## 6616 TOREX SEMICONDUCTOR

Sponsored Research September 10, 2020



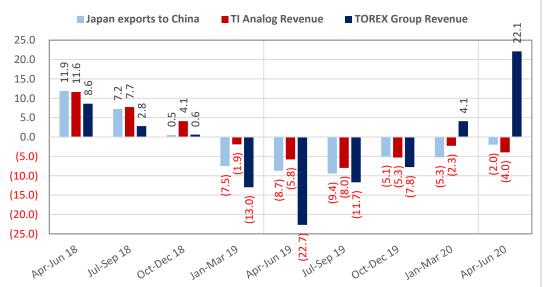
## Off to a strong start, but headwinds ahead

Phenitec strong 4Q performance continued in the 1Q

#### **SUMMARY**

- 1Q FY3/21 results of consolidated net sales +22% YoY and OP up 2.5x marked a strong start out of the gates. By Group company, parent Torex 1Q sales declined -1.5% due to automotive equipment down -31%, however OP increased on controlling SG&A under coronavirus. Phenitec contribution sales increased +42% on significant recovery of industrial equipment (+123%) and consumer electronics in Greater China and North America. Another positive for Phentitec profitability is steadily improving utilization rates at the Kagoshima Plant.
- FY3/20 was largely characterized by the negative impact from the US-China tariff war damaging global trade volumes, which negatively impacted industrial equipment, one of the focus growth drivers for the Group. The one saving grace during this challenging period was ongoing strength in automotive equipment (Torex 2Q +60.2%, 3Q +26.2%). This included special demand for China's nationwide ETC initiative, which largely finished by the end of 2019, as well as high growth in Japan in drive recorders (2Q shipments +52.4%, 3Q +40.2%). Jan-Mar 4Q slowed to just 4.0%, and Apr-Jun 1Q declined -34.5%.
- While coronavirus impact on automotive equipment is clearly a temporary factor, there is a high base for YoY comparison especially in the 2Q, which included some frontloading demand last year ahead of the consumption tax hike. On the positive side, Japan exports to China, one proxy for the health of the supply chain, declined only -2.0% in Apr-Jun, were flat in June, and increased +8.2% in July, suggesting the recovery in industrial equipment and consumer electronics may continue.

#### YoY Trend for Selected Demand Indicators: TOREX revenue continues to lead recovery



Note: the Analog segment for global no.1 Texas Instruments includes Power, Signal Chain and High Volume. Source: compiled by Sessa Partners from MOF Trade Statistics of Japan, respective company earnings releases.

## 1Q Follow-up



#### **Focus Points:**

Power management IC specialist with attractive growth profile from new applications driven by 5G, IoT-connected devices and the electrification of cars.

Key Indicators	
Share price (9/9)	1,152
YH (20/1/14)	1,743
YL (20/3/13)	855
10YH (14/11/6)	3,187.5
10YL (14/5/20)	725.8
Shrs out. (mn shrs)	11.55
Mkt cap (¥ bn)	13.31
EV (¥ bn)	9.85
Net cash / mkt cap	26.0%
Shr eqty ratio (6/30)	60.4%
FY3/20 P/E (act)	27.9x
FY3/20 EV/EBITDA (act)	4.9x
FY3/20 P/B (act)	0.67x
FY3/20 DY (act)	3.47%

#### Share price chart (weekly)



Source: SPEEDA

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TOREX SEMICONDUCTOR Consolidated Earnings Trend and 1H 3/21 Initial Guidance

J-GAAP	FY3/16	FY3/17	FY3/18	FY3/19	FY3/20	1Q 3/20	1Q 3/21	2Q 3/21	1H 3/21
JPY mn, %	act	act	act	act	act	act	act	implied	init CE
Net sales	10,621	21,560	23,997	23,897	21,501	4,797	5,858	5,542	11,400
YoY	6.5	103.0	11.3	(0.4)	(10.0)	(22.7)	22.1	0.1	10.3
Gross profit	5,063	5,900	7,177	6,494	5,452	1,269	1,325	<del>-</del>	_
GPM	47.7%	27.4%	29.9%	27.2%	25.4%	26.5%	22.6%		
SG&A expenses	3,923	4,649	4,964	4,943	4,774	1,191	1,129	<del>-</del>	_
Ratio to sales	36.9%	21.6%	20.7%	20.7%	22.2%	24.8%	19.3%		
Depreciation	442	1,219	934	1,085	1,312	305	269	<del>-</del>	_
EBITDA	1,582	2,470	3,147	2,636	1,990	384	464	_	_
YoY	(9.9)	56.2	27.4	(16.2)	(24.5)	(55.9)	21.1		
EBITDA margin	14.9%	11.5%	13.1%	11.0%	9.3%	8.0%	7.9%		
Operating profit	1,140	1,251	2,212	1,551	678	79	195	25	220
YoY	(15.6)	9.8	76.8	(29.9)	(56.3)	(88.4)	148.9	(90.3)	(33.4)
OPM	10.7%	5.8%	9.2%	6.5%	3.2%	1.6%	3.3%	0.4%	1.9%
Ordinary profit	971	906	1,998	1,820	676	11	180	(0)	180
YoY	(42.2)	(6.7)	120.6	(8.9)	(62.9)	(98.8)	16.4x	_	(35.5)
Profit ATOP	580	2,931	902	1,049	418	12	167	3	170
YoY	(53.5)	404.9	(69.2)	16.3	(60.2)	(97.6)	13.9x	(98.1)	7.8
EPS (¥)	54.59	308.77	99.44	95.89	38.03	1.07	15.47		15.58
DPS (¥)	32.00	32.00	34.00	38.00	40.00	_	_		16.00
BPS (¥)	1,022.30	1,267.65	1,338.74	1,717.90	1,712.30	1,711.74	1,708.51		_
Overseas sales ratio	70.6%	71.9%	71.0%	71.8%	67.2%	66.6%	88.7%		_
Avg. forex rate (USD)	¥120.1	¥108.9	¥110.8	¥110.7	¥109.1	¥110.0	¥107.7		¥108.0
Capex	602	988	1,149	3,323	1,497	217	307		_
R&D	204	229	406	357	403	89	69		_
Cash and deposits	6,617	7,769	10,835	10,982	9,281		11,789		_
Interest bearing debt	3	6,094	4,980	4,671	4,649		8,324		_
ST loans	3	2,423	2,483	1,903	2,902		2,902		_
LT loans < 1Y	_	1,174	1,103	1,021	605	ightharpoonup	1,308		_
LT loans	_	2,496	1,394	1,748	1,143	<b>,</b>	4,115		_
Net cash (net debt)	6,613	1,675	5,855	6,311	4,632		3,465		_
Net assets	10,929	15,598	19,085	19,638	18,672		18,640		_
Non-controlling int.	43	4,165	4,582	44	_	_	_		_
Shr Eqty + Accum OCI	10,886	11,432	14,503	19,594	18,672	<b>L</b>	18,640		_
Total assets	12,973	25,210	27,995	28,386	27,847		30,839		_
Equity ratio (%)	83.9	45.3	51.8	69.0	67.1		60.4		_
ROE (%)	5.3	26.3	7.0	6.2	2.2		_		_
Amt dividends paid	340	305	341	425	438		_		_
Consol. payout (%)	58.6	10.7	34.2	39.6	105.2		_		_
DOE (%)	3.1	2.7	2.6	2.5	2.3		_		_

NOTE: by Japanese accounting convention, figures reported in thousand yen are truncated (cut off) when displayed in million yen, however YoY percentages and various financial ratios are calculated based on thousand yen. In order to preserve accuracy of YoY percentages and ratios, figures here are input in thousand yen and displayed rounded off to the nearest million yen. SOURCE: compiled by Sessa Partners from company TANSHIN financial statements.

Citing uncertainties from the effects of coronavirus, the company has only disclosed initial 1H guidance. Our impression after our follow-up interview with the company is that cautious 2Q guidance for OP of only ¥25 million (-90.3% YoY) discounts a worst-case scenario of product mix deterioration. Considering that depreciation has peaked, and provided that operating rates at the Kagoshima Plant continue to steadily improve, there may be room for an overshoot on 1H guidance. Given the challenging and uncertain environment, we can see from the B/S that the company has topped up on borrowings to handle any contingency. However, note that the company is still net cash positive, with net cash accounting for 26.7% of current market cap.



#### **TOREX SEMICONDUCTOR Quarterly Consolidated Earnings Trend**

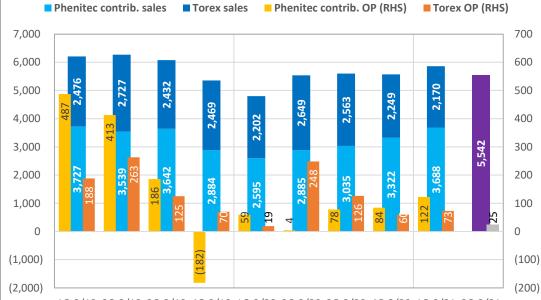
JPY mn, %	FY3/19	FY3/20	1Q 3/19	2Q 3/19	3Q 3/19	4Q 3/19	1Q 3/20	2Q 3/20	3Q 3/20	4Q 3/20	1Q 3/21
	act	act	act	act	act	act	act	act	act	act	act
Net sales	23,896	21,500	6,203	6,266	6,074	5,353	4,797	5,534	5,598	5,571	5,858
YoY	(0.4)	(10.0)	8.6	2.8	0.6	(13.0)	(22.7)	(11.7)	(7.8)	4.1	22.1
<ul> <li>Phenitec contrib.</li> </ul>	13,792	11,837	3,727	3,539	3,642	2,884	2,595	2,885	3,035	3,322	3,688
YoY	(0.3)	(14.2)	15.1	0.7	4.4	(19.6)	(30.4)	(18.5)	(16.7)	15.2	42.1
• Torex	10,104	9,663	2,476	2,727	2,432	2,469	2,202	2,649	2,563	2,249	2,170
YoY	(0.6)	(4.4)	0.1	5.7	(4.6)	(3.7)	(11.1)	(2.9)	5.4	(8.9)	(1.5)
Gross profit	6,493	5,451	1,921	1,892	1,530	1,151	1,269	1,422	1,446	1,315	1,325
GPM	27.2%	25.4%	31.0%	30.2%	25.2%	21.5%	26.5%	25.7%	25.8%	23.6%	22.6%
SG&A	4,942	4,773	1,246	1,216	1,218	1,263	1,191	1,170	1,241	1,172	1,129
Ratio to sales	20.7%	22.2%	20.1%	19.4%	20.1%	23.6%	24.8%	21.1%	22.2%	21.0%	19.3%
Depreciation	1,085	1,312	195	239	300	351	305	317	335	355	269
YoY	16.2	20.9	(11.8)	4.4	29.9	38.7	56.4	32.6	11.7	1.1	(11.8)
EBITDA	2,635	1,990	870	915	612	239	384	568	540	498	464
YoY	(16.2)	(24.5)	28.7	5.8	(21.5)	(71.0)	(55.9)	(37.9)	(11.8)	108.4	21.1
Ratio to sales	11.0%	9.3%	14.0%	14.6%	10.1%	4.5%	8.0%	10.3%	9.6%	8.9%	7.9%
Operating profit	1,550	678	675	676	311	(112)	78	252	204	144	195
YoY	(29.9)	(56.3)	48.4	6.5	(43.5)	TR	(88.4)	(62.7)	(34.4)	ТВ	148.9
OPM	6.5%	3.2%	10.9%	10.8%	5.1%	-2.1%	1.6%	4.6%	3.6%	2.6%	3.3%
<ul> <li>Phenitec contrib.</li> </ul>	904	225	487	413	186	(182)	59	4	78	84	122
YoY	(42.7)	(75.1)	60.7	(19.6)	(46.1)	TR	(87.9)	(99.0)	(58.1)	ТВ	106.8
OPM	6.6%	1.9%	13.1%	11.7%	5.1%	-6.3%	2.3%	0.1%	2.6%	2.5%	3.3%
• Torex	646	453	188	263	125	70	19	248	126	60	73
YoY	2.1	(29.9)	23.7	117.4	(39.0)	(54.8)	(89.9)	(5.7)	0.8	(14.3)	284.2
ОРМ	6.4%	4.7%	7.6%	9.6%	5.1%	2.8%	0.9%	9.4%	4.9%	2.7%	3.4%
Ordinary profit	1,820	676	924	819	227	(150)	11	268	240	157	180
YoY	(8.9)	(62.9)	98.3	27.8	(62.5)	TR	(98.8)	(67.3)	5.7	ТВ	16.4x
Profit ATOP	1,049	417	496	469	123	(39)	12	146	133	127	167
YoY	16.3	(60.2)	112.0	75.7	(58.0)	TR	(97.6)	(68.9)	8.1	ТВ	13.9x

Source: compiled by Sessa Partners from company IR results briefing presentation materials.



After bottoming in 1Q 3/20, Phenitec sales have risen each quarter sequentially, turning positive YoY in the 4Q, significantly extending gains in 1Q 3/21 on recovery in industrial equipment and consumer electronics demand in Greater China and North America.

### Phenitec contribution 1Q 3/21 sales and OP both rose YoY and QoQ sequentially (¥ mn)



1Q 3/19 2Q 3/19 3Q 3/19 4Q 3/19 1Q 3/20 2Q 3/20 3Q 3/20 4Q 3/20 1Q 3/21 2Q 3/21





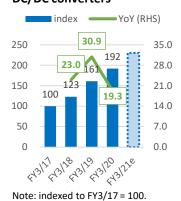


#### Torex Sales Trend by Application and D-in based\* Regions

JPY mn, %	FY3/19	FY3/20	1Q 3/19	2Q 3/19	3Q 3/19	4Q 3/19	1Q 3/20	2Q 3/20	3Q 3/20	4Q 3/20	1Q 3/21
by Application											
Torex sales	10,104	9,663	2,476	2,727	2,432	2,469	2,202	2,649	2,563	2,249	2,170
Industrial equipt.	3,927	3,463	966	1,063	945	953	784	912	933	834	872
Automotive equipt.	1,535	1,749	381	384	362	408	350	615	457	327	241
Medical equipt.	125	118	36	26	26	37	25	21	29	43	73
Wearable equipt.	238	220	71	74	37	56	53	66	54	47	50
Other	4,279	4,113	1,022	1,180	1,062	1,015	990	1,035	1,090	998	934
YoY											
Torex sales	(0.6)	(4.4)	0.1	5.7	(4.6)	(3.7)	(11.1)	(2.9)	5.4	(8.9)	(1.5)
Industrial equipt.	5.3	(11.8)	9.8	14.3	(0.1)	(2.0)	(18.8)	(14.2)	(1.3)	(12.5)	11.2
Automotive equipt.	(10.1)	13.9	(3.5)	(3.3)	(18.1)	(13.9)	(8.1)	60.2	26.2	(19.9)	(31.1)
Medical equipt.	15.7	(5.6)	80.0	(13.3)	(23.5)	54.2	(30.6)	(19.2)	11.5	16.2	192.0
Wearable equipt.	2.1	(7.6)	10.9	19.4	(31.5)	5.7	(25.4)	(10.8)	45.9	(16.1)	(5.7)
Other	(2.6)	(3.9)	788.7	(45.4)	(1.0)	(2.5)	(3.1)	(12.3)	2.6	(1.7)	(5.7)
by Region											
Torex D-in* sales	10,104	9,663	2,476	2,727	2,432	2,469	2,202	2,649	2,563	2,249	2,170
• Japan	4,401	4,187	1,086	1,159	1,070	1,086	950	1,090	1,104	1,043	896
• Asia	3,312	3,405	791	896	818	807	724	1,001	980	700	781
• Europe	1,430	1,212	345	402	304	379	305	329	268	310	259
North America	961	859	254	270	240	197	223	229	211	196	234
YoY											
Torex D-in* sales	(0.6)	(4.4)	0.1	5.7	(4.6)	(3.7)	(11.1)	(2.9)	5.4	(8.9)	(1.5)
• Japan	2.4	(4.9)	8.8	6.5	0.4	(5.1)	(12.5)	(6.0)	3.2	(4.0)	(5.7)
• Asia	(0.5)	2.8	(0.3)	13.0	(8.7)	(4.7)	(8.5)	11.7	19.8	(13.3)	7.9
• Europe	(4.1)	(15.2)	(19.0)	0.5	(7.9)	13.1	(11.6)	(18.2)	(11.8)	(18.2)	(15.1)
North America	(8.7)	(10.6)	(1.2)	(10.0)	(6.6)	(17.2)	(12.2)	(15.2)	(12.1)	(0.5)	4.9

<sup>\*</sup>Note: Torex 'Design-in' based sales = regional sales adjusted on orders received basis.

## Inductor built-in micro DC/DC converters



As can be seen in the table above, the main features for Torex sales by application in FY3/20 were industrial equipment -11.8% and automotive equipment +13.9%, with the decline in industrial outweighing the increase in automotive. That is because the absolute amount of industrial equipment sales is much larger. As noted earlier, automotive equipment sales are facing headwinds in the 2Q and 3Q from China's vertical ramp-up of ETC nationwide (special demand that disappears this term), and high growth in drive recorders in Japan, which is currently being negatively impacted under coronavirus. Like Phenitec, Torex is seeing a recovery in industrial equipment sales, 1Q +11.2%. The reverse of last term, gains in industrial equipment can offset declines in automotive equipment, although apparently that is accompanied by some mix deterioration. Note also the strong growth in medical equipment for three consecutive quarters (please refer to our 4Q update for details). The bottom line is that while there are clear headwinds this term, there are also areas of underlying strength.

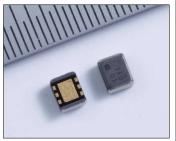
#### Inductor built-in micro DC/DC converter target markets / applications

Personal Electronics	Industrial Equipment	Automotive Equipment	Medical Equipment
Wireless earphones	5G optical transcievers	Drive recorders	Blood pressure monitors
Wearables	Microcontroller boards	ETC onboard units	Blood sugar monitors
Beauty care products	Sensor modules	Car navigtion	Fingertip pulse oximeters
Bluetooth, WiFi, GPS modules	Camera modules	AV main units	Healthcare equipment
	Home security	Camera and sensor modules	
	POS terminals	Keyless entry	
	IoT device modules	Power sliding doors	
		Sub displays	



One of the strengths of Torex and a factor driving growth is aggressive new product development of inductor built-in micro DC/DC converters, which have the properties of 1) ultra-compact, 2) low power consumption, 3) high efficiency and 4) low EMI noise, and different package types emphasize the required property. The graph on P4 shows this category has been growing at +24.3% CAGR over the last 3 years. The table below that summarizes target applications and markets. The XCL303/XCL304 series below announced last November targets high-speed optical transceivers for 5G applications, and it is the first inductor built-in micro DC/DC converter product on the market to

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



Developed to meet demand for optical transceivers for high-speed communication such as 5G between data centers for expected new compact products.

handle negative output voltage. XCL303/XCL304 Series Mounting **Existing Product** Area 65.25mm XCL303/XCL304 Mounting 8.7mm Area 14.43mm

**Mounting Area** 

Reduced by 78%

3.7mm

3.9mm

#### Phenitec\* Sales Trend by Application and Region

JPY mn, %	FY3/19	FY3/20	1Q 3/19	2Q 3/19	3Q 3/19	4Q 3/19	1Q 3/20	2Q 3/20	3Q 3/20	4Q 3/20	1Q 3/21
by Application											
Phenitec* sales	15,452	13,297	4,136	3,973	4,075	3,268	2,983	3,251	3,435	3,628	3,982
Industrial equipt.	3,262	2,009	759	705	1,100	698	408	412	493	696	911
<ul> <li>Automotive equipt.</li> </ul>	3,560	3,604	908	873	923	856	876	921	892	915	838
<ul> <li>Medical equipt.</li> </ul>	390	288	98	63	145	84	70	48	54	116	60
• Other	8,240	7,396	2,371	2,332	1,907	1,630	1,629	1,870	1,996	1,901	2,173
YoY											
Phenitec* sales	0.6	(13.9)	14.9	1.3	5.1	(17.6)	(27.9)	(18.2)	(15.7)	11.0	33.5
Industrial equipt.	(3.9)	(38.4)	(15.3)	(8.7)	29.4	(20.3)	(46.2)	(41.6)	(55.2)	(0.3)	123.3
<ul> <li>Automotive equipt.</li> </ul>	15.3	1.2	49.1	11.6	9.8	0.0	(3.5)	5.5	(3.4)	6.9	(4.3)
<ul> <li>Medical equipt.</li> </ul>	9.2	(26.2)	22.5	(52.6)	70.6	42.4	(28.6)	(23.8)	(62.8)	38.1	(14.3)
Other	(3.3)	(10.2)	17.7	4.4	(9.3)	(25.0)	(31.3)	(19.8)	4.7	16.6	33.4
by Region											
Phenitec* sales	15,452	13,297	4,136	3,973	4,075	3,268	2,983	3,251	3,435	3,628	3,982
• Japan	5,529	5,586	1,479	1,362	1,356	1,332	1,346	1,410	1,427	1,403	1,280
• Asia	3,306	2,764	1,019	1,070	750	467	495	661	803	805	914
• Europe	789	920	198	182	204	205	199	224	261	236	268
North America	5,828	4,027	1,440	1,359	1,765	1,264	943	956	944	1,184	1,520
YoY											
Phenitec* sales	0.6	(13.9)	14.9	1.3	5.1	(17.6)	(27.9)	(18.2)	(15.7)	11.0	33.5
• Japan	10.4	1.0	27.5	5.6	8.2	1.9	(9.0)	3.5	5.2	5.3	(4.9)
• Asia	(10.9)	(16.4)	25.0	17.8	(23.9)	(53.3)	(51.4)	(38.2)	7.1	72.4	84.6
• Europe	3.1	16.6	8.8	(20.9)	7.4	25.8	0.5	23.1	27.9	15.1	34.7
North America	(0.9)	(30.9)	(0.1)	(9.0)	21.7	(15.5)	(34.5)	(29.7)	(46.5)	(6.3)	61.2

7.5 mm

<sup>\*</sup>Note: Phenitec sales include intra-company transactions with Torex. Classifications subject to change.





As can be seen in the table on the previous page, the main features for Phenitec sales by application in FY3/20 were industrial equipment -38.4% and automotive equipment +1.2%. The decline in orders from China and North America lowered operating rates, while depreciation increased from the major capex project of integrating the head office and Daiichi plants in Okayama. The clear takeaway from 1Q 3/21 results was the significant recovery in industrial equipment and consumer electronics from customers in China and North America.

Integration of the head office plant and Daiichi Plant will be completed this term. Benefits from the integration include: 1) raising production efficiency by migrating from 5-inch to 6-inch wafers (6-inch ratio  $24\% \rightarrow 64\%$ ), 2) raising production efficiency with the right equipment and layout, 3) energy-saving cost reduction, and 4) obtaining quality standards required to expand industrial and automotive business. In addition, the Kagoshima Plant is expected to turn profitable this term on a full-term basis.

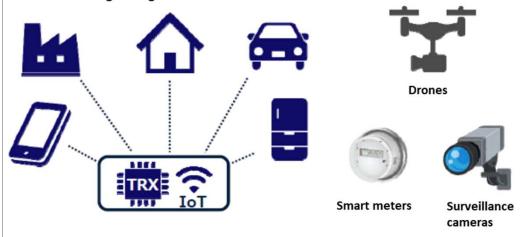
For the time being, it will be important to monitor supply chain inventory trends, and the potential risk to short-term earnings. However, the medium-term outlook for robust growth driven by new applications from the rollout of 5G, increase in IoT-connected devices and electrification of cars remains unchanged.

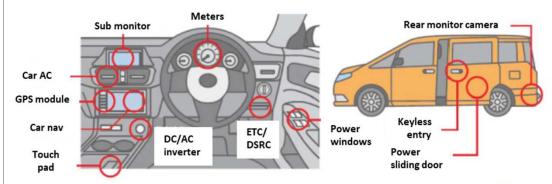




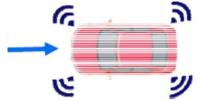
#### **Power Management IC Applications Summary**

#### INDUSTRIAL: growing number of IoT connected devices





AUTOMOTIVE: power management ICs for the sharp increase in sensor and camera modules required for autonomous driving



#### **Power Management IC Applications**

#### **INDUSTRIAL**

Industrial robots / POS registers / POS terminals / Industrial measuring instruments / Smart meters / Security equipment

#### **AUTOMOTIVE**

Car navigation systems / Car audio systems / Power windows / Power seats / In-vehicle ETC systems / Dashboard cameras / Rear-view monitor cameras / Drive recorders

#### **MEDICAL & HEALTHCARE**

Electronic thermometers / Scales / Blood pressure monitors / ECGs / Blood glucose monitors / Monitoring equipment

#### **WEARABLES**

Smartwatches / Smartglasses / Smart cards / Wearable cameras / Wearable devices

#### **CONSUMER ELECTRONICS**

LCD TVs / Beauty care products / Consumer game consoles / Home appliances / Home theaters / LED lighting

#### **COMPUTERS & COMMUNICATIONS**

Smartphones / PC peripherals / IC recorders / Digital cameras / Laptops / Electronic dictionaries / E-readers / Portable game devices

Source: results briefing materials





#### **APPENDIX**

Reference data series on the following pages are readily available indicators to monitor monthly and quarterly conditions of the business environment. Both TI and Littelfuse which acquired Torex Group's major US client, IXYS Corp., report quarterly results 2-3 weeks ahead of TOREX SEMICONDUCTOR, which can provide some useful insight.

- 1 MOF Trade Statistics of Japan: Exports by Destination Region
- 2 MOF Trade Statistics of Japan: Exports to China by Key Sectors
- 3 JEITA Domestic Consumer Electronic Shipments by Value
- 4 JEITA Selected Domestic Car AVC Equipment Shipments by Volume
- (5) Global No.1 Texas Instruments Analog Revenue Quarterly Trend



**MOF Trade Statistics of Japan: Exports by Destination Region** 

JPY bn,	Total									
% YoY	Japan	VeV	to	VeV	to	VeV	to	VeV	to EU	VeV
2017.01	Exports	YoY	<b>P.R.C.</b> 887	<b>YoY</b> 3.1	U.S.A.	YoY	ASEAN	YoY 10.0		YoY
2017.01 2017.02	5,421 6,347	1.3		28.2	1,054	(6.6)	850	10.0	597 701	(5.6)
2017.02	7,228	11.3 11.9	1,197 1,299	28.2 16.4	1,223 1,353	0.4 3.5	930	10.5 15.2	701 801	3.3 1.3
2017.03	6,330	7.5		14.7	1,233	2.7	1,071 941	6.7	718	2.2
2017.04	5,852	7.5 14.9	1,188	23.8	1,233	11.7	894	14.2	692	19.8
2017.05	6,608	9.7	1,117 1,248	25.6 19.5	1,084	7.1	957	7.5	726	
2017.00	6,495	13.4	1,248	17.6	1,304	11.5	1,001	17.6	720	9.0
2017.07	6,278	18.1	1,211	25.8	1,319	21.8	991	22.0	672	13.
2017.08	6,811	14.1	1,219	29.3	1,183	11.1	1,019	17.4	767	11.0
2017.10	6,693	14.0	1,354	26.0	1,282	7.1	1,015	19.5	753	15.8
2017.11	6,920	16.2	1,380	25.1	1,369	13.0	1,023	22.9	717	13.3
2017.11	7,304	9.4	1,507	15.9	1,412	3.1	1,105	10.0	792	11.4
2018.01	6,086	12.3	1,160	30.8	1,066	1.2	925	8.7	717	20.:
2018.02	6,463	1.8	1,080	(9.8)	1,277	4.4	995	7.0	781	11.
2018.03	7,382	2.1	1,440	10.8	1,356	0.2	1,139	6.4	803	0.3
2018.04	6,822	7.8	1,316	10.8	1,286	4.3	1,013	7.6	819	14.
2018.05	6,327	8.1	1,272	13.9	1,149	6.1	994	11.2	697	0.
2018.06	7,054	6.7	1,386	11.1	1,293	(0.9)	1,085	13.4	794	9.:
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.
2018.11	6,927	0.1	1,384	0.3	1,391	1.6	1,102	1.4	745	3.
2018.12	7,022	(3.9)	1,402	(7.0)	1,435	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	(2.6
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	6,664	(2.3)	1,233	(6.3)	1,415	10.0	1,018	0.5	798	(2.6
2019.05	5,838	(7.7)	1,148	(9.7)	1,190	3.6	821	(17.4)	647	(7.1
2019.06	6,585	(6.6)	1,246	(10.1)	1,356	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	6,139	(8.2)	1,200	(12.1)	1,190	(4.4)	934	(9.9)	709	(1.4
2019.09	6,369	(5.2)	1,177	(6.7)	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	(1.8
2020.02*	6,321	(1.0)	1,136	(0.4)	1,270	(2.6)	985	5.1	609	(7.7
2020.03	6,358	(11.7)	1,191	(8.7)	1,182	(16.5)	947	(11.9)	634	(11.1
2020.04	5,206	(21.9)	1,184	(4.0)	880	(37.8)	803	(21.1)	484	(28.0
2020.05	4,186	(28.3)	1,126	(1.9)	588	(50.6)	613	(25.3)	364	(33.8
2020.06	4,862	(26.2)	1,243	(0.2)	725	(46.6)	657	(35.1)	434	(28.4
2020.07p	5,369	(19.2)	1,329	8.2	1,091	(19.5)	711	(27.2)	439	(30.5
by QTR										
1Q 3/19	20,203	7.5	3,975	11.9	3,729	3.0	3,092	10.7	2,310	8.3
2Q 3/19	20,153	2.9	3,982	7.2	3,786	(0.4)	3,179	5.6	2,218	2.
3Q 3/19	21,192	1.3	4,262	0.5	4,256	4.8	3,305	2.7	2,379	5.:
4Q 3/19	19,162	(3.9)	3,403	(7.5)	3,858	4.3	2,868	(6.2)	2,362	2.
1Q 3/20	19,087	(5.5)	3,628	(8.7)	3,962	6.3	2,851	(7.8)	2,186	(5.4
2Q 3/20	19,151	(5.0)	3,606	(9.4)	3,733	(1.4)	2,900	(8.8)	2,222	0.:
3Q 3/20	19,531	(7.8)	4,046	(5.1)	3,701	(13.0)	2,959	(10.5)	2,186	(8.1
4Q 3/20*	18,111	(5.5)	3,223	(5.3)	3,504	(9.2)	2,767	(3.5)	1,929	(6.9
1Q 3/21	14,254	(25.3)	3,553	(2.0)	2,192	(44.7)	2,073	(27.3)	1,281	(29.8

Source: MOF Trade Statistics of Japan monthly press releases. \*Note: The UK exited the EU from Feb. 1, 2020, so YoY figures are adjusted accordingly.





MOF Trade Statistics of Japan: Exports to China by Key Sectors

JPY bn,	Statistics of Total	л зара	III. EXPORTS	io Ciliii	a by Rey St	2013						
% YoY	Exports		General		of which		Electr.		of which		Transport	
	to P.R.C.	YoY	Machinery	YoY	SPEs	YoY	Equipt.	YoY	ICs	YoY	Equipt.	YoY
2017.01	887	3.1	168	10.1	_		205	(3.6)	53	1.9	82	18.5
2017.02	1,197	28.2	282	33.1	_		261	26.5	56	22.4	106	25.3
2017.03	1,299	16.4	297	14.1	_		282	16.4	58	8.1	118	13.0
2017.04	1,188	14.7	255	15.6	47	(0.5)	260	7.4	56	4.8	119	21.9
2017.05	1,117	23.8	252	40.1	50	54.3	229	14.1	55	16.5	104	9.3
2017.06	1,248	19.5	296	37.7	63	40.9	274	10.6	59	6.4	118	10.3
2017.07	1,211	17.6	265	18.6	45	(9.8)	279	15.8	61	7.4	117	9.6
2017.08	1,219	25.8	266	41.2	50	42.1	287	18.7	68	17.4	104	7.9
2017.09	1,284	29.3	264	44.6	59	105.1	316	22.4	73	21.6	119	15.8
2017.10	1,354	26.0	296	44.4	68	123.1	305	18.1	66	9.0	128	10.8
2017.11	1,380	25.1	309	40.1	73	69.0	326	26.2	68	18.1	138	6.0
2017.12	1,507	15.9	362	36.4	105	74.4	351	17.7	82	30.8	143	4.8
2018.01	1,160	30.8	273	62.7	70	44.0	261	27.4	59	11.7	103	25.4
2018.02	1,080	(9.8)	255	(9.6)	67	(2.2)	233	(11.0)	57	1.4	111	4.8
2018.03	1,440	10.8	393	32.0	100	72.4	300	6.6	68	17.3	126	7.1
2018.04	1,316	10.8	347	36.5	102	114.8	274	5.3	65	17.6	121	1.4
2018.05	1,272	13.9	329	30.5	95	90.7	259	12.8	60	9.3	111	6.9
2018.06	1,386	11.1	363	22.9	112	79.2	303	10.4	80	35.5	129	8.8
2018.07	1,355	11.9	338	27.8	105	135.1	295	5.8	72	16.6	137	10.1
2018.08	1,365	12.0	342	28.5	127	152.6	289	0.4	63	(7.3)	122	16.8
2018.09	1,262	(1.7)	296	12.1	89	50.8	270	(14.6)	52	(29.0)	139	16.8
2018.10	1,476	9.0	326	9.9	74	8.8	320	4.9	80	22.2	161	25.6
2018.11	1,384	0.3	307	(0.7)	69	(5.1)	297	(8.8)	74	7.8	145	5.6
2018.12	1,402	(7.0)	316	(12.7)	69	(34.3)	300	(14.8)	73	(10.7)	134	(6.4)
2019.01	958	(17.4)	201	(26.6)	53	(24.8)	206	(20.9)	60	1.8	97	(5.9)
2019.01	1,140	5.6	296	16.3	82	22.6	208	(10.8)	43	(24.5)	111	0.6
2019.03	1,305	(9.4)	338	(13.9)	84	(16.1)	260	(13.3)	53	(22.4)	126	(0.6)
2019.04	1,233	(6.3)	287	(17.3)	60	(41.0)	243	(11.3)	45	(31.0)	124	2.5
2019.05	1,148	(9.7)	273	(17.1)	69	(27.5)	229	(11.5)	59	(0.9)	117	5.7
2019.06	1,246	(10.1)	299	(17.7)	82	(27.1)	260	(14.2)	61	(24.0)	136	5.5
2019.07	1,229	(9.3)	278	(17.7)	72	(31.5)	254	(14.1)	55	(23.7)	131	(4.8)
2019.08	1,200	(12.1)	273	(20.2)	78	(38.7)	259	(10.2)	61	(2.6)	103	(15.3)
2019.09	1,177	(6.7)	243	(18.0)	67	(25.0)	264	(2.3)	67	27.9	125	(10.7)
2019.10	1,322	(10.4)	282	(13.4)	69	(6.2)	290	(9.6)	69	(13.6)	138	(14.4)
2019.11	1,310	(5.4)	288	(6.1)	75	7.7	278	(6.5)	61	(17.2)	153	5.4
2019.12	1,413	0.8		7.6	111	59.7	289	(3.4)		(17.1)	147	
2020.01	897	(6.4)	194	(3.5)	54	2.7	195	(5.6)	54	(10.0)	102	5.8
2020.01	1,136	(0.4)	257	(13.3)	64	(22.1)	243	17.1	54	26.5	125	12.3
2020.03	1,191	(8.7)	288	(14.6)	73	(12.6)	256	(1.5)	62	17.4	113	(9.8)
2020.04	1,184	(4.0)	254	(11.6)	60	0.5	268	10.3	63	40.2	107	(13.7)
2020.05	1,126	(1.9)	263	(3.6)	62	(10.3)	248	8.5	62	4.1	98	(16.4)
2020.06	1,243	(0.2)	289	(3.3)	65	(20.5)	258	(0.8)	60	(1.1)	145	7.1
2020.07p	1,329	8.2	302	8.9	89	23.6	285	12.2	67	22.7	154	17.9
2020.07β	1,329	0.2	302	0.5	63	23.0	263	12.2	07	22.7	134	17.5
by QTR												
1Q 3/19	3,975	11.9	1,040	29.6	309	93.4	835	9.4	205	21.2	360	5.6
2Q 3/19	3,982	7.2	976	22.8	321	108.5	854	(3.3)	187	(7.9)	398	16.9
3Q 3/19	4,262						917				440	
		0.5 (7.5)	949	(1.9)	212	(13.8)		(6.7)	227 156	5.2		7.7
4Q 3/19 1Q 3/20	3,403 3,628	(7.5)	835 859	(9.3) (17.4)	219 211	(7.8)	732	(15.1) (12.4)	156 165	(15.3) (19.4)	334 376	(1.8) 4.5
2Q 3/20	3,606	(8.7) (9.4)	793	(18.7)	211	(32.6)		(9.0)	183		358	
		(9.4) (5.1)					777 857			(2.2)		(10.0)
3Q 3/20	4,046 3,223	(5.1) (5.2)	910 739	(4.1) (11.5)	254 191	19.8	857 694	(6.6)	191 171	(15.9)	438 341	(0.5)
4Q 3/20	3,223	(5.3)				(12.5)		3.0		9.3		(7.0)
1Q 3/21	3,553	(2.0)	806	(6.2)	187	(11.2)	774	5.8	185	12.0	350	(7.0)

Source: MOF Trade Statistics of Japan monthly press releases.





**JEITA Domestic Consumer Electronic Shipments by Value** 

	45 53 62 46 42	YoY (0.8) (1.2) 2.4 5.7
2018.01       92       (3.6)       40       (5.8)       7       (8.5)         2018.02       109       1.0       50       4.9       6       (9.0)         2018.03       130       (2.9)       60       (5.3)       8       (19.8)	45 53 62 46	(0.8) (1.2) 2.4
2018.02       109       1.0       50       4.9       6       (9.0)         2018.03       130       (2.9)       60       (5.3)       8       (19.8)	53 62 46	(1.2)
2018.03 130 (2.9) 60 (5.3) 8 (19.8)	62 46	2.4
	46	
2018.04 98 (0.4) 45 (5.0) 7 (6.8)	_	5.7
2020.0	42	
2018.05 100 6.6 51 11.0 7 7.7		1.5
<u>2018.06</u> 121 7.4 66 18.9 7 0.8	48	(4.4)
2018.07 106 4.8 50 3.3 7 0.0	49	7.1
2018.08 92 (0.9) 43 (6.6) 6 10.5	43	3.8
	50	(3.4)
2018.10 106 (0.1) 49 0.0 7 (36.9)	51	7.9
2018.11 116 4.3 60 5.3 7 (3.5)	49	4.4
<u>2018.12</u> 145 2.9 89 1.1 9 5.4	47	6.0
2019.01 96 1.2 42 (2.0) 7 2.3	47	4.1
2019.02 107 <b>(5.0)</b> 47 <b>(12.0)</b> 6 9.5	53	0.5
2019.03 127 (4.9) 62 (3.4) 8 (5.2)	58	(6.6)
2019.04 96 (2.1) 42 (6.6) 8 10.0	47	0.5
2019.05 95 (5.6) 42 (17.9) 7 8.8	46	9.8
2019.06 116 (3.8) 60 (8.6) 7 (0.8)	49	2.4
2019.07 118 11.4 56 13.3 8 14.5	54	9.0
2019.08 109 18.5 58 33.4 7 2.6	45	5.7
2019.09 123 14.9 61 21.5 8 12.1	55	8.6
2019.10 100 (6.3) 45 (7.6) 8 18.1	47	(8.2)
2019.11 113 (2.6) 61 2.2 8 3.2	45	(9.3)
2019.12 135 (7.3) 84 (5.4) 9 (3.9)	42	(11.6)
2020.01 95 (0.9) 44 5.4 7 (1.6)	44	(6.4)
2020.02 96 (10.3) 41 (11.9) 6 (7.2)	48	(9.3)
2020.03 117 (8.4) 57 (7.4) 6 (19.5)	53	(8.1)
2020.04 82 (14.9) 38 (10.3) 5 (32.3)	39	(16.2)
2020.05 72 (23.9) 38 (8.0) 5 (29.9)	29	(37.5)
	40	(19.0)

Apple AirPods with charging case



Fingertip pulse oximeter for blood oxygen saturation level



 $Source: \ Japan \ Electronics \ and \ Information \ Technology \ Industries \ Association$ 

### Wireless earphones surpass smart watches in 2019 worldwide wearables shipments

million units, %	CY2018	CY2018	CY2019	CY2019	YoY
	mn units	mkt share	mn units	mkt share	(%)
Product					
Earwear/Hearables	48.6	27.3%	170.5	50.7%	250.8
Wristband	50.5	28.4%	69.4	20.6%	37.4
Watch	75.3	42.3%	92.4	27.5%	22.7
Others	3.5	2.0%	4.2	1.2%	20.0
TOTAL	178.0	100.0%	336.5	100.0%	89.0
Company					
Apple	48.0	27.0%	106.5	31.6%	121.9
Xiaomi	23.3	13.1%	41.7	12.4%	79.0
Samsung	12.2	6.9%	30.9	9.2%	153.3
Huawei	11.2	6.3%	27.9	8.3%	149.1
Fitbit	13.8	7.8%	15.9	4.7%	15.2
Others	69.4	39.0%	113.5	33.7%	63.5
TOTAL	178.0	100.0%	336.5	100.0%	89.0

Source: IDC Worldwide Quarterly Wearable Device Tracker, March 2020





#### JEITA Selected Domestic Car AVC Equipt. Shipments by Volume

000 units,	Car		AV		ETC		ETC 2.0	
% YoY	Navigation		Main		Onboard		(DSRC)	
	Systems	YoY	Units	YoY	Units	YoY	Units	YoY
2018.01	466	1.5	177	(12.0)	269	8.9	59	(28.2)
2018.02	536	1.0	199	(9.6)	300	(0.9)	71	(15.9)
2018.03	633	2.1	223	(9.8)	347	(3.4)	85	(4.5)
2018.04	471	6.3	192	2.9	281	0.9	61	(2.8)
2018.05	426	2.5	173	(7.5)	257	(4.7)	51	5.6
2018.06	527	0.8	198	(9.2)	286	(8.6)	65	3.2
2018.07	512	8.5	207	(1.5)	285	(2.2)	61	5.9
2018.08	452	7.6	177	(0.3)	539	(4.3)	57	0.7
2018.09	573	8.2	185	(14.5)	279	(4.9)	73	2.1
2018.10	544	14.4	206	(4.9)	277	4.4	75	32.0
2018.11	510	6.8	212	1.5	279	2.6	72	21.5
2018.12	494	7.9	205	14.5	254	(4.7)	72	28.2
2019.01	479	2.8	210	18.6	259	(3.7)	68	14.1
2019.02	548	2.2	228	14.6	300	(0.1)	77	9.3
2019.03	610	(3.6)	234	4.6	344	(1.0)	99	17.5
2019.04	496	5.3	220	15.1	275	(2.3)	69	13.2
2019.05	490	14.8	213	23.4	267	3.7	60	18.3
2019.06	530	0.6	212	7.2	302	5.6	90	38.4
2019.07	539	5.2	257	24.1	290	1.9	105	70.6
2019.08	462	2.1	197	10.9	253	5.6	95	68.0
2019.09	563	(1.7)	240	29.9	304	9.0	98	34.6
2019.10	450	(17.3)	247	19.7	248	(10.4)	76	1.1
2019.11	456	(10.7)	234	10.7	244	(12.4)	76	5.5
2019.12	420	(4.3)	213	4.3	232	(8.4)	75	4.2
2020.01	451	(5.9)	239	14.2	207	(20.0)	91	34.6
2020.02	477	(12.9)	241	5.7	240	(20.0)	109	41.4
2020.03	549	(10.0)	274	17.4	272	(21.0)	102	2.2
2020.04	323	(34.8)	178	(19.5)	198	(27.9)	71	2.7
2020.05	249	(49.2)	121	(43.1)	143	(46.5)	59	(2.2)
2020.06	360	(32.1)	176	(17.1)	188	(37.7)	81	(10.2)

Source: Japan Electronics and Information Technology Industries Association

### **Japan DR Shipments**

	•	
000 units,	Drive	
% YoY	Recorders	YoY
1Q 3/17	323	
2Q 3/17	329	
3Q 3/17	387	
4Q 3/17	417	
1Q 3/18	418	29.3
2Q 3/18	430	30.6
3Q 3/18	858	121.8
4Q 3/18	959	129.8
1Q 3/19	788	88.4
2Q 3/19	863	100.7
3Q 3/19	939	9.5
4Q 3/19	1,081	12.8
1Q 3/20	1,082	37.4
2Q 3/20	1,315	52.4
3Q 3/20	1,317	40.2
4Q 3/20	1,125	4.0
1Q 3/21	705	(34.9)
by FY		
FY3/17	1,457	
FY3/18	2,665	83.0
FY3/19	3,672	37.8
FY3/20	4,839	31.8

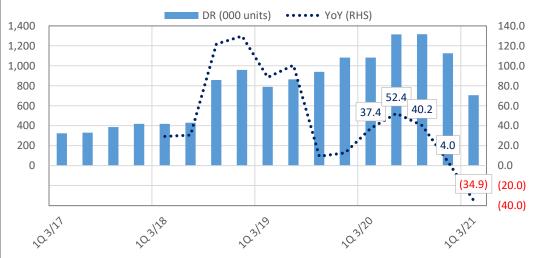
Source: JEITA

#### Full LCD display rear view mirrortype drive recorder (DR)



Source: MAXWIN

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



Source: Japan Electronics and Information Technology Industries Association (JEITA)



#### Texas Instruments (NASDAQ: TXN) Consolidated Earnings Trend

, , ,		U				
USD mn, %	FY12/17	YoY	FY12/18	YoY	FY12/19	YoY
	act		act		act	
Total revenue	14,961	11.9	15,784	5.5	14,383	(8.9)
<ul> <li>Analog (Power, Signal Chain and High Volume)</li> </ul>	9,900	16.0	10,801	9.1	10,223	(5.4)
<ul> <li>Embedded Processing (Conn. Microcontrollers)</li> </ul>	3,498	15.7	3,554	1.6	2,943	(17.2)
<ul> <li>Other (DLP, Calculators and Custom ASICs)</li> </ul>	1,563	(13.7)	1,429	(8.6)	1,217	(14.8)
Total OP	6,083	25.3	6,713	10.4	5,723	(14.7)
<ul><li>Analog</li></ul>	4,468	30.8	5,109	14.3	4,477	(12.4)
■ Embedded Processing	1,143	39.9	1,205	5.4	907	(24.7)
■ Other*	472	(24.1)	399	(15.5)	339	(15.0)
ОРМ	40.7%		42.5%		39.8%	
<ul><li>Analog</li></ul>	45.1%		47.3%		43.8%	
<ul> <li>Embedded Processing</li> </ul>	32.7%		33.9%		30.8%	
<ul><li>Other</li></ul>	30.2%		27.9%		27.9%	
Global revenue	14,961	11.9	15,784	5.5	14,383	(8.9)
• US	1,901	13.0	2,288	20.4	1,827	(20.1)
■ China	6,600	10.0	7,000	6.1	7,200	2.9
■ Europe, ME, Africa	2,907	21.5	3,047	4.8	2,707	(11.2)
■ Asia	2,224	9.9	2,240	0.7	1,450	(35.3)
■ Japan	1,049	0.9	869	(17.2)	796	(8.4)
■ Rest of World	280	21.2	340	21.4	403	18.5

Source: compiled by Sessa Partners from SPEEDA data. \*Note: As of January 1, 2017, royalties were moved from revenue to OI&E.

### Global No.1 Texas Instruments Analog Revenue Quarterly Trend

#### ■ Analog revenue (USD mn) YoY (RHS) 3,500 25.0 20.0 2,800 2,100 15.0 10.0 1,400 700 5.0 0 0.0 -700 (5.0)(2.3)-1,400 (10.0)Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 2017 2017 2017 2017 2018 2018 2018 2018 2019 2019 2019 2019 2020 2020

 $Source: compiled \ by \ Sessa \ Partners \ from \ quarterly \ earnings \ press \ releases.$ 

### TI 2Q earnings release:

- Revenue decreased 12% from the same quarter a year ago, driven primarily by weakness in the automotive market.
- In our core businesses,
  Analog revenue declined
  4% and Embedded
  Processing declined 31%
  from the same quarter a
  year ago. Analog and
  Embedded Processing
  both had positive
  sequential growth in the
  second quarter excluding
  the automotive market.



#### Littelfuse (NASDAQ: LFUS) Consolidated Earnings Trend

USD mn, %	FY12/17	YoY	FY12/18	YoY	FY12/19	YoY
	act		act*		act	
Total revenue	1,222	15.7	1,718	40.6	1,504	(12.5)
<ul><li>Electronics</li></ul>	662	23.7	1,124	69.8	961	(14.5)
<ul> <li>Automotive</li> </ul>	453	9.2	480	6.0	429	(10.6)
<ul><li>Industrial</li></ul>	106	0.0	114	7.5	114	0.0
Total OP	219	67.2	225	2.7	193	(14.2)
<ul><li>Electronics</li></ul>	156	33.3	241	54.5	146	(39.4)
<ul> <li>Automotive</li> </ul>	63	5.0	55	(12.7)	47	(14.5)
<ul><li>Industrial</li></ul>	10	150.0	17	70.0	22	29.4
(eliminations)	(10)		(89)		(22)	
OPM	17.9%		13.1%		12.8%	
<ul><li>Electronics (before elim)</li></ul>	23.6%		21.4%		15.2%	
<ul><li>Automotive (before elim)</li></ul>	13.9%		11.5%		11.0%	
Industrial (before elim)	9.4%		14.9%		19.3%	
Global revenue	1,222	15.7	1,718	40.6	1,504	(12.5)
• US	383	7.3	512	33.7	440	(14.1)
■ China	321	21.6	468	45.8	416	(11.1)
<ul><li>Other countries</li></ul>	517	18.6	739	42.9	647	(12.4)

Source: compiled by Sessa Partners from SPEEDA data. \*Note: completed acquisition of IXYS Corp., the TOREX Group's large North American customer, on 2018.01.17

#### **Littelfuse Quarterly Revenue Trend by Segments YoY**

YoY	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020
Net sales	46.4	46.5	38.1	32.0	(2.9)	(13.4)	(17.6)	(15.8)	(14.6)	(22.8)
<ul> <li>Electronics</li> </ul>	72.0	76.7	68.5	62.1	0.4	(13.3)	(23.3)	(20.9)	(19.3)	(14.0)
<ul> <li>Automotive</li> </ul>	17.0	9.2	0.5	(2.7)	(10.0)	(14.6)	(8.5)	(9.2)	(7.7)	(42.9)
<ul> <li>Industrial</li> </ul>	14.4	18.7	0.4	(2.6)	(2.4)	(9.1)	6.1	6.8	1.9	(25.6)

Source: compiled by Sessa Partners from quarterly earnings releases.

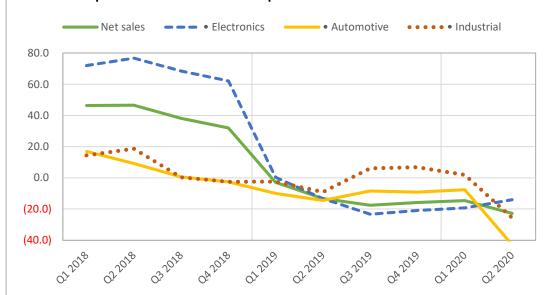
## Littelfuse 1Q earnings release:

 Net sales were down 15% versus the prior year period, primarily due to electronics inventory rebalancing and production and demand impacts from COVID-19

## Littelfuse 2Q earnings release:

 Automotive sales decreased 43%

#### **Littelfuse Acquired TOREX Client IXYS Corporation in Jan-2018**





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