

Table SINV-52

USPTO utility patents granted in semiconductors, by region, country, or economy: 1998–2020

(Number)

Region, country, or economy	Economy by income status	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
World	na	5,734	7,178	8,559	10,171	10,563	10,658	10,780	9,329	10,037	9,562	9,209	10,350	14,133	14,396	13,842	15,796	17,833	18,350	18,945	19,053	17,413	18,569	18,632
North America	na	2,471	3,111	3,808	4,463	4,601	4,627	4,495	3,895	3,984	3,719	3,376	3,459	4,632	4,489	4,304	4,879	5,594	5,552	5,780	5,681	5,081	5,370	5,264
Canada	High	20	21	25	25	25	35	40	29	32	31	31	39	54	64	56	66	79	73	77	66	52	66	69
Mexico	Upper middle	0	0	0	1	1	0	0	2	0	1	2	0	0	1	2	0	1	1	0	1	0	2	3
United States	High	2,451	3,090	3,783	4,437	4,574	4,591	4,456	3,865	3,952	3,687	3,343	3,420	4,578	4,424	4,246	4,813	5,514	5,478	5,703	5,613	5,029	5,302	5,192
Central America and Caribbean	na	0	0	1	0	0	0	0	0	1	1	0	0	1	0	0	2	1	1	1	1	1	1	1
Puerto Rico	High	0	0	1	0	0	0	0	0	1	1	0	0	1	0	0	1	1	0	0	0	1	0	0
South America	na	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	1	1	1	2	1	3	4	4
Argentina	Upper middle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
Brazil	Upper middle	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	1	1	1	0	1	2	3	1
Europe	na	352	418	473	647	708	779	801	724	762	719	676	783	1,150	1,181	1,218	1,430	1,604	1,672	1,705	1,673	1,489	1,511	1,378
EU-27 + UK ^a	na	340	402	453	616	673	754	775	701	736	696	658	752	1,120	1,145	1,179	1,370	1,541	1,613	1,639	1,605	1,423	1,432	1,303
United Kingdom	High	27	27	36	47	62	76	85	67	62	65	62	78	86	83	81	104	94	118	96	96	86	95	97
EU-27 ^b	na	313	375	417	569	611	678	691	634	674	631	595	674	1,034	1,062	1,098	1,266	1,447	1,495	1,543	1,510	1,337	1,337	1,207
Austria	High	4	7	12	13	10	16	14	11	13	23	18	29	42	57	65	79	105	128	164	186	147	144	114
Belgium	High	2	7	11	19	19	37	35	22	29	23	31	39	62	56	64	70	69	83	108	102	88	98	99
Denmark	High	0	1	0	2	2	3	4	2	5	1	2	3	7	4	3	5	5	1	2	5	4	6	4
Finland	High	5	4	5	5	6	4	10	12	10	9	7	11	14	14	14	12	16	17	24	23	21	27	33
France	High	51	69	64	96	93	101	111	99	123	116	95	130	169	186	194	240	257	267	252	266	238	229	201
Germany	High	142	167	197	252	301	347	403	397	386	380	354	367	613	593	600	670	781	771	740	715	637	611	541
Hungary	High	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	1	0	1
Ireland	High	4	3	1	7	3	4	4	3	6	4	8	6	6	11	10	14	14	7	17	13	16	25	32
Italy	High	57	61	64	96	88	80	54	37	39	29	34	38	40	51	47	73	96	106	93	88	87	87	89
Netherlands	High	28	29	26	42	55	64	45	35	43	36	34	33	60	68	71	75	71	73	99	78	68	70	60
Spain	High	0	1	3	1	3	2	0	2	2	1	3	1	2	2	4	5	5	6	5	4	5	5	3
Sweden	High	21	26	35	33	28	20	8	14	14	7	9	13	12	16	17	15	22	25	24	17	15	20	12
Other Europe	na	12	16	20	32	35	25	25	23	26	23	18	31	31	36	39	60	63	59	66	68	66	79	74
Other Europe-2020 ^b	na	39	43	56	78	98	101	110	90	88	88	80	109	117	119	120	164	156	177	163	164	152	174	171
Belarus	Upper middle	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Moldova	Lower middle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Norway	High	0	0	0	0	2	0	4	2	2	2	1	1	1	2	1	3	8	4	4	3	4	7	4
Russia	Upper middle	4	3	6	10	6	3	2	3	3	2	3	2	3	4	4	3	6	3	4	5	3	4	3
Switzerland	High	8	12	12	20	26	20	20	17	20	18	14	27	26	29	32	53	47	47	53	57	55	65	62

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Ukraine	Lower middle	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	0	0
Asia	na	2,898	3,630	4,255	5,028	5,224	5,214	5,445	4,673	5,264	5,094	5,129	6,073	8,301	8,675	8,269	9,439	10,565	11,061	11,382	11,607	10,773	11,605	11,921
China	Upper middle	2	9	5	12	26	32	48	57	69	104	108	120	177	188	236	364	496	628	814	1,112	1,046	1,617	1,650
India	Lower middle	1	1	3	2	2	5	4	1	3	5	4	3	6	5	14	22	18	15	37	34	39	41	47
Japan	High	1,866	2,215	2,387	2,728	3,105	3,255	3,356	2,831	3,068	2,836	2,689	3,205	4,406	4,532	4,289	4,756	4,964	4,907	4,554	4,441	4,024	4,171	3,947
Malaysia	Upper middle	1	3	4	11	17	11	24	27	32	48	32	34	53	53	47	40	63	81	54	55	45	50	62
Singapore	High	30	40	70	128	169	148	135	103	122	118	102	103	201	246	252	269	275	255	248	236	209	195	150
South Korea	High	449	517	549	627	706	691	751	733	952	1,050	1,217	1,641	2,220	2,323	1,987	2,172	2,534	2,733	2,830	2,721	2,483	2,589	2,848
Taiwan	High	550	838	1,233	1,516	1,186	1,056	1,109	906	1,000	921	966	955	1,212	1,308	1,421	1,796	2,198	2,414	2,818	2,972	2,894	2,914	3,177
Middle East	na	10	13	16	30	24	27	26	24	17	22	20	22	29	23	35	33	46	44	56	69	51	54	54
Israel	High	10	13	16	30	23	26	25	22	17	21	19	22	29	20	31	29	44	37	46	60	37	37	39
Africa	na	0	1	2	0	1	1	1	0	0	0	1	1	2	2	0	3	7	3	4	3	1	2	2
South Africa	Upper middle	0	1	2	0	0	0	0	0	0	0	0	0	2	2	0	1	5	2	4	1	0	1	0
Australia and Oceania	na	3	4	3	2	5	9	12	11	9	8	8	12	16	23	16	9	14	15	15	17	13	20	8
Australia	High	2	4	2	2	3	8	11	11	9	8	8	11	16	23	15	8	12	15	15	16	13	17	8
New Zealand	High	1	0	1	0	1	1	1	0	0	0	0	1	0	0	1	1	2	1	0	1	1	3	1
Unclassified	na	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	2	3	1	3	1

na = not applicable, metric not calculated at this level.

EU = European Union; UK = United Kingdom; USPTO = U.S. Patent and Trademark Office.

^a The United Kingdom was a part of the EU for data purposes from 1973 to 2019.^b Beginning in 2020, the United Kingdom was no longer a member of the EU.**Note(s):**

USPTO patents are allocated according to patent inventorship information. USPTO patents are fractionally allocated among regions, countries, or economies based on the proportion of residences of all named inventors. Patents are classified under the World Intellectual Property Organization (WIPO) classification of patents, which classifies International Patent Classification (IPC) codes under 35 technical fields. IPC reformed codes take into account changes that were made to the WIPO classification in 2006 under the eighth version of the classification and were used to prepare these data. However, because PatentsView only provides the original IPC codes as they appeared on patents and not the IPC reformed codes, current Cooperative Patent Classification codes on patents were converted back to the most recent IPC classification to prepare these statistics. Fractional counts of patents were assigned to each technological field on patents to assign the proper weight of a patent to the corresponding technological fields under the classification. China includes Hong Kong.

Source(s):

National Center for Science and Engineering Statistics; Science-Metrix; PatentsView, USPTO, accessed June 2021.

Science and Engineering Indicators