

$^{128}\text{Ba}$        $Z = 56$        $N = 72$       adopted link      ENSDF link

Based on ENSDF from Oct 2022, and mass evaluation from 2020

BE = 1074.687 ( 0.002) MeV

Qbeta+ = 0.563 ( 0.006) MeV

	Energy T	J+	J-	J-other	T1/2
128BA 1	0.000	0+			1 2.43 D 5
S-alpha= 0.127 ( 0.002)					
128BA 2	0.284	2+			2 105 PS 9
128BA 3	0.763	4+			3 5.34 PS 24
128BA 4	0.885	2+			4 3.4 PS 4
128BA 5	0.942	0+			5
128BA 6	1.321	2+			6
128BA 7	1.324	3+			7
128BA 8	1.372	4+			8 3.3 PS 3
128BA 9	1.407	6+			9 1.33 PS 12
128BA 10	1.710	0+			10
128BA 11	1.800	4+			11
128BA 12	1.834	4+			12
128BA 13	1.908	4+			13
128BA 14	1.931	5+			14
128BA 15	1.939	6+			15 1.86 PS 22
128BA 16				1.954	16
128BA 17				2.009	17
128BA 18				2.039	(1+ to 4+) 18
128BA 19			2.039	5-	19 1.12 PS 17
128BA 20	2.055	2+			20
128BA 21				2.176	(4 to 6) 21
128BA 22	2.189	8+			22 0.53 PS 7
128BA 23				2.193	(4+) 23
128BA 24				2.198	3-,4+ 24
128BA 25				2.203	(3-,4+) 25
128BA 26	2.219	0+			26
128BA 27				2.247	(4 to 6+) 27
128BA 28	2.251	4+			28
128BA 29	2.347	2+			29
128BA 30				2.396	(7)- 30 6.1 NS 2
128BA 31			2.413	7-	31 3.6 PS 3
128BA 32				2.425	(4-,5+) 32
128BA 33	2.444	0+			33
128BA 34				2.451	(3- to 6+) 34
128BA 35				2.474	(2+ to 6+) 35
128BA 36				2.486	36

128BA 37						2.511				37
128BA 38						2.532	(4+ to 7-)			38
128BA 39		2.552	4+							39
128BA 40						2.571	(4+ to 7-)			40
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128BA 41		2.590	2+							41
128BA 42		2.600	8+							42 0.8 PS 3
128BA 43						2.613	(8)-			43 119 PS 5
128BA 44						2.627				44
128BA 45		2.629	0+							45
128BA 46		2.631	7+							46
128BA 47						2.659	(3-)			47
128BA 48						2.670				48
128BA 49						2.710	(2+)			49
128BA 50						2.721	(5,6+)			50
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128BA 51						2.746				51
128BA 52						2.749				52
128BA 53		2.770	0+							53
128BA 54						2.804				54
128BA 55		2.840	0+							55
128BA 56						2.849				56
128BA 57						2.861	(8-)			57 25 PS 3
128BA 58						2.870				58
128BA 59						2.878	(5-,6+)			59
128BA 60				2.906	9-					60 3.8 PS 3
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128BA 61		2.923	0+							61
128BA 62						2.927	(9)-			62 11.8 PS 8
128BA 63						2.930				63
128BA 64						2.950				64
128BA 65						2.975				65
128BA 66						2.978	(4,5)			66
128BA 67						3.039				67
128BA 68		3.082	10+							68 0.40 PS 6
128BA 69						3.086	(3-)			69
128BA 70						3.117				70
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128BA 71						3.127				71
128BA 72						3.204				72
128BA 73						3.246				73
128BA 74						3.293	(10)-			74 2.6 PS 6
128BA 75						3.334	(10-)			75 3.4 PS 3
128BA 76						3.341	(4+)			76
128BA 77		3.346	10+							77 0.63 PS 19
128BA 78						3.387	(9+)			78
128BA 79						3.474	(3-)			79
128BA 80				3.507	11-					80
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128BA 81		3.522	10+							81 2.4 PS 3

128BA 82						3.536				82
128BA 83						3.611	(3-)			83
128BA 84						3.683	(11-)		1.1 PS	4
128BA 85						3.985	(12-)			85
128BA 86		3.988	12+						0.58 PS	19
128BA 87		4.018	12+						0.70 PS	12
128BA 88		4.112	12+							88
128BA 89						4.116	(12)-		0.7 PS	3
128BA 90		4.195	12+							90
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128BA 91					4.218 13-					91
128BA 92						4.557	(13-)			92
128BA 93		4.646	14+						0.89 PS	18
128BA 94		4.651	12+							94
128BA 95		4.720	14+						0.44 PS	9
128BA 96						4.816	(14-)		0.23 PS	3
128BA 97						4.902	(13+)			97
128BA 98		4.956	13+						1.00 PS	9
128BA 99		5.036	14+							99
128BA 100						5.040	(14-)			100
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128BA 101					5.052 15-					101
128BA 102		5.233	14+						1.6 PS	3
128BA 103						5.384	(15+)			103
128BA 104		5.496	16+						0.46 PS	4
128BA 105						5.499	(15-)			105
128BA 106		5.530	15+						1.06 PS	15
128BA 107						5.551	(16+)			107
128BA 108						5.754	(16-)		0.27 PS	3
128BA 109		5.853	16+						0.68 PS	23
128BA 110					5.998 17-					110
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128BA 111						6.011	(16-)			111
128BA 112		6.215	17+						0.49 PS	6
128BA 113						6.240	(17+)			113
S-p = 6.418 ( 0.006)	-----									
128BA 114		6.436	18+						0.19 PS	4
128BA 115						6.493	(18+)			115
128BA 116		6.608	18+						0.34 PS	5
128BA 117						6.733	(18-)			117
128BA 118						6.994	(19-)			118
128BA 119		7.036	19+						0.21 PS	3
128BA 120						7.178	(19+)			120
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128BA 121		7.443	20+						0.16 PS	4
128BA 122		7.494	20+							122
128BA 123						7.530	(20+)			123
128BA 124						7.929	(21-)			124
128BA 125		7.981	21+							125
128BA 126						8.163	(21+)			126

128BA 127		8.485	22+					127
128BA 128		8.497	22+					128
128BA 129						8.659	(22+)	129
128BA 130						8.935	(23-)	130
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128BA 131		9.032	23+					131
128BA 132						9.168	(23+)	132
128BA 133						9.564	(24+)	133
128BA 134		9.601	24+					134
128BA 135						9.814	(24+)	135

S-p = 6.418 ( 0.006)-----  
 S-n = 10.623 ( 0.011)-----  
 S-2p = 10.801 ( 0.002)-----  
 S-2n = 18.842 ( 0.013)-----  
 S-alpha= 0.127 ( 0.002)-----

S+p = -3.243 ( 0.021)  
 S+n = -7.763 ( 0.011)  
 S+2p = -8.632 ( 0.028)  
 S+2n = -18.030 ( 0.002)  
 S+alpha = 0.476 ( 0.020)

gap p = 3.175 ( 0.022)  
 gap n = 2.860 ( 0.016)  
 gap 2p = 2.169 ( 0.028)  
 gap 2n = 0.812 ( 0.013)  
 gap alpha = 0.602 ( 0.021)