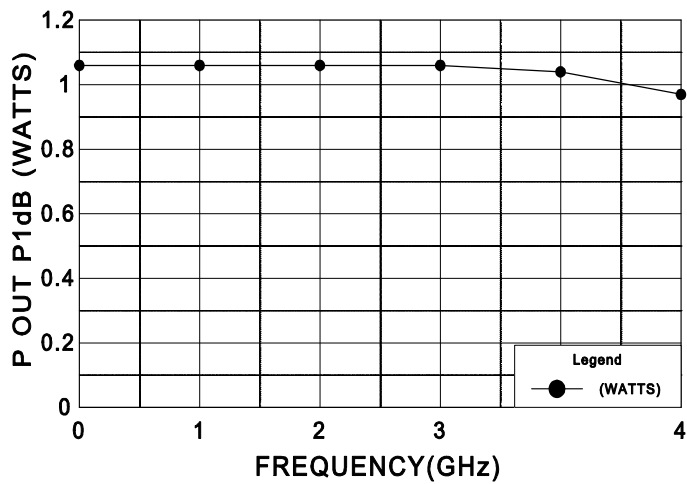
NOTES: 1. At rated output power with MSC fixture.
Rev. A: May. 2010

Microsemi reserves the right to change, without notice, the specifications and information contained herein.
Visit our web site at www.microsemi.com or contact our factory direct.

Typical Performance

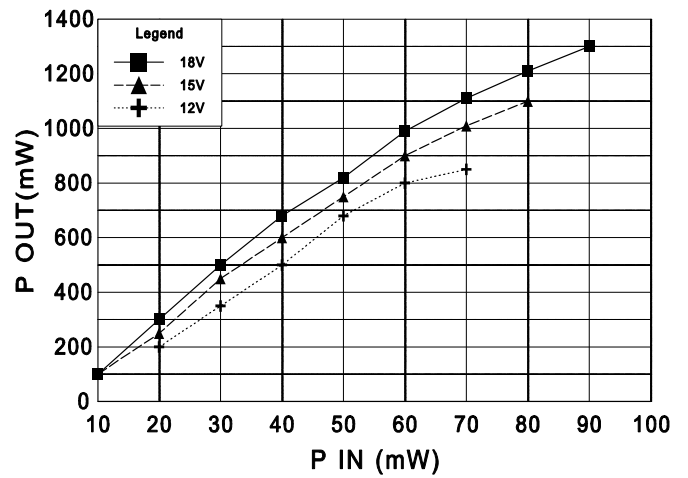
POWER OUTPUT vs FREQUENCY

Vcc=15V

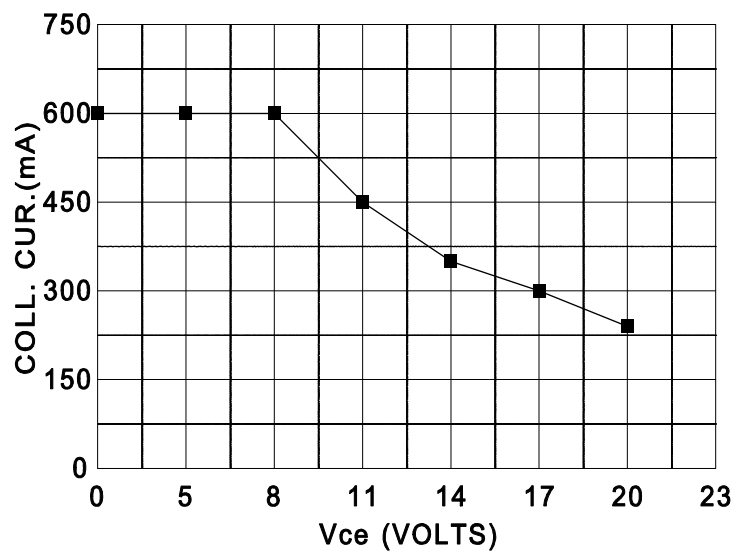


POWER OUTPUT vs POWER INPUT

Vce=12,15,18 Volts; Ic=200mA



DC SAFE OPERATING AREA





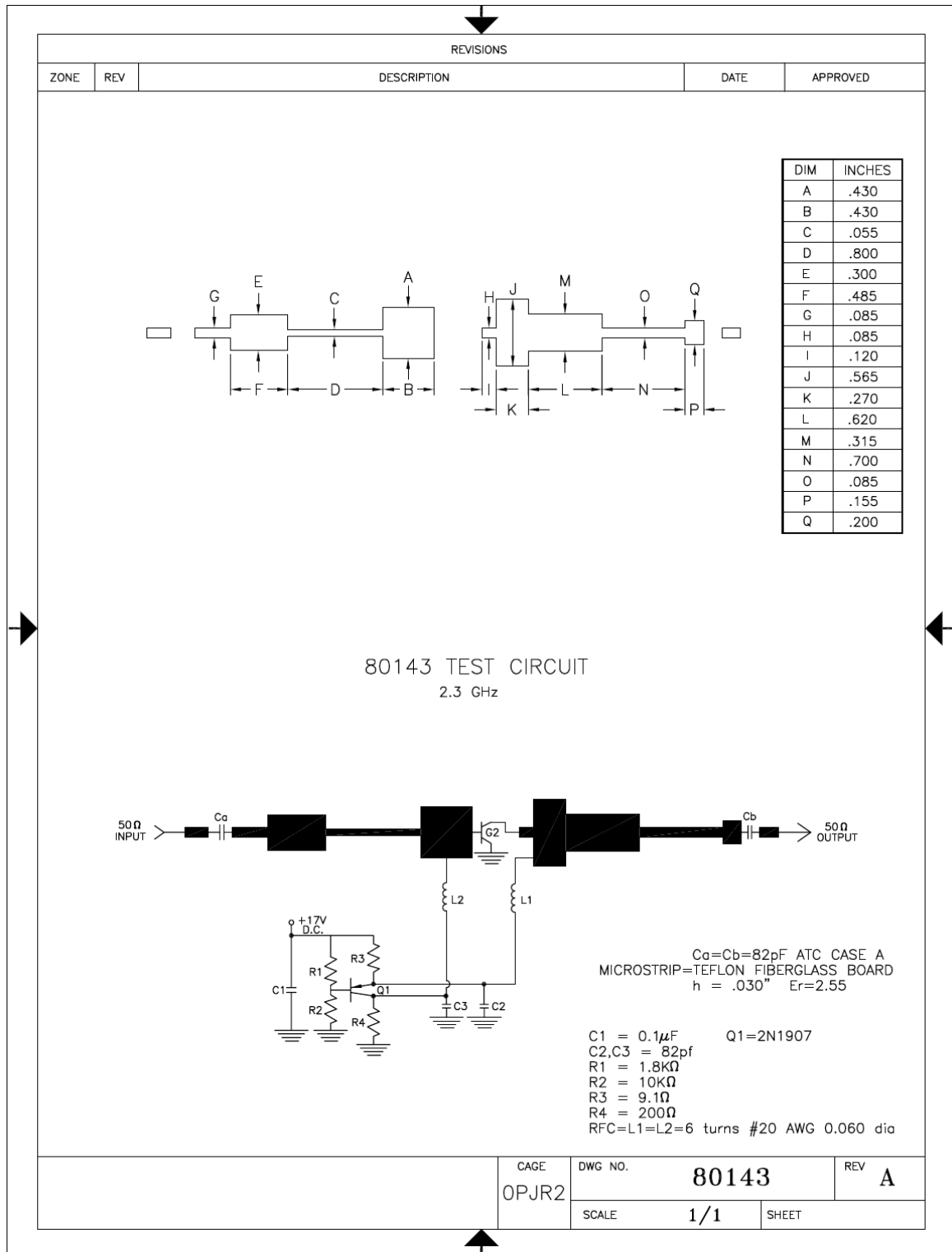
80143

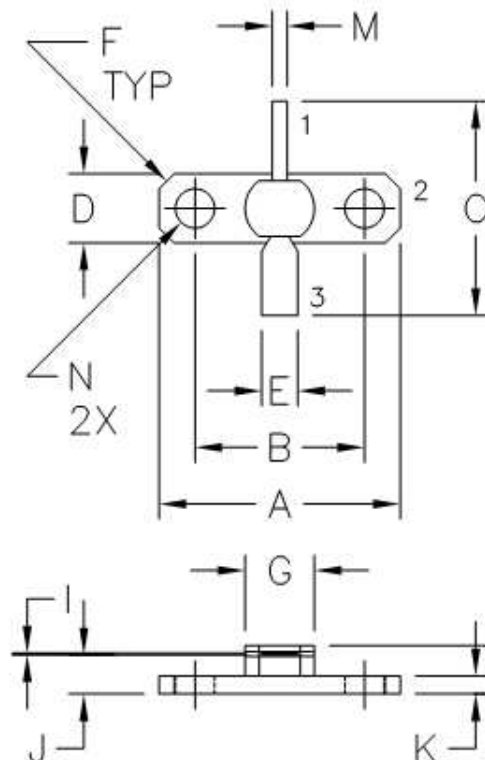
S-Parameters @ Vcc=15V, Ic=200mA

MMICAD for Windows Fri Aug 26 16:33:49 1994

CIRCUIT: MES

FREQ	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
0.100	0.74523	-139.072	23.1569	122.888	0.02130	38.6374	0.63665	-59.3430
0.200	0.83904	-160.387	13.2482	102.204	0.02481	21.9060	0.41262	-79.9929
0.300	0.86349	-169.532	9.16285	88.7446	0.02580	16.4347	0.33897	-90.5201
0.400	0.86945	-175.151	6.95469	80.6123	0.02656	14.7851	0.31507	-97.6573
0.500	0.87126	-179.220	5.58335	74.7734	0.02687	14.2935	0.31273	-103.182
0.600	0.87258	177.456	4.65226	68.6924	0.02714	13.6292	0.32109	-107.892
0.700	0.87336	174.600	3.98221	61.9474	0.02780	13.7272	0.33588	-112.258
0.800	0.87406	172.167	3.47879	56.5060	0.02858	14.7467	0.35353	-116.149
0.900	0.87451	169.727	3.09034	51.3262	0.02910	14.9821	0.37354	-119.802
1.000	0.87453	167.348	2.78319	46.4507	0.02988	15.5773	0.39486	-123.289
1.100	0.87250	165.042	2.52784	41.6152	0.03071	15.8776	0.41654	-126.688
1.200	0.87116	162.788	2.31762	36.8549	0.03160	15.8605	0.43867	-129.991
1.300	0.86967	160.535	2.13966	32.1575	0.03283	16.4435	0.45927	-133.270
1.400	0.86986	158.314	1.98768	27.4928	0.03400	16.6297	0.47936	-136.529
1.500	0.86824	155.918	1.85641	22.8336	0.03539	17.2656	0.49878	-139.661
1.600	0.86604	153.421	1.74081	18.2254	0.03715	17.0624	0.51780	-142.847
1.700	0.86184	150.901	1.63766	13.6683	0.03858	17.1415	0.53552	-145.989
1.800	0.85937	148.379	1.54533	9.18261	0.04023	16.2272	0.55225	-149.096
1.900	0.85612	145.720	1.46274	4.78123	0.04221	16.4217	0.56783	-152.155
2.000	0.85458	143.071	1.39093	0.39241	0.04425	15.7298	0.58247	-155.087
2.100	0.85286	140.202	1.32681	-4.05113	0.04756	14.6697	0.59834	-158.056
2.200	0.84763	137.149	1.26508	-8.50524	0.04983	12.8878	0.61184	-161.166
2.300	0.84009	133.993	1.20767	-12.7453	0.05193	10.6982	0.62395	-163.961
2.400	0.83220	131.013	1.15845	-16.8963	0.05368	8.83368	0.63750	-166.655
2.500	0.82465	128.048	1.11640	-20.9442	0.05551	7.95492	0.65178	-169.272
2.600	0.82067	124.938	1.07896	-25.1542	0.05751	6.83706	0.66487	-172.024
2.700	0.81483	121.427	1.04441	-29.3750	0.06047	5.84021	0.67664	-174.598
2.800	0.80880	117.847	1.01308	-33.6115	0.06346	4.53989	0.68926	-177.140
2.900	0.79979	114.017	0.98350	-37.9183	0.06665	2.84239	0.70128	-179.771
3.000	0.79177	110.076	0.95667	-42.2425	0.07059	1.12060	0.71196	177.606





DIM	MILLIMETER	±TOL	INCHES	±TOL
A	20.32	.13	.800	.005
B	14.27	.13	.562	.005
C	18.03	MIN	.710	MIN
D	5.84	.13	.230	.005
E	3.05	.13	.120	.005
F	1.02 x 45°	.13	.040 x 45°	.005
G	5.84	.13	.230	.005
H	4.57	REF	.180	REF
I	0.13	.02	.005	.001
J	3.30	.13	.130	.005
K	1.52	.13	.060	.005
M	1.27	.13	.050	.005
N	3.30 DIA	.13	.130 DIA	.005

STYLE 1: COMMON BASE
PIN1 = COLLECTOR
2 = BASE
3 = EMITTER

STYLE 2: COMMON EMITTER
PIN1 = COLLECTOR
2 = EMITTER
3 = BASE

STYLE 3: COMMON COLLECTOR
PIN1 = BASE
2 = COLLECTOR
3 = EMITTER

STYLE 4: COMMON COLLECTOR - OPTION
PIN1 = EMITTER
2 = COLLECTOR
3 = BASE

