



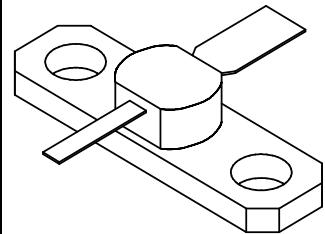
80143

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	-

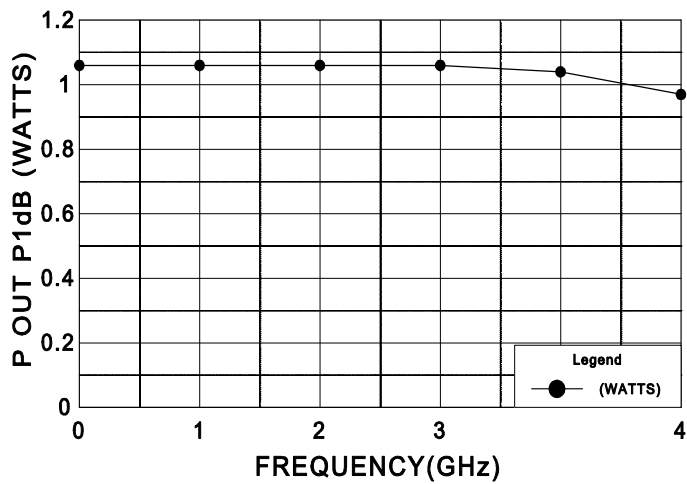
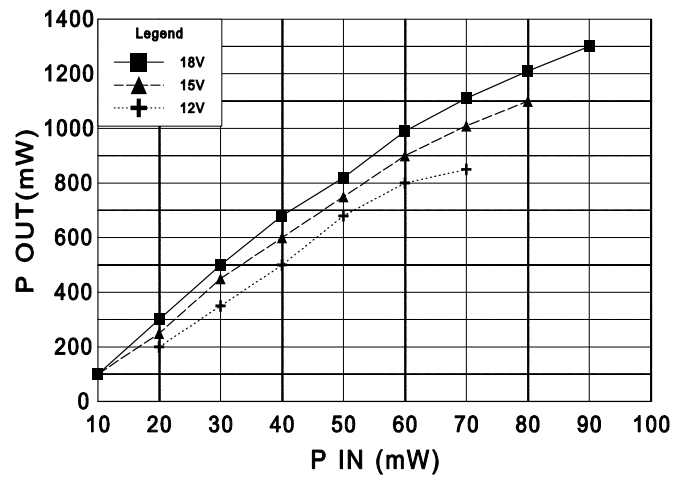
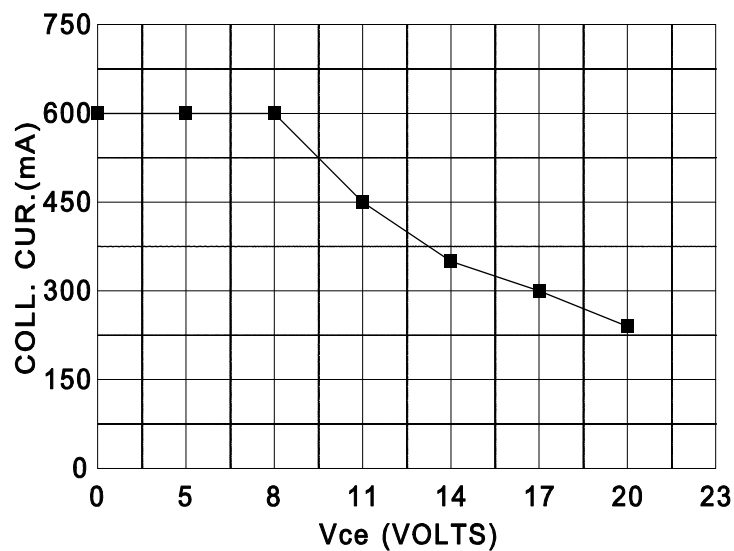
ELECTRICAL CHARACTERISTICS @ 25°C

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

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Typical Performance

POWER OUTPUT vs FREQUENCY
 $V_{CC}=15V$

POWER OUTPUT vs POWER INPUT
 $V_{CE}=12, 15, 18 \text{ Volts}; I_C=200mA$

DC SAFE OPERATING AREA




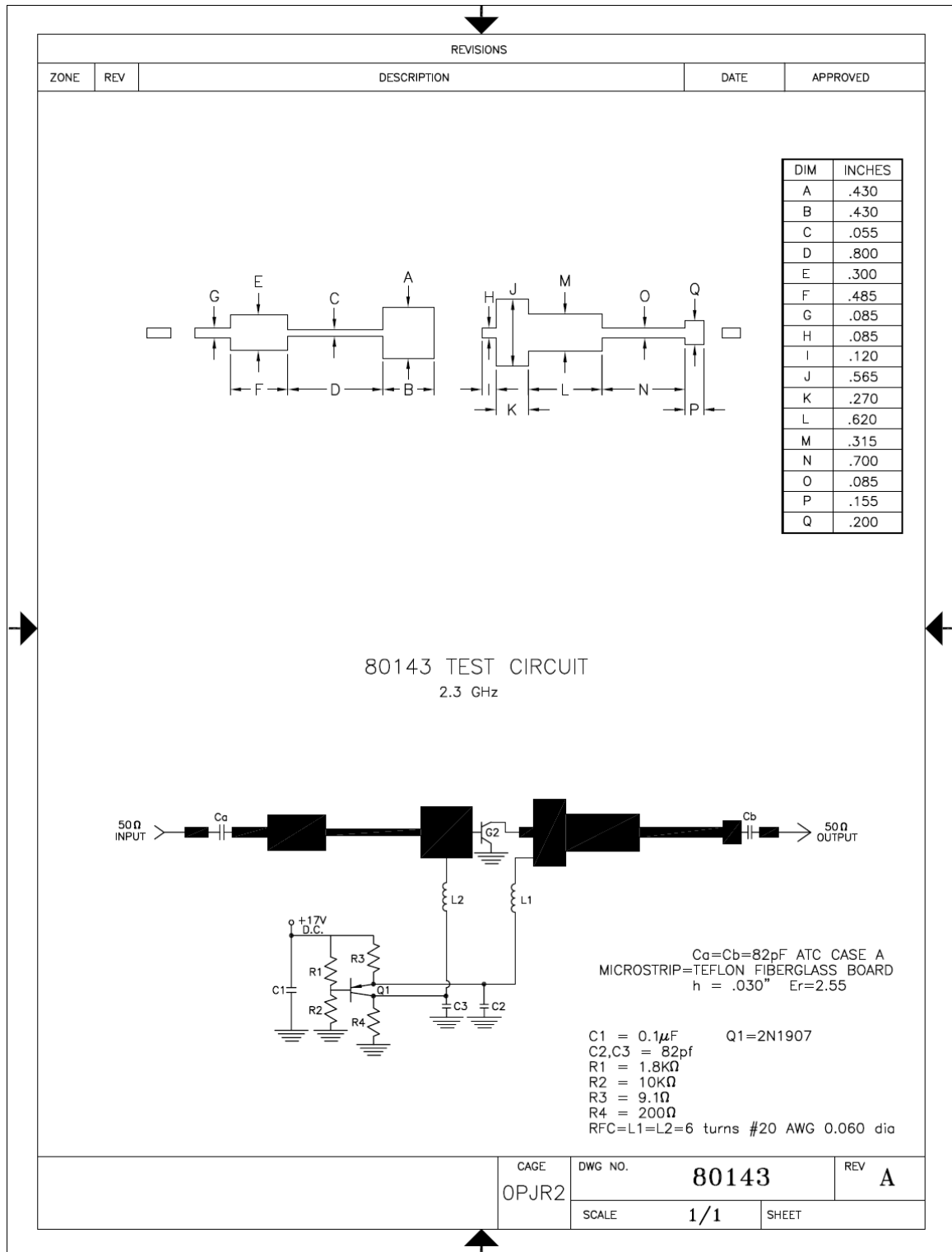
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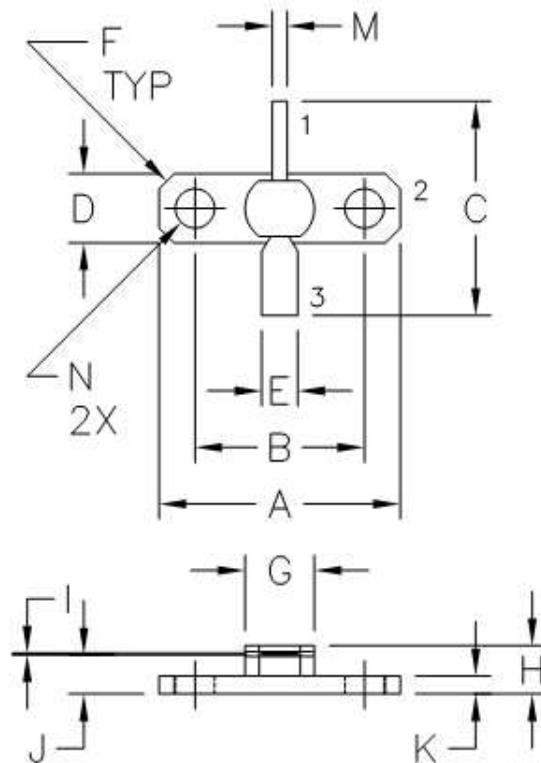
S-Parameters @ Vcc=15V, Ic=200mA

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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

