

Time	Coherence	Qubit	Material	Host	Date	Reference	Source	
57 s	$T_1$	LD/e	GaAs/AlGaAs	2D	2018-08	1	p3 and Fig. 4a	1
43 s	$T_1$	LD/i	Si:P	imp	2024-03	2	Tab. 2 and Fig. 4	2
30 s	$T_1$	LD/i	Si:P	imp	2017-03	3	Fig. 2b the lowest point	3
16 s	$T_1$	LD/i	Si:P	imp	2023-11	4	Tab. I	4
11 s <sup>a</sup>	$T_1$	LD/i	Si:P	imp	2023-02	5	p6	5
10 s	$T_1$	LD/e	GaAs/AlGaAs	2D	2017-10	6	Fig. 2 the lowest green point	6
9.8 s	$T_1$	LD/i	Si:P	imp	2019-05	7	Fig. 2c	7
9.3 s	$T_1$	LD/i	Si:P	imp	2018-03	8	p3 and Fig. 1f	8
9 s	$T_1$	LD/e	Si/SiO <sub>2</sub>	1D	2021-03	9	p3 and Fig. 3a the leftmost blue point	9
6.5 s	$T_1$	LD/i	<sup>28</sup> Si:P	imp	2023-02	10	Fig. 3c	10
6 s	$T_1$	LD/i	Si:P	imp	2010-09	11	p2	11
5 s <sup>b</sup>	$T_1$	LD/e	Si/SiGe	2D	2019-04	12	p4	12
4.2 s	$T_1$	LD/i	Si:P	imp	2019-01	13	p3	13
3.4 s	$T_1$	LD/i	<sup>28</sup> Si:P	imp	2021-01	14	p6 and SFig. 3c	14
3 s	$T_1$	LD/i	<sup>28</sup> Si:P	imp	2016-10	15	p3	15
3 s	$T_1$	ST/e	Si/SiGe	2D	2012-01	16	p4	16
2.8 s	$T_1$	LD/e	Si/SiGe	2D	2011-04	17	p3 and Fig. 3	17
2.6 s	$T_1$	LD/e	Si/SiO <sub>2</sub>	2D	2013-06	18	p3	18
1.8 s	$T_1$	LD/i	Si:P	imp	2013-06	19	Fig. 3	19
1.6 s	$T_1$	LD/e	<sup>28</sup> Si/SiO <sub>2</sub>	2D	2022-03	20	p4 and Fig. 3c	20
1.3 s	$T_1$	LD/i <sup>c</sup>	<sup>28</sup> Si:P	imp	2016-10	21	p4	21
1.3 s	$T_1$	LD/i	Si:P	imp	2018-11	22	p3 and Fig. 2b	22
1 s	$T_1$	LD/e	<sup>28</sup> Si/SiGe	2D	2020-03	23	p6 and Fig. 4a	23
1 s	$T_1$	LD/e	<sup>28</sup> Si/SiO <sub>2</sub>	2D	2018-10	24	p2	24
1 s	$T_1$	LD/e	GaAs/AlGaAs	2D	2008-01	25	p4 and Fig. 3c the leftmost blue point	25
0.7 s	$T_1$	LD/i	Si:P	imp	2012-09	26	p3	26
0.6 s <sup>d</sup>	$T_1$	LD/e	Si/SiGe	2D	2009-08	27	Fig. 5	27
0.5 s <sup>e</sup>	$T_1$	ST/e	<sup>28</sup> Si/SiO <sub>2</sub>	2D	2020-04	28	Fig. 4 the leftmost black point	28
0.35 s <sup>f</sup>	$T_1$	HY/e	BLG	2D	2024-01	29	Fig. 3b	29
0.17 s	$T_1$	LD/e	Si/SiGe	2D	2016-11	30	Fig. 6	30
0.16 s <sup>g</sup>	$T_1$	LD/e	Si/SiGe	2D	2019-04	12	Fig. 2	31
0.15 s <sup>h</sup>	$T_1$	LD/e	<sup>28</sup> Si/SiO <sub>2</sub>	2D	2018-08	31	p2 and p4	32
0.14 s	$T_1$	ST/e	Si/SiGe	2D	2012-04	32	Fig. 2d	33
0.13 s	$T_1$	LD/e	<sup>28</sup> Si/SiGe	2D	2019-11	33	p4	34
90 ms	$T_1$	LD/e	Si/SiO <sub>2</sub>	2D	2020-06	34	Fig. 1c	35
85 ms	$T_1$	LD/e	GaAs/AlGaAs	2D	2014-12	35	p2 and Fig. 3	36
50 ms	$T_1$	LD/e	Si/SiGe	2D	2018-02	36	p1 and ED Fig. 3b	37
40 ms	$T_1$	LD/e	Si/SiO <sub>2</sub>	2D	2010-03	37	p4 and Fig. 4 the leftmost red point	38
34 ms	$T_1$	ST/e	BLG	2D	2024-01	29	Fig. 3b	39
32 ms	$T_1$	LD/h	Ge/SiGe	2D	2020-08	38	p3	40
32 ms	$T_1$	LD/e	<sup>28</sup> Si/SiGe	2D	2022-12	39	p3	41
22 ms <sup>i</sup>	$T_1$	LD/e	Si/SiGe	2D	2022-08	40	p2 and ED Fig. 4b-d	42
20 ms	$T_1$	HY/e <sup>j</sup>	<sup>28</sup> Si/SiGe	2D	2022-03	41	p5	43
16 ms	$T_1$	LD/h	Ge/SiGe	2D	2021-03	42	Fig. S5 dot 3	44
15 ms <sup>k</sup>	$T_1$	ST/e	<sup>28</sup> Si/SiO <sub>2</sub>	2D	2020-04	28	Fig. 4 the rightmost black point	45
11 ms <sup>l</sup>	$T_1$	LD/e	<sup>28</sup> Si/SiO <sub>2</sub>	2D	2024-03	43	p3	46
10 ms	$T_1$	LD/e	Si/SiO <sub>2</sub>	1D	2022-03	44	p2 and Fig. 2a	47
8.4 ms	$T_1$	LD/h	BLG	2D	2022-05	45	p5 and Fig. 4	48
5 ms	$T_1$	LD/i	<sup>28</sup> Si:B	imp	2020-07	46	p3 and Fig. 3b	49
5 ms <sup>m</sup>	$T_1$	ST/e	<sup>28</sup> Si/SiO <sub>2</sub>	2D	2021-01	47	p4 and Fig. 1d	50

TABLE I-1. Spin coherence times (part 1). Superscripts stand for the following. <sup>a</sup>: Dot D3. <sup>b</sup>: No micromagnet. <sup>c</sup>: Qubit defined in the rotating frame. <sup>d</sup>: (*estimated*) Fig. 5 the lowest point. <sup>e</sup>: At 0.04 K. <sup>f</sup>: Valley degree of freedom. <sup>g</sup>: With micromagnet. <sup>h</sup>: At 0.1 K. <sup>i</sup>: The average over the three qubits. <sup>j</sup>: EO qubit. <sup>k</sup>: At 1.5 K. <sup>l</sup>: At 1 K. <sup>m</sup>: Lifetime of  $T_-$  state.

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