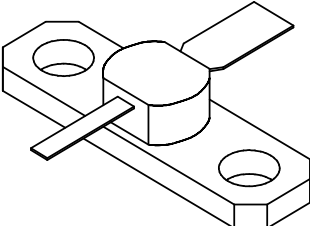




23A003

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

<p>GENERAL DESCRIPTION</p> <p>The 23A003 is a common emitter transistor capable of providing 0.3Watts 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.</p>	<p>CASE OUTLINE 55BT, Style 2</p> 
<p>ABSOLUTE MAXIMUM RATINGS</p> <p>Maximum Power Dissipation @ 25°C 3.0 Watts</p> <p>BV_{CES} Collector to Emitter Voltage 50 Volts BV_{EBO} Emitter to Base Voltage 3.5 Volts I_C Collector Current 0.3 Amps</p> <p>Storage Temperature -65 to +200 °C Operating Junction Temperature +200 °C</p>	

FUNCTIONAL CHARACTERISTICS @ 25°C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P _{OUT}	Power Out	F = 2300 MHz V _{CE} = 15V I _C = 100mA	0.3	-	-	W
P _{IN}	Power Input		-	-	0.03	W
G _P	Power Gain		10.0	11.0	-	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 = 100 mA, V _{CE} = 5 V	20	-	-	-
C _{OB}	Output Capacitance	F = 1MHz, V _{CB} = 20V	-	2.5	-	pF
θ _{jc} ¹	Junction-Case Thermal Resistance		-	-	45	°C/W

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

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Visit our web site at www.microsemi.com or contact our factory direct.



23A003

S-Parameters @ Vcc=15V, Ic=100mA

!Device Type:

23A003

!Bias Point: Vcc= 15.0V, Ic=100mA

GHZ S MA R 50

!Freq	S11	S11	S21	S21	S12	S12	S22	S22
!(GHz)	Mag	Ang	Mag	Ang	Mag	Ang	Mag	Ang
0.1	0.6107	-76.06	13.6678	131.48	0.0193	39.46	0.8131	-36.12
0.2	0.7326	-135.42	12.5791	110.59	0.0239	32.18	0.5643	-46.91
0.3	0.7630	-155.34	9.7140	94.89	0.0263	26.91	0.4927	-51.60
0.4	0.7503	-166.69	7.2302	85.46	0.0266	25.60	0.4952	-54.09
0.5	0.7278	-172.33	5.7590	77.66	0.0275	24.47	0.4870	-60.62
0.6	0.7251	-175.92	4.8585	72.06	0.0280	24.50	0.4822	-66.74
0.7	0.7552	-179.59	4.3286	65.91	0.0290	25.99	0.4867	-72.71
0.8	0.7651	-174.23	3.8770	57.89	0.0296	27.61	0.4975	-77.78
0.9	0.7461	169.29	3.3998	50.62	0.0316	30.58	0.5119	-82.81
1.0	0.7245	167.19	2.9883	45.27	0.0337	30.56	0.5398	-88.26
1.1	0.7255	166.25	2.7007	41.63	0.0358	31.58	0.5652	-94.79
1.2	0.7475	164.87	2.5264	37.95	0.0384	30.98	0.5773	-101.37
1.3	0.7698	161.53	2.4094	32.57	0.0405	29.99	0.5843	-107.25
1.4	0.7674	157.17	2.2298	25.61	0.0417	29.59	0.5897	-112.10
1.5	0.7435	154.28	1.9959	19.99	0.0443	29.91	0.6099	-115.97
1.6	0.7271	153.25	1.8027	15.93	0.0458	27.97	0.6377	-122.20
1.7	0.7684	149.16	1.6654	12.64	0.0471	28.90	0.6168	-129.19
1.8	0.7043	143.11	1.6027	8.93	0.0616	32.80	0.5593	-134.58
1.9	0.7580	146.07	1.5619	7.55	0.0515	20.28	0.4580	-124.43
2.0	0.7486	139.88	1.5237	-0.96	0.0529	19.34	0.5808	-117.67
2.1	0.7190	134.94	1.4152	-6.93	0.0547	19.68	0.6648	-123.45
2.2	0.6849	131.72	1.3130	-11.11	0.0536	15.86	0.6980	-128.45
2.3	0.6692	130.44	1.2329	-12.89	0.0521	20.45	0.7398	-132.08

