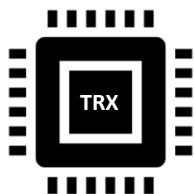


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April 14, 2020

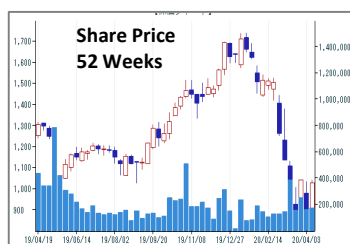
Sessa Investment Research

3Q Follow-up



Key Indicators

Share price (4/14)	1,045
YH (20/1/14)	1,743
YL (20/3/13)	855
10YH (14/11/6)	3,187
10YL (14/5/20)	726
Mkt cap (¥ bn)	11.8
Shares out. (mn)	11.55
Equity ratio (Dec 31)	71.40%
Treas. shrs (Dec 31)	5.30%
Net cash / mkt cap	29.10%
FY3/19 P/E (CE)	11.1x
FY3/19 P/B (act)	0.60x
FY3/19 ROE (act)	6.20%
FY3/19 DY (act)	3.64%



Source: SPEEDA

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Some underlying strengths despite the challenging external environment: Torex parent achieved 3Q-only sales up YoY

SUMMARY

- 9-months cumulative (Apr-Dec) 3Q FY3/20 results announced 2/13 were sales ¥15.9bn (-14.1% YoY) and OP ¥534mn (-67.8% YoY). Even before the emergence of the coronavirus pandemic, the ongoing US-China trade dispute damaged global trade volumes, affecting not only shipments of general-purpose consumer electronics, but also sharply slowing demand for industrial equipment, one of the company's focus growth applications.
- At the same time, parent Torex posted 2Q and 3Q automotive equipment sales growth of +60.2% and +26.2%, respectively, despite the challenging external environment, achieving YoY sales growth overall in the 3Q. Torex attributed this to brisk demand from drive recorders in Japan, as well as China's initiative to promote nationwide adoption of electronic toll collection (ETC) to alleviate highway congestion. The key takeaway from both is that Torex is well-connected in the supply chain and can grow orders as a specialist niche supplier even in a tough economy.
- One mitigating factor for 4Q OP is the buffer from actual depreciation likely to come in below initial plan, as has been the case in FY3/18 and FY3/19. Nevertheless, 4Q implied guidance requires sales to increase +13.4% YoY, and OP to increase +53.7% QoQ sequentially, which are extremely high hurdles. At the very least, coronavirus will likely have some negative impact on supply chains in the near term.
- However, there are some positive indicators going into next term. The table on the top of p8 shows the WSTS has raised its 2020 forecast for analog ICs from +3.7% in August to +5.3% in November. IoT, 5G and the electrification of cars will drive high growth over the next 3-5 years. In addition, the company expects the Kagoshima Plant to break even in 4Q this term, and for it to make a positive earnings contribution in FY3/21 on rising utilization rates from new North American orders.
- One of the drivers of solid performance by Torex the parent has been timely and active new product launches. Three key new products launched in the 2H, which will support growth in FY3/21, include: 1) world's smallest automotive power management IC, which reduces power consumption and mounting area by half, and heat generated by two-thirds, 2) power management IC for optical communications, targeting data center applications, which reduces mounting area by 78% due to its integrated coil design, and 3) a voltage-switchable power management IC, targeting IoT devices, which can extend battery life of the device up to 1.7x, by switching to low-level voltage in MPU sleep mode.

This report was prepared by Sessa Partners on behalf of Torex Semiconductor Ltd. Please refer to the legal disclaimer at the end for details.

Torex Semiconductor Quarterly Consolidated Results and Implied 4Q 3/20 Company estimates

JPY million, %	1Q 3/18	2Q 3/18	3Q 3/18	4Q 3/18	1Q 3/19	2Q 3/19	3Q 3/19	4Q 3/19	1Q 3/20	2Q 3/20	3Q 3/20	4Q 3/20
	act	act	act	act	act	act	act	act	act	act	act	CE
Net sales	5,714	6,095	6,036	6,152	6,203	6,266	6,074	5,353	4,797	5,534	5,599	6,070
YoY	9.3	19.8	10.3	6.6	8.6	2.8	0.6	(13.0)	(22.7)	(11.7)	(7.8)	13.4
▪ Phenitec contrib.	3,239	3,514	3,488	3,587	3,727	3,539	3,642	2,884	2,595	2,885	3,035	
YoY	28.2	30.1	17.0	13.2	15.1	0.7	4.4	(19.6)	(30.4)	(18.5)	(16.7)	
▪ Torex	2,474	2,581	2,549	2,564	2,476	2,727	2,432	2,469	2,202	2,649	2,563	
YoY	(8.4)	8.3	2.2	(1.5)	0.1	5.7	(4.6)	(3.7)	(11.1)	(2.9)	5.4	
COS	4,026	4,215	4,224	4,355	4,282	4,374	4,545	4,202	3,528	4,112	4,153	
Ratio to sales	70.5	69.2	70.0	70.8	69.0	69.8	74.8	78.5	73.5	74.3	74.2	
Gross profit	1,687	1,880	1,812	1,797	1,921	1,892	1,529	1,151	1,269	1,422	1,446	
GPM	29.5	30.8	30.0	29.2	31.0	30.2	25.2	21.5	26.5	25.7	25.8	
SG&A expenses	1,232	1,245	1,263	1,224	1,246	1,216	1,218	1,263	1,191	1,170	1,241	
Ratio to sales	21.6	20.4	20.9	19.9	20.1	19.4	20.1	23.6	24.8	21.1	22.2	
Depreciation	221	228	231	254	195	239	300	351	305	316	335	576?
EBITDA	676	863	781	826	870	915	611	239	384	568	540	891
Ratio to sales	11.8	14.2	12.9	13.4	14.0	14.6	10.1	4.5	8.0	10.3	9.6	14.7
Operating profit	455	635	550	572	675	676	311	(112)	79	252	205	315
YoY	123.1	246.6	14.3	49.4	48.3	6.5	(43.4)	TR	(88.4)	(62.8)	(34.2)	TB
OPM	8.0	10.4	9.1	9.3	10.9	10.8	5.1	(2.1)	1.6	4.5	3.7	5.2
▪ Phenitec contrib.	303	514	345	417	487	413	186	(182)	59	4	78	
YoY	TB	85.7x	49.4	10.3	60.7	(19.6)	(46.1)	TR	(87.9)	(99.0)	(58.1)	
OPM	9.4	14.6	9.9	11.6	13.1	11.7	5.1	(6.3)	2.3	0.1	2.6	
▪ Torex	152	121	205	155	188	263	125	70	19	248	126	
YoY	(38.7)	(31.6)	(17.7)	25.8x	23.7	117.4	(39.0)	(54.8)	(89.9)	(5.7)	0.8	
OPM	6.1	4.7	8.0	6.0	7.6	9.6	5.1	2.8	0.9	9.4	4.9	
Ordinary profit	466	641	606	285	924	819	227	(149)	11	267	240	281
Profit before inc taxes	481	608	606	276	923	812	220	(150)	10	222	193	
Profit ATOP	234	267	293	108	496	469	123	(39)	12	146	133	259

Source: compiled by Sessa Partners from TANSBIN financial statements and results briefing presentations.

Despite stiff headwinds from the external environment, Torex parent 3Q-only sales achieved YoY gains

Overview of 3Q FY3/20 Results

9-months cumulative (Apr-Dec) 3Q FY3/20 results announced 2/13 were sales ¥15.9bn (-14.1% YoY) and OP ¥534mn (-67.8% YoY). The single biggest factor behind the harsh environment this term has been the ongoing US-China trade war damaging global trading volumes. The table on the top of p4 showing quarterly sales trends for Torex and Phenitec by applications highlights the sharp decline for both in one of the focus growth sectors, industrial equipment, with Phenitec particularly hard hit with 40–50% declines. The issue for profits is the sharp increase in depreciation associated with the large-scale integration of the Head Office Plant and Daiichi (No.1) plant. At the same time, Torex the parent managed to achieve YoY growth in 3Q-only sales. The key takeaway from the bar chart on p3 is that the level of sales for Torex has held up remarkably well in spite of the challenging environment.

Small OP buffer from actual depreciation below initial CE

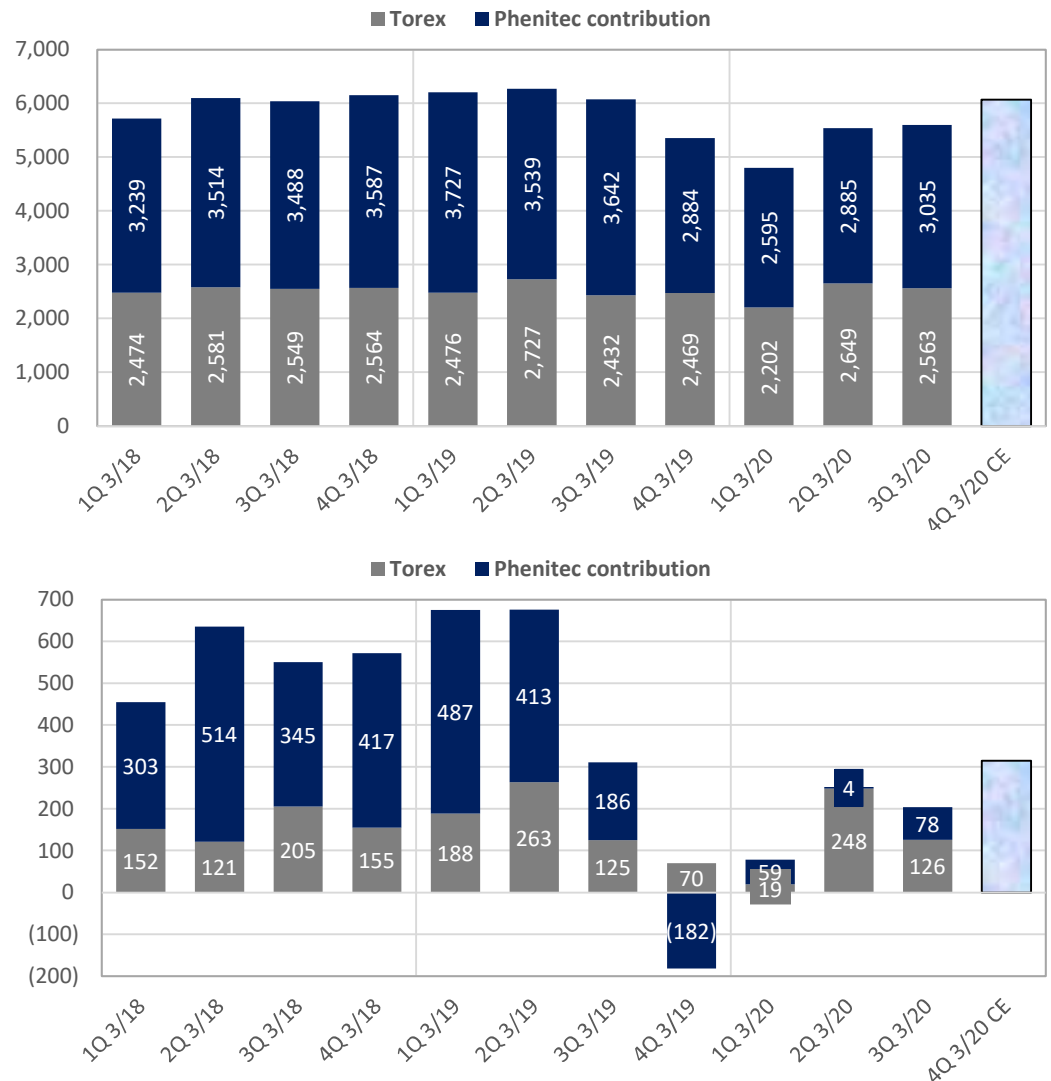
JPY mn, %	Capex	YoY	versus init CE	Depreciation	YoY	versus init CE
FY3/17 act	988	—		1,219	—	
FY3/18 init CE	1,257	27.2		1,131	(7.2)	
FY3/18 act	1,149	16.3	(108)	934	(23.4)	(197)
FY3/19 init CE	3,679	220.2		1,409	50.9	
FY3/19 act	3,323	189.2	(356)	1,085	16.2	(324)
FY3/20 init CE	1,651	(50.3)		1,532	41.2	
FY3/20 act			(??)			(??)

Source: compiled by Sessa Partners from results briefing materials



Torex parent sales are remarkably steady in the current macro downturn.

Quarterly Trend of Consolidated Sales (upper) and OP (lower), JPY mn



Source: compiled by Sessa Partners from results briefing materials

Solid performance by Torex can basically be attributed to timely and aggressive new product launches, as well as the sharp pickup in automotive demand. According to the company, this was driven by demand from drive recorders in Japan, as well as China’s initiative to promote nationwide adoption of electronic toll collection (ETC) to alleviate highway congestion. The key takeaway from both is that Torex is well-connected in the supply chain and can grow orders as a specialist niche supplier even in a tough economy. We examine both of these trends next. Key new product launches in the 2H, which will drive growth in FY3/21, are presented on pp 9–10 at the end.

Even before coronavirus, 4Q implied sales and OP guidance faced high hurdles for achievement

Even before coronavirus emerged as a global pandemic, 4Q implied guidance presented high hurdles for achievement, requiring 4Q sales to increase +13.4% YoY, and OP to increase +53.7% QoQ sequentially. One mitigating factor for 4Q OP as shown in the table on the bottom of p2 is the buffer from actual depreciation likely to come in below initial plan, as has been the case in FY3/18 and FY3/19. It remains to be seen whether the Kagoshima Plant will breakeven during 4Q, but the company is confident that it will make a positive contribution from FY3/21.

Torex and Phenitec Sales Trends by Application

JPY mn, %	FY3/18	FY3/19	1Q3/19	2Q 3/19	3Q 3/19	4Q 3/19	1Q 3/20	2Q 3/20	3Q 3/20
Torex sales	10,168	10,104	2,476	2,727	2,432	2,469	2,202	2,649	2,563
IND (Industrial)	3,728	3,927	966	1,063	945	953	784	912	933
CAR (Automotive)	1,708	1,535	381	384	362	408	350	615	457
MED (Medical)	108	125	36	26	26	37	25	21	29
WEA (Wearable)	233	238	71	74	37	56	53	66	54
Other	4,391	4,279	1,022	1,180	1,062	1,015	990	1,035	1,090
Torex sales YoY	(0.1)	(0.6)	0.1	5.7	(4.6)	(3.7)	(11.1)	(2.9)	5.4
IND YoY	8.2	5.3	9.8	14.3	(0.1)	(2.0)	(18.8)	(14.2)	(1.3)
CAR YoY	6.2	(10.1)	(3.5)	(3.3)	(18.1)	(13.9)	(8.1)	60.2	26.2
MED YoY	0.9	15.7	80.0	(13.3)	(23.5)	54.2	(30.6)	(19.2)	11.5
WEA YoY	18.3	2.1	10.9	19.4	(31.5)	5.7	(25.4)	(10.8)	45.9
Other YoY	(9.0)	(2.6)	(8.3)	1.5	(1.0)	(2.5)	(3.1)	(12.3)	2.6
IND + CAR wgt.	53.5%	54.1%	54.4%	53.1%	53.7%	55.1%	51.5%	57.6%	54.2%

JPY mn, %	FY3/18	FY3/19	1Q3/19	2Q 3/19	3Q 3/19	4Q 3/19	1Q 3/20	2Q 3/20	3Q 3/20
Phenitec sales*	15,364	15,452	4,136	3,973	4,075	3,268	2,983	3,251	3,435
IND (Industrial)	3,394	3,262	759	705	1,100	698	408	412	493
CAR (Automotive)	3,088	3,560	908	873	923	856	876	921	892
MED (Medical)	357	390	98	63	145	84	70	48	54
Other	8,525	8,240	2,371	2,332	1,907	1,630	1,629	1,870	1,996
Phenitec sales YoY	19.6	0.6	14.9	1.3	5.1	(17.6)	(27.9)	(18.2)	(15.7)
IND YoY	35.2	(3.9)	(15.3)	(8.7)	29.4	(20.3)	(46.2)	(41.6)	(55.2)
CAR YoY	(3.2)	15.3	49.1	11.6	9.8	0.0	(3.5)	5.5	(3.4)
MED YoY	8.2	9.2	22.5	(52.6)	70.6	42.4	(28.6)	(23.8)	(62.8)
Other YoY	25.0	(3.3)	17.7	4.4	(9.3)	(25.0)	(31.3)	(19.8)	4.7
IND + CAR wgt.	42.2%	44.1%	40.3%	39.7%	49.6%	47.6%	43.0%	41.0%	40.3%

*Note: Phenitec sales include intra-company transactions with Torex. Classifications subject to change.

Torex 'Design-in' Sales and Phenitec Regional Sales

JPY mn, %	FY3/18	FY3/19	1Q3/19	2Q 3/19	3Q 3/19	4Q 3/19	1Q 3/20	2Q 3/20	3Q 3/20
Torex D-in* sales	10,168	10,104	2,476	2,727	2,432	2,469	2,202	2,649	2,563
Japan	4,296	4,401	1,086	1,159	1,070	1,086	950	1,090	1,104
Asia	3,329	3,312	791	896	818	807	724	1,001	980
Europe	1,491	1,430	345	402	304	379	305	329	268
N America	1,052	961	254	270	240	197	223	229	211
Torex D-in* YoY	(0.1)	(0.6)	0.1	5.7	(4.6)	(3.7)	(11.1)	(2.9)	5.4
Japan YoY	(4.3)	2.4	8.8	6.5	0.4	(5.1)	(12.5)	(6.0)	3.2
Asia YoY	4.1	(0.5)	(0.3)	13.0	(8.7)	(4.7)	(8.5)	11.7	19.8
Europe YoY	1.4	(4.1)	(19.0)	0.5	(7.9)	13.1	(11.6)	(18.2)	(11.8)
N America YoY	2.9	(8.7)	(1.2)	(10.0)	(6.6)	(17.2)	(12.2)	(15.2)	(12.1)

JPY mn, %	FY3/18	FY3/19	1Q3/19	2Q 3/19	3Q 3/19	4Q 3/19	1Q 3/20	2Q 3/20	3Q 3/20
Phenitec** sales	15,364	15,452	4,136	3,973	4,075	3,268	2,983	3,251	3,435
Japan	5,010	5,529	1,479	1,362	1,356	1,332	1,346	1,410	1,427
Asia	3,709	3,306	1,019	1,070	750	467	495	661	803
Europe	765	789	198	182	204	205	199	224	261
N America	5,880	5,828	1,440	1,359	1,765	1,264	943	956	944
Phenitec** YoY	19.6	0.6	14.9	1.3	5.1	(17.6)	(27.9)	(18.2)	(15.7)
Japan YoY	6.8	10.4	27.5	5.6	8.2	1.9	(9.0)	3.5	5.2
Asia YoY	18.1	(10.9)	25.0	17.8	(23.9)	(53.3)	(51.4)	(38.2)	7.1
Europe YoY	21.4	3.1	8.8	(20.9)	7.4	25.8	0.5	23.1	27.9
N America YoY	33.9	(0.9)	(0.1)	(9.0)	21.7	(15.5)	(34.5)	(29.7)	(46.5)

*Note: Torex 'Design-in' based sales = regional sales adjusted on orders received basis

**Note: Phenitec sales include intra-company transactions with Torex. Classifications subject to change.

China ETC (electronic toll collection)

According to Xinhua News Agency, China’s Ministry of Transport submitted plans in Mar-2019 to eliminate all manned highway toll booths within 2 years, replacing them with electronic toll collection (ETC) gantry systems to improve traffic efficiency by mitigating traffic jams, reducing fuel consumption costs and exhaust emissions. After conducting a pilot program in 2018 closing 15 toll booths on 2 provincial borders, the State Council is phasing out most toll booths on provincial borders by the end of 2019. In order to promote rapid adoption of this system, the government is fully subsidizing the in-vehicle devices in automobiles and their installation free of charge. From July 1, the government also implemented a policy of offering a discount of 5% on highway tolls for ETC users, and it is enabling the use of mobile pay at remaining manned toll booths.

As can be seen from the graph below, as of the end of Mar-2019, there were 80.7mn ETC users out of the total roughly 240mn registered passenger vehicles, or roughly one-third. The government set a target of 180mn users by the end of 2019, with ETC-only lanes at least 70% by the end of October for large and medium cities, new towns and near scenic spots. It also targets raising the use of ETC on highways from 45% at the end of March to over 90% by the end of 2019. The China Daily reported the number of ETC users topped 100mn by early August, with in-vehicle device installations running at a pace of 580,000 per day. The pace steadily accelerated this autumn, and the China Daily reported the number of users reached 197.0mn by December 28, exceeding its year end target.

ETC lane: no waiting at a toll-gate in Changzhou, Jiangsu Province



Source: China Daily

China exceeds 2019 year-end target of 180mn ETC users nationwide (mn units)



Source: China Daily (Xinhua News), China Ministry of Transport, Dept. of Road Transportation

Torex says that it does not have visibility on how long this ‘special demand’ will continue. However, NIKKEI Asian Review reported that Shenzhen Genvict Technologies, a major ETC device maker that manufactures 5mn in-vehicle devices annually, is hiking capacity with a new plant coming online at the end of 2019. What this does highlight is a clear example of just how well Torex is connected into the industry supply chain for automotive electronic equipment, with strengths in car navigation and infotainment systems, and supports to a certain extent the company’s view that it can achieve order growth as a small niche provider of power management ICs even in a harsh external environment.

Japan Drive Recorders

Over the last decade, even as highway traffic fatalities peaked at the end of the nineties, the increase in traffic accidents caused by tailgating/aggressive behavior/road rage has become a social problem in Japan, and one solution developed by the car electronics industry is video drive recorder systems that capture traffic incidents on video, which can later be used as evidence in a potential legal dispute. Ongoing technical innovation and increasing accuracy and reliability of the systems has put drive recorders on a growth path toward widespread diffusion similar to that of car navigation systems as highly desired functionality. A number of auto insurance companies plan to offer new corporate and personal policies from 2020 for vehicles with drive recorders installed.

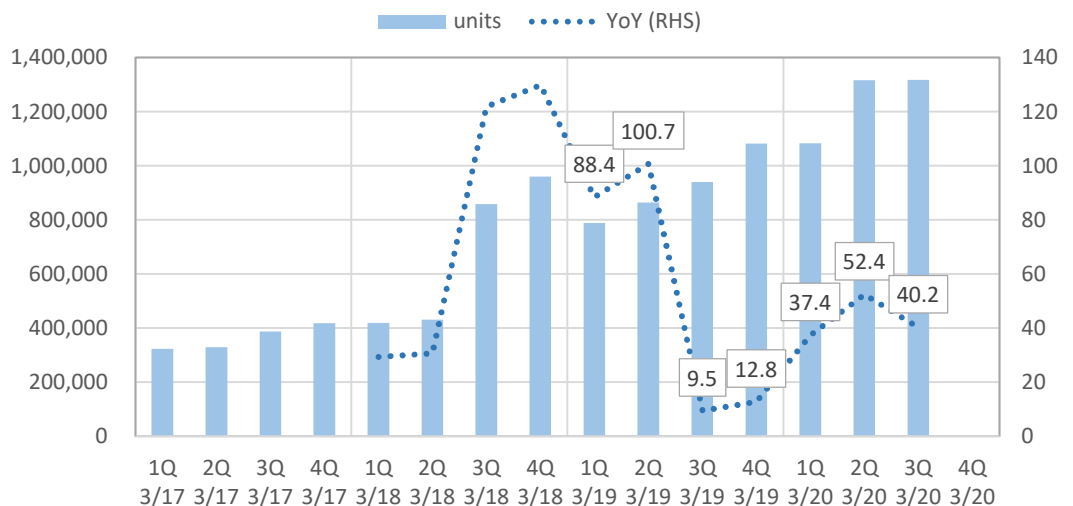
The graph below with data provided by JEITA and JDRC shows the quarterly trend of domestic shipments of drive recorders. During the 2Q of FY3/20 (Jul-Sep), shipments topped 1.3mn units, +52.4% YoY, an increase of 452k units YoY, and an increase of 233k units QoQ. Unlike China ETC which has an aspect of special demand associated with government policy and will likely recede over time, diffusion of drive recorders is being driven by technical innovation, and it is expected to continue over the medium-term. This is just another example which highlights the increased number of cameras and sensors being installed in automobiles, and the strong position of Torex in the industry supply chain for automotive electronics products, with growing demand for power management ICs for related microcontroller unit modules. It is another example of how Torex can achieve growth as a small niche provider of power management ICs even in a harsh external environment.

Full LCD display rear view mirror-type drive recorder DR (front and rear recording, 2 cameras)



Source: MAXWIN (Osaka-based car electronics products dealer) home page

Quarterly Trend of Drive Recorder (DR) Unit Shipments in Japan



Source: Japan Electronics and Information Technology Industries Association (JEITA), Japan Drive-Recorder Consortium (JDRC)

Risks to implied 4Q guidance, some positive indicators going into FY3/21

4Q implied guidance targets net sales of ¥6,070mn, +13.4% YoY, and OP of ¥315mn, +53.7% QoQ. There are 3 risks to this forecast: 1) reactionary decline in Japan demand following Oct. 1 consumption tax hike, 2) ongoing decline in overseas demand, with Japan exports to the US down double-digits for 3 consecutive months, in addition to China exports down since Dec-2018, and 3) coronavirus disrupting global supply chains, further pushing back the recovery.

JEITA data below highlights the general effect of the consumption tax hike on consumer electronics products including automotive electronics. There was some frontloading ahead of the sales tax hike from 8% → 10% on Oct. 1 in the Jul-Sep 2Q, followed by a reactionary decline in the Oct-Dec 3Q. Export data in the lower table shows that the US-China trade war has yet to be resolved, and Japan exports to its two largest trading partners are still declining. There is no way to reasonably estimate the impact of the coronavirus on global supply chains, but clearly some negative impact is likely in the short term.

On the positive side, the WSTS World Semiconductor Market forecast was revised up for both 2019 and 2020 in November. Market consensus is growing that the once in a decade major correction in memory has run its course, expected to recover from 2H of this year. More importantly for Torex, the outlook for analog was also revised up.

JEITA Japan Domestic Monthly Shipment Statistics for Consumer Electronics



JPY bn, %, thousand units	2019.01	2019.02	2019.03	2019.04	2019.05	2019.06	2019.07	2019.08	2019.09	2019.10	2019.11	2019.12	2020.01
[Value]													
Consumer electronics total (¥ bn)	95.5	106.5	127.2	96.4	94.5	116.4	118.2	109.1	122.9	99.5	113.0	134.7	94.6
% YoY	1.2	(5.0)	(4.9)	(2.1)	(5.6)	(3.8)	11.4	18.5	14.9	(6.3)	(2.6)	(7.3)	(0.9)
Car AVC* equipment (¥ bn)	47.2	53.2	57.9	46.6	46.0	49.1	53.7	45.0	54.5	46.5	44.5	41.7	44.1
% YoY	4.1	0.5	(6.6)	0.5	9.8	2.4	9.0	5.7	8.6	(8.2)	(9.3)	(11.6)	(6.4)
% total	49.4%	50.0%	45.5%	48.3%	48.7%	42.2%	45.4%	41.2%	44.3%	46.7%	39.4%	31.0%	46.6%
[Quantity]													
Car navigation systems (000)	479	548	610	496	490	530	539	462	563	450	456	420	451
% YoY	2.8	2.2	(3.6)	5.3	14.8	0.6	5.2	2.1	(1.7)	(17.3)	(10.7)	(15.0)	(5.9)
Car AV main unit (000)	210	228	234	220	213	212	257	197	240	247	234	213	239
% YoY	18.6	14.6	4.6	15.1	23.4	7.2	24.1	10.9	29.9	19.7	10.7	4.3	14.2
ETC in-vehicle unit (000)	259	300	344	275	267	302	290	253	304	248	244	232	207
% YoY	(3.7)	(0.1)	(1.0)	(2.3)	3.7	5.6	1.9	5.6	9.0	(10.4)	(12.4)	(8.4)	(20.0)
ETC 2.0 (DSRC) in-vehicle unit (000)	68	77	99	69	60	90	105	95	98	76	76	75	91
% YoY	14.1	9.3	17.5	13.2	18.3	38.4	70.6	68.0	34.6	1.1	5.5	4.2	34.6

Source: Japan Electronics and Information Technology Industries Association (JEITA). *AVC = audio, video, communications

MOF Japan Trade Statistics: Exports by Destination Country / Region

JPY bn, %	TOTAL	YoY	P.R.C.	YoY	USA	YoY	ASEAN	YoY	EU	YoY
2018.07	6,748	3.9	1,355	11.9	1,251	(5.2)	1,080	7.9	767	6.4
2018.08	6,688	6.5	1,365	12.0	1,245	5.2	1,037	4.7	719	7.0
2018.09	6,717	(1.4)	1,262	(1.7)	1,290	(0.6)	1,062	4.3	732	(4.5)
2018.10	7,243	8.2	1,476	9.0	1,430	11.6	1,114	8.7	811	7.7
2018.11	6,927	0.1	1,384	0.3	1,391	1.6	1,102	1.4	745	3.8
2018.12	7,022	(3.9)	1,402	(7.0)	1,425	1.6	1,088	(1.5)	823	3.9
2019.01	5,574	(8.4)	958	(17.4)	1,140	6.9	857	(7.3)	699	(2.5)
2019.02	6,385	(1.2)	1,140	5.6	1,303	2.0	936	(5.9)	801	2.5
2019.03	7,202	(2.4)	1,305	(9.4)	1,416	4.4	1,075	(5.6)	862	7.3
2019.04	6,659	(2.4)	1,233	(6.3)	1,410	9.6	1,018	0.5	798	(2.6)
2019.05	5,835	(7.8)	1,148	(9.7)	1,188	3.3	821	(17.4)	648	(7.1)
2019.06	6,586	(6.6)	1,246	(10.1)	1,357	4.9	1,012	(6.7)	740	(6.7)
2019.07	6,643	(1.5)	1,229	(9.3)	1,356	8.4	977	(9.5)	784	2.2
2019.08	6,141	(8.2)	1,200	(12.1)	1,190	(4.4)	934	(9.9)	709	(1.3)
2019.09	6,368	(5.2)	1,177	(6.2)	1,187	(7.9)	989	(6.9)	729	(0.5)
2019.10	6,576	(9.2)	1,322	(10.4)	1,268	(11.4)	990	(11.2)	743	(8.4)
2019.11	6,379	(7.9)	1,310	(5.4)	1,212	(12.9)	998	(9.4)	686	(8.0)
2019.12	6,576	(6.3)	1,413	0.8	1,221	(14.9)	971	(10.8)	757	(8.1)
2020.01	5,431	(2.6)	897	(6.4)	1,052	(7.7)	836	(2.5)	686	(1.7)

Source: Ministry of Finance Customs and Tariff Bureau

WSTS Semiconductor Market Forecast Fall 2019

USD mn, %	CY2017		CY2018		Nov-2018E	Feb-2019E	May-2019E		Aug-2019E		Nov-2019E	
					CY2019	CY2019	2019	2020	2019	2020	2019	2020
[by region]												
Americas	88,494	102,997	35.0	16.4	1.4	(5.8)	(23.6)	7.4	(27.3)	5.4	(26.7)	7.0
Europe	38,311	42,957	17.1	12.1	1.9	(0.3)	(3.1)	4.7	(6.1)	3.1	(6.9)	2.3
Japan	36,595	39,961	13.3	9.2	2.5	1.0	(9.7)	3.9	(9.7)	4.0	(11.1)	3.1
Asia-Pacific	248,821	282,863	19.4	13.7	3.1	(3.0)	(9.6)	5.1	(9.8)	5.0	(8.8)	6.5
WORLDWIDE	412,221	468,778	21.6	13.7	2.6	(3.0)	(12.1)	5.4	(13.3)	4.8	(12.8)	5.9
[by product]												
Discrete	21,651	24,102	11.5	11.3	3.9	2.8	1.4	5.1	0.1	4.7	(0.6)	3.8
Optoelectronics	34,813	38,032	8.8	9.2	6.8	1.5	(1.5)	5.9	4.8	8.2	7.9	12.5
Sensors	12,571	13,356	16.2	6.2	5.1	4.1	(0.5)	4.5	0.6	4.8	2.0	5.4
Integrated circuits	343,186	393,288	24.0	14.6	2.0	(4.1)	(14.3)	5.4	(16.3)	4.4	(16.0)	5.2
Analog	53,070	58,785	10.9	10.8	3.8	3.9	(5.0)	5.0	(8.8)	3.7	(7.9)	5.3
Micro	63,934	67,233	5.5	5.2	3.0	1.9	(1.1)	4.0	(5.6)	2.3	(2.3)	4.9
Logic	102,209	109,303	11.7	6.9	3.8	2.6	(4.0)	5.3	(5.8)	4.9	(4.3)	6.5
Memory	123,974	157,967	61.5	27.4	(0.3)	(14.2)	(30.6)	6.6	(31.0)	5.5	(33.0)	4.1
TOTAL PRODUCTS	412,221	468,778	21.6	13.7	2.6	(3.0)	(12.1)	5.4	(13.3)	4.8	(12.8)	5.9

Source: World Semiconductor Trade Statistics (WSTS)

High net cash allows 1H 5.2% share buyback, dividend hike AND debt repayment

A notable feature on the 1H B/S was cash and deposits declining from ¥10,982mn on Mar. 31 → ¥9,139mn on Sep. 30, a decrease of ¥1,843mn (-16.8%). However, from the CF/S, uses of cash included: 1) ¥599mn for purchase of treasury shares, 2) ¥552mn for repayment of loans, and 3) ¥229mn for dividends paid. As a result, the company still has net cash of ¥5,020mn, equivalent to 26.4% of shareholders' equity, all while conducting a 5.2% share buyback, boosting the interim dividend from ¥18 → ¥20, paying down debt, and progressing with large-scale capex, no small achievement. Even as the harsh external environment persists through the 4Q, the company is well-positioned to weather the downturn with its high net cash balance and strong B/S. Actual cash burn stripping out shareholder rebates and loan repayment is therefore relatively small.

Net cash worksheet

JPY mn, %	2019.3.31	2019.9.30	AMT CHG	PCT CHG
Cash and deposits [A]	10,982	9,139	(1,843)	(16.8)
ST loans	1,903	1,903	(0)	(0.0)
LT less than 1 year	1,021	819	(202)	(19.8)
LT loans	1,748	1,398	(350)	(20.0)
Total Int. bearing debt [B]	4,671	4,119	(552)	(11.8)
Net cash [A – B]	6,311	5,020	(1,291)	(20.5)
Shareholders' equity	19,671	19,013	(659)	(3.3)
Net cash as % of SE	32.1%	26.4%	—	—

Selected uses of cash (CFF)

JPY mn	1H 3/19	1H 3/20
Share buybacks	—	(599)
Dividends paid	(195)	(229)
Divs paid to minority int.	(49)	—
Loans repaid	(624)	(552)
TOTAL	(868)	(1,380)

Source: 2Q TANSIN financial statements



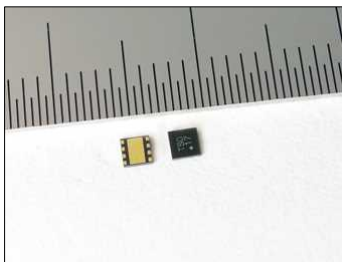
Torex significant new product launches in the 2H

January 15, 2020, NIKKEI Shimbun.

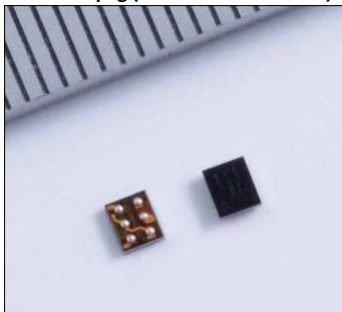
Development of power management IC that can switch voltage, targeting IoT devices

- Ultra-Low Quiescent Current, Output Voltage Selectable Function, Expanded Lineup of Step-Down DC/DC Converters XC9276 Series. Torex has developed the "XC9276" series of ultra-low power consumption power management ICs with a function to switch output voltages, and it has just started mass production. Under certain conditions, the battery life of the device can be extended up to 1.7 times that of current products. This is aimed at capturing demand for IoT terminals that connect everything to the Internet.
- IoT terminals are often used to operate devices at regular intervals. Switching the voltage in accordance with the operation of the microcomputer that controls the device can reduce power consumption. The output voltage can be adjusted between 1.8V and 3.6V in two values.
- The mounting area, including coils, has been reduced by 40% compared to current products. Sample price is 300 yen per item (excluding tax). Torex aims to ship 5 million units annually.

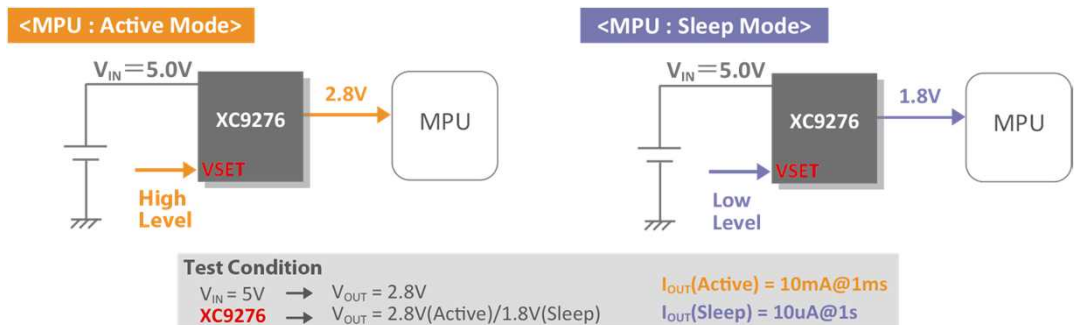
XC9276 Series
USP-8B06 pkg (2.0 x 2.0 x 0.33mm)



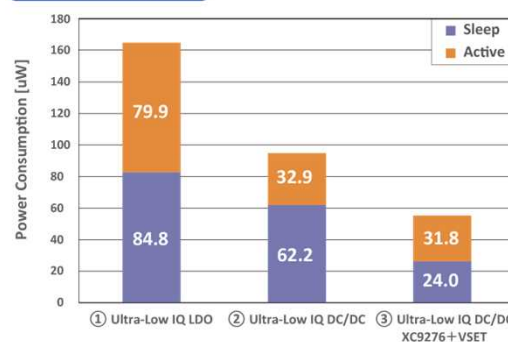
WLP-6-03 pkg (1.72 x 1.07 x 0.33mm)



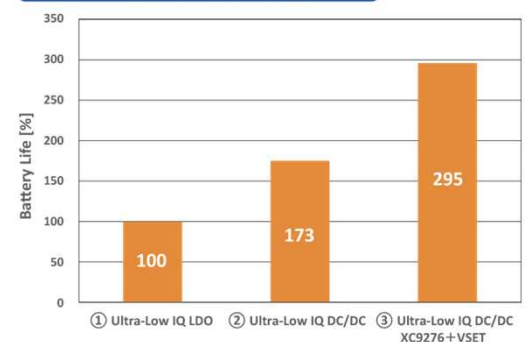
Loss Due to Switching of Output Voltage / Battery Life



Loss on Active / Sleep



Battery Life(Comparison when ① is 100)



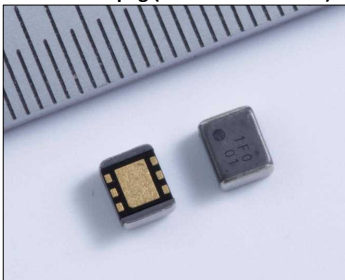
Source: Torex Semiconductor website, article by NIKKEI Shimbun

November 21, 2019, NIKKEI Shimbun

Torex develops power management IC for optical communications, targeting data centers

- Inductor Built-in Negative Output Voltage Expanded Lineup of “micro DC/DC” Converters XCL303/XCL304 Series. Torex has developed the XCL303 and 304 series power management ICs with integrated coils that output negative voltage. The capacitors and other components have also been reduced in size, and the mounting area has been reduced to just over 14 sq. mm, reduced by 78% of that of existing products that do not have integrated coils. It aims for use in optical communication transceivers that convert electrical signals into optical signals.
- The switching method keeps the output voltage constant even when the input voltage fluctuates. Sample shipments have started for some customers and will be officially released on the 21st. Sample price is 300 yen per item (excluding tax). Demand for optical communication transceivers for communication between data centers is expected for compact products that support high-speed communication of 100 gigabits per second or more.

XCL303/XCL304 Series
CL-2025-02 pkg (2.0 x 2.5 x 1.04mm)



Mounting Area of XCL303/XCL304 Series



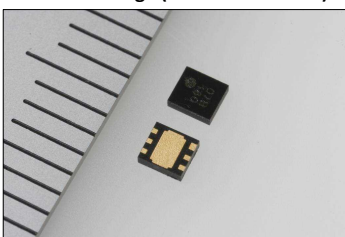
Source: Torex Semiconductor website, article by NIKKEI Shimbun

November 1, 2019, NIKKEI Shimbun

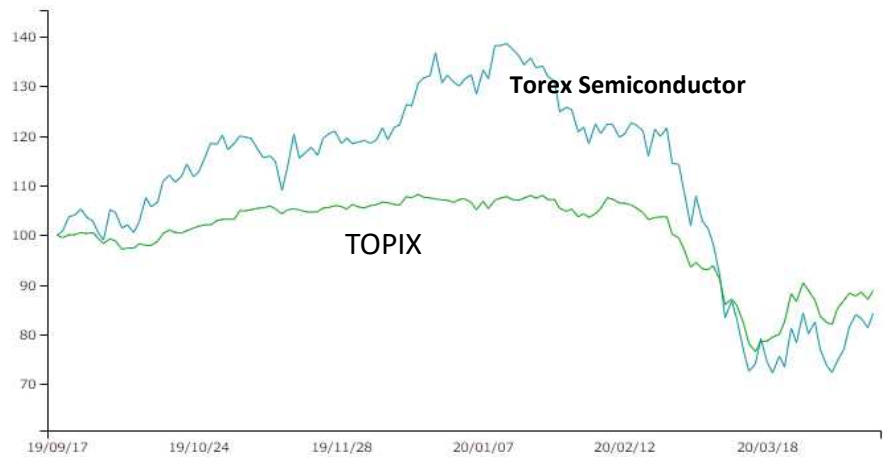
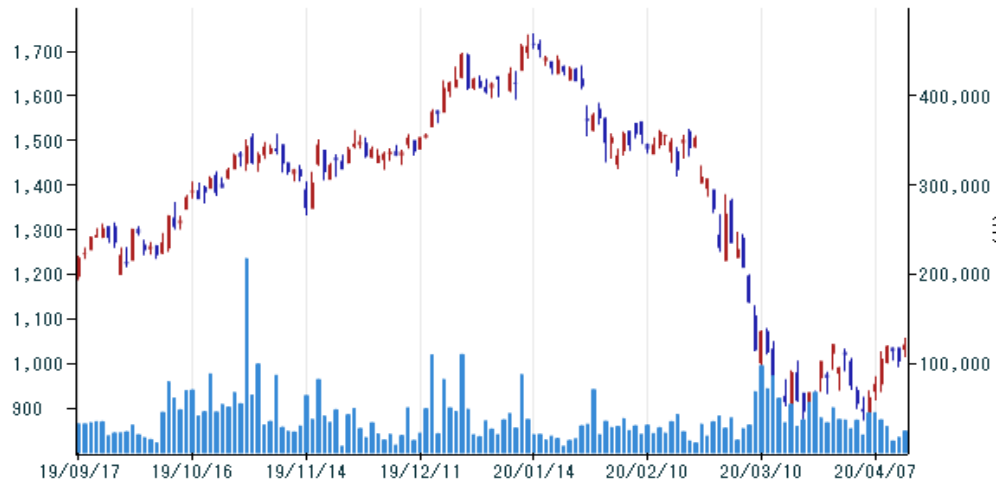
Torex launches world's smallest automotive power management IC

- AEC-Q100 (Grade2) Compliant, 36V Operation 600mA, Expanded Lineup of Synchronous Step-Down DC/DC Converters XD9267/XD9268 Series. Torex will start selling the XD9267 and 9268 series small, low-power in-vehicle power management ICs from January 1 in response to the growing need for power savings due to electrification of automobiles. It is the world's smallest voltage converter "DC-DC converter" that operates at 36V.
- It also has a function to monitor the output voltage and a function to help stable operation when the input voltage drops sharply. Sample price is 100 yen per chip (excluding tax). Samples of modules that have been combined with coils will be shipped in November, and mass production is scheduled for January 2020. Power consumption and mounting area are reduced to about half, and temperature to one-third that of using a general method voltage regulator instead of a DC-DC converter.

XD9267/XD9268 Series
USP-6C Package (1.8 x 2.0 x 0.6mm)



Share Price and Relative Performance



Source: SPEEDA



Torex Power Mgt ICs:

- Ultra compact packaging
- Highly energy efficient, low power consumption, low noise

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