

^{124}Ba $Z = 56$ $N = 68$ [link to full NNDC output](#)

Based on ENSDF from Dec 2018, and mass evaluation from 2016

BE = 1036.122 (0.013) MeV

Qbeta+ = 2.641 (0.015) MeV

	Energy T	J+	J-	J-other	T1/2

S-alpha=	-0.658	(0.017)	-----		
124BA 1	0.000	0+			1 11.0 M 5
124BA 2	0.230	2+			2 191 PS 8
124BA 3	0.652	4+			3
124BA 4	0.873	2+			4
124BA 5	0.898	0+			5
124BA 6	1.071	0+			6
124BA 7				1.162 (3+)	7
124BA 8	1.228	6+			8
124BA 9	1.325	4+			9
124BA 10				1.353 (2+)	10

124BA 11	1.357	0+			11
124BA 12				1.672 (5+)	12
124BA 13				1.722 (3-)	13
124BA 14				1.858 (6+)	14
124BA 15			1.913 5-		15
124BA 16	1.923	8+			16
124BA 17				2.034 (4-)	17
124BA 18				2.262 (7-)	18
124BA 19			2.267 5-		19
124BA 20				2.285 (7+)	20

124BA 21				2.359 (6-)	21
124BA 22				2.479 (8+)	22
124BA 23				2.498 (6-)	23
124BA 24				2.647 (7-)	24
124BA 25				2.688 (10+)	25
124BA 26				2.691 (7-)	26
124BA 27				2.705 (8-)	27
124BA 28				2.722 (9-)	28
124BA 29				2.907 (8-)	29
124BA 30				2.975 (9+)	30

124BA 31				3.096 (7-)	31
124BA 32				3.110 (9-)	32
124BA 33				3.157 (10-)	33
124BA 34				3.177 (10+)	34
124BA 35				3.287 (11-)	35
124BA 36				3.336 (10-)	36

124BA 37				3.436	(12+)	37
124BA 38				3.592	(11-)	38
124BA 39				3.692	(12+)	39
124BA 40				3.694	(11+)	40

124BA 41				3.773	(12-)	41
124BA 42				3.829	(11)	42
124BA 43				3.891	(12-)	43
124BA 44				3.968	(13)-	44
124BA 45				4.126	(14+)	45
124BA 46				4.228	(13-)	46
124BA 47				4.382	(11+)	47
124BA 48				4.407	(14+)	48
124BA 49				4.534	(14-)	49
124BA 50				4.551	(12+)	50

124BA 51				4.604	(14-)	51
124BA 52				4.762	(15-)	52
124BA 53				4.766	(13+)	53
124BA 54				4.892	(16+)	54
124BA 55				5.010	(15-)	55
124BA 56				5.027	(14+)	56
124BA 57				5.216	(16+)	57
124BA 58				5.329	(15+)	58
S-p = 5.335 (0.017)	-----					
124BA 59				5.392	(16-)	59
124BA 60				5.446	(16-)	60

124BA 61				5.639	(17-)	61
124BA 62				5.668	(16+)	62
124BA 63				5.725	(17+)	63
124BA 64				5.763	(18+)	64
124BA 65				5.906	(17-)	65
124BA 66				6.045	(17+)	66
124BA 67				6.080	(18+)	67
124BA 68				6.190	(18+)	68
124BA 69				6.290	(18-)	69
124BA 70				6.383	(18-)	70

124BA 71				6.453	(18+)	71
124BA 72				6.556	(19-)	72
124BA 73				6.581	(19+)	73
124BA 74				6.704	(18)	74
124BA 75				6.711	(20+)	75
124BA 76				6.871	(19-)	76
124BA 77				6.897	(19+)	77
124BA 78				6.999	(20+)	78
124BA 79				7.082	(20+)	79
124BA 80				7.230	(20-)	80

124BA 81				7.363	(20+)	81
124BA 82				7.366	(20-)	82
124BA 83				7.500	(21+)	83
124BA 84				7.503	(21-)	84
124BA 85				7.716	(22+)	85
124BA 86				7.864	(21+)	86
124BA 87				7.876	(21-)	87
124BA 88				7.983	(22+)	88
124BA 89				8.098	(22+)	89
124BA 90				8.262	(22-)	90

S-2p	=	8.313	(0.017)	-----		
124BA 91				8.369	(22+)	91
124BA 92				8.408	(22-)	92
124BA 93				8.483	(23+)	93
124BA 94				8.512	(23-)	94
124BA 95				8.794	(24+)	95
124BA 96				8.904	(23+)	96
124BA 97				8.910	(23-)	97
124BA 98				9.053	(24+)	98
124BA 99				9.177	(24+)	99
124BA 100				9.380	(24-)	100

124BA 101				9.428	(24+)	101
124BA 102				9.525	(24-)	102
124BA 103				9.562	(25+)	103
124BA 104				9.613	(25-)	104
124BA 105				9.916	(25)	105
124BA 106				9.951	(26+)	106
124BA 107				9.975	(25+)	107
124BA 108				9.981	(25-)	108
124BA 109				10.220	(26+)	109
124BA 110				10.308	(26+)	110

124BA 111				10.520	(26+)	111
124BA 112				10.561	(26-)	112
124BA 113				10.704	(26-)	113
124BA 114				10.747	(27+)	114
124BA 115				10.812	(27-)	115
124BA 116				11.068	(27)	116
124BA 117				11.077	(27+)	117
124BA 118				11.115	(26)	118
124BA 119				11.182	(28+)	119
124BA 120				11.472	(28+)	120

S-n	=	11.506	(0.017)	-----		
124BA 121				11.523	(28+)	121
124BA 122				11.649	(28+)	122
124BA 123				11.753	(28-)	123
124BA 124				12.030	(29+)	124

124BA 125				12.116	(29-)	125
124BA 126				12.242	(29+)	126
124BA 127				12.289	(29)	127
124BA 128				12.491	(30+)	128
124BA 129				12.733	(30+)	129
124BA 130				12.820	(30+)	130

124BA 131				12.860	(30+)	131
124BA 132				12.960	(30-)	132
124BA 133				13.348	(30)	133
124BA 134		13.406	31+			134
124BA 135				13.492	(31+)	135
124BA 136				13.517	(31-)	136
124BA 137				13.590	(31)	137
124BA 138				13.880	(32+)	138
124BA 139				14.058	(32+)	139
124BA 140				14.184	(32-)	140

124BA 141				14.191	(32+)	141
124BA 142				14.755	(32)	142
124BA 143				14.832	(33+)	143
124BA 144				14.881	(33+)	144
124BA 145				14.979	(33)	145
124BA 146				15.004	(33-)	146
124BA 147				15.335	(34+)	147
124BA 148				15.459	(34+)	148
124BA 149				15.475	(34-)	149
124BA 150				15.618	(34+)	150

124BA 151				16.029	(34)	151
124BA 152				16.280	(35+)	152
124BA 153				16.425	(35+)	153
124BA 154				16.461	(35)	154
124BA 155				16.775	(36+)	155
124BA 156				16.914	(36+)	156
124BA 157				16.944	(36+)	157
124BA 158				17.111	(36+)	158
124BA 159				17.435	(36)	159
124BA 160				18.041	(37)	160

124BA 161				18.045	(37+)	161
124BA 162				18.070	(38+)	162
124BA 163				18.144	(38+)	163
124BA 164				18.525	(38+)	164
124BA 165				18.649	(38+)	165
124BA 166				18.909	(38)	166
124BA 167				19.721	(39)	167

S-p = 5.335 (0.017)-----

S-n = 11.506 (0.017)-----
S-2p = 8.313 (0.017)-----
S-2n = 20.624 (0.031)-----
S-alpha= -0.658 (0.017)-----

S+p = -1.959 (0.029)
S+n = -8.651 (0.017)
S+2p = -6.309 (0.031)
S+2n = -19.723 (0.018)
S+alpha = 1.131 (0.031)

gap p = 3.376 (0.034)
gap n = 2.856 (0.024)
gap 2p = 2.004 (0.035)
gap 2n = 0.901 (0.035)
gap alpha = 0.473 (0.035)