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Zacks Small-Cap Research

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TowerJazz (TSEM-NASDAQ)

TSEM: Seasonality and Mobile Weakness Hits Q1

We believe that the stock could be worth $37.00 using industry average PE ratios given current earnings estimates.

Current Price (05/07/18)	$25.00
Valuation	**$37.00**

OUTLOOK

TowerJazz is a pure-play analog semiconductor wafer foundry that manufactures SiGe, MEMS, RF, embedded flash-based memory, analog/mixed-signal, and CMOS image-sensor devices in the US, Israel and Japan. It has capacity to $1.6B in sales and is serving high growth markets such as RF High Position analog, CMOS image sensors, and power management. It is expected to grow because of the specific markets it addresses, by fab acquisitions, fab partnerships, and by market share gains. Its goal it to reach $3.5B in revenues organically combined with targeted acquisitions providing horizontal diversification.

SUMMARY DATA

52-Week High	**$35.95**
52-Week Low	**$21.35**
One-Year Return (%)	**4.2**
Beta	**1.2**
Average Daily Volume (sh)	**1,262,179**
Shares Outstanding (mil)	**98.5**
Market Capitalization ($mil)	**$2,462**
Short Interest Ratio (days)	**1.9**
Institutional Ownership (%)	**47**
Insider Ownership (%)	**1**
Annual Cash Dividend	**$0.00**
Dividend Yield (%)	**0.00**
5-Yr. Historical Growth Rates	
Sales (%)	**26.4**
Earnings Per Share (%)	**13.5**
Dividend (%)	**N/A**
P/E using TTM EPS	**12.4**
P/E using 2018 Estimate	**12.9**
P/E using 2019 Estimate	**11.0**
Zacks Rank	**N/A**

Risk Level	**Average**
Type of Stock	**Mid-Blend**
Industry	**Elec Comp-Semis**

ZACKS ESTIMATES

Revenue
(in millions of $)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2016	278 A	305 A	326 A	340 A	1,250 A
2017	330 A	345 A	355 A	358 A	1,387 A
2018	313 A	335 E	360 E	375 E	1,383 E
2019					1,493 E

Earnings Per Share
(Adjusted non-GAAP Diluted)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2016	$0.34 A	$0.42 A	$0.51 A	$0.54 A	$1.80 A
2017	$0.50 A	$0.54 A	$0.60 A	$0.58 A	$2.21 A
2018	$0.31 A	$0.44 E	$0.56 E	$0.63 E	$1.94 E
2019					$2.28 E

Zacks Projected EPS Growth Rate - Next 5 Years % **15**

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WHAT'S NEW

After years of quarterly revenue growth, seasonality mobile phone weakness hit TowerJazz causing it to report a down first quarter. Revenues were $313 million, down 5% from a year ago and at the low end of expectations. The company guided to a midpoint revenue range of $325 million plus or minus 5% for this quarter. The company believes last year's Q4 to Q1 decline was abnormally small because "certain areas that it was involved in then were seeing some surges and market demand outside of seasonality, and it was growing in market share in certain areas that allowed it to curtail seasonality." TSEM also pointed to weakness in sales to customers who sell to smartphone makers.

Revenue growth is expected to improve in the second half of the year primarily because of the company's Japanese fab's ramp of 300mm production, a process that has taken two to three years to achieve.

TSEM reported adjusted non-GAAP EPS year over year growth to $0.31 versus $0.50 a year ago, down 48% year over year, and compared with $0.58 in Q4 2017. Adjusted EBITDA was $84 million versus $105 million, down only 17%.

Gross margin for the first quarter was 21.2% versus $25.7% a year ago and 25.0% in Q4 2017. The growth margin contraction was actually less that the incremental sales margin model would have predicted. Gross margin is expected to improve throughout 2018 as sales increase and as high margin SiG capacity increases and higher margin 300mm product ramps in the second half.

R&D costs for the quarter were $2.5 million higher than last year and M,G&A decreased $243,000. These increased costs combined with lower gross margin caused operating margin to decline six percentage points year over year. On a dollar basis it was down 40%.

After taking out a million for taxes and $1.1 million for minority income, GAAP net income was $26 million versus $46 million, while non-GAAP net income was $31 million versus $52 million.

Diluted GAAP EPS was a profit of $0.26 per share versus $0.45 last year. Adjusted non-GAAP EPS was $0.31 versus $0.50 a year ago. The diluted share count decreased 3.6%, while the all in share count increased 0.4%.

2018 Guidance

Management expects revenues in Q2 to be at $325 million plus or minus 5%. The midpoint would be down 3% from last year. The other guidance the company gave is that it expects Q4 to show at least 25% organic growth over Q1, not including revenue from Maxim or Panasonic. If we assume those two were $120 million of Q1 revenues, this points to a floor of $361 million versus $358 in Q4 2017. Management also indicated it expects Q4 2018 to have higher revenues than Q4 2017, which fits with that number. The company is now targeting single digit organic growth for the year.

Balance Sheet and Capacity

The company continues to accumulate cash and now has net **cash and marketable securities of $590 million** compared to $560 million last quarter and versus $432 million a year ago. Its quick ratio is high at 2.4xs and it has $592 million in working capital. The company is stockpiling cash to increase future capacity.

The company has a goal to reach $3.5 billion in revenues. It believes that it can grow organically to $2.3 billion to $2.5 billion with all its current and planned initiatives including the Takoma project, a new 8-inch semiconductor fab in Nanjing, China. The rest is expected to come from acquisitions.

The current fab capacity will allow the company to grow revenues and improve margins through capacity utilization. The company targets 85% utilization at its fabs. Its current fabs were at the following capacity utilization at quarter end:

	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Q4 2017	Q1 2018
Fab1 Migdal Haemek, Israel 6"	71%	70%	70%	78%	87%	90%	91%	93%	90%
Fab2 Migdal Haemek, Israel 8"	91%	91%	91%	87%	89%	85%	86%	85%	80%
Fab3 Newport Beach, California 8"	91%	88%	88%	84%	87%	86%	81%	76%	80%
Three TPSCo factories	41%	42%	42%	50%	50%	50%	58%	60%	50%
San Antonio, 8"	NA	NA	NA	NA	60%	60%	60%	60%	55%

Business Sector Overview

RF and high precision analog

In 2017, this group provided 29% of total revenues ($400 million) and grew 10% year over year, the slowest of any segment of the company. This was further broken down as 21% from mobile and 8% from infrastructure. Higher growth came from silicon germanium offerings for infrastructure and some high-end mobile applications, which grew 22% year-over-year. Going forward the company is focused on upcoming 5G standards with increased mobile data transmission rates as well as automotive sensors. In **Q1 the company saw weakness in mobile, while there was high demand for infrastructure. Mobile continues to see weakness into Q2.**

Power management

This segment was 30% of total revenues or $420 million in the 2017 year. In the first quarter, power management in discrete was strong, but **power ICs softened in the quarter due to inventory corrections**. TSEM expects orders to pick up later in Q2.

CMOS image sensor

This segment was 15% of revenues or $210 million in 2017 and provided the highest margins. Image sensors saw a strong first quarter the company sees continued demand in Q2. The end markets for this business includes medical, machine vision, digital SLR camera, cinematography, and security. In particular this business will be heavily back end weighted to the second half for applications in high end digital SLRs, cinematography and broadcasting.

Mixed Signal Applications

This segment was 26% of revenues or $360 million in 2017. Its products include: MCUA6, RFID TAG, logic standard cells, certain special CMOS embedded memory, and advanced sensors including MEMS. They serve computing, industrial, consumer and automotive end markets as well as aerospace and defense. Growth in this segment is being led by partnerships in the automotive market.

KEY POINTS

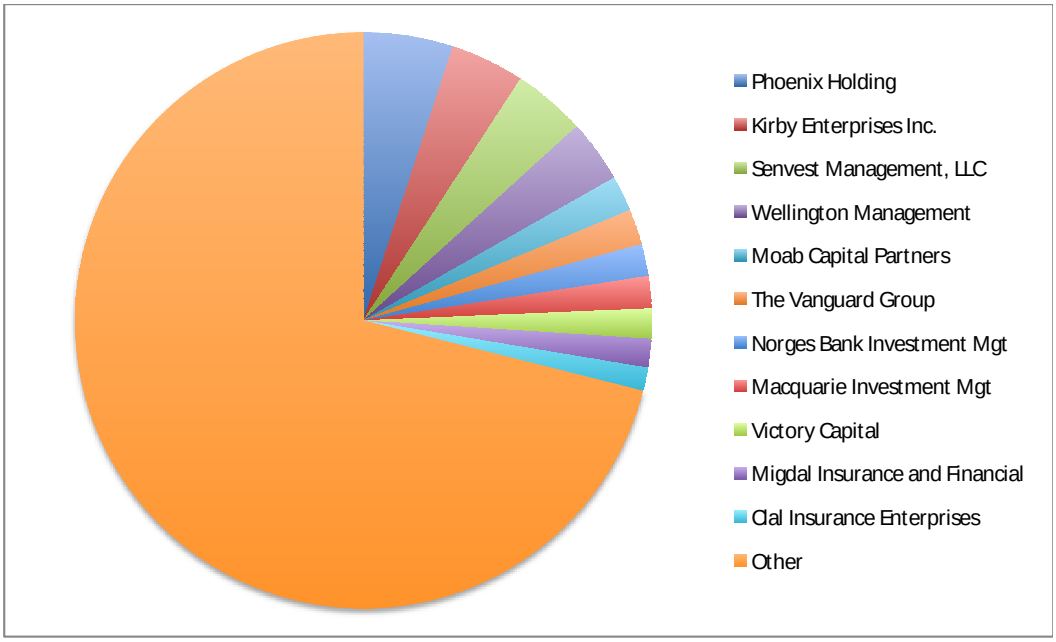
- Although the semiconductor market is typically considered cyclical, we believe that based on the end-user markets for which TowerJazz's products used, it should be less cyclical.
- As a foundry, the company has natural operating leverage given its high fixed costs. Every dollar in revenue tends to add about $0.50 to gross margin. When the company adds 12" revenues that blended percentage will trend higher as 12" can sell at 60+ gross margins.
- The company has a strong market position in high quality imaging and 3D, which is increasing being used for gesturing controls, machine vision, security anti-crash systems and self driving cars, as well as smartphones with high megapixel cameras. In this area its primary competition is Sony, which makes it a preferable source for many companies that compete with Sony.
- Having Panasonic as a partner gives the company increased stature in the industry and has attracted new customers who have a favorable disposition to working with a trusted and known company with high quality product and leading edge expertise in imaging.
- The major risk to the stock is the need to add capacity, which is currently $1.6 billion in revenue. The company can do this by increasing current fab capacities, buying a new fab either outright or in a joint venture. It has recently partnered with Tacoma to create capacity in China.
- We believe the stock is currently undervalued on a PE basis versus its peers, as well as by PE to growth rate. Peer companies trade at an average PE of 17.5 times 2018 estimated earnings and 16.2 times 2019 estimates. At an industry average PE, TSEM's stock should trade at $37.00 per share.

VALUATION

TSEM's public foundry comparables have a PE range of 15.9 to 85.3 times 2018 estimated EPS. Our Fully diluted non-GAAP EPS estimate for 2018 for TSEM is $1.94 and our 2019 EPS estimate is $2.28. Given SMI's outlying PE of 83.4, we choose to use the 2018 PE average without that stock. Using the average PE of 17.5 times for estimated 2018 EPS the group gives a stock price of $34.00 per share. Moving to 2019 estimates, TSEM could be worth 16.2 times $2.28 or $37.00. The biggest risk to the stock that an acquisition of a fab or a joint venture could incur short-term earnings dilution.

Foundry Companies									
	Ticker	**EPS 17**	**EPS 18E**	**EPS 19E**	**Price**	**PE 2017**	**PE 2018E**	**PE 2019E**	**Growth Rate**
Company									
Advanced Semiconductor	ASX	$2.60	$2.79	$3.29	$44.50	17.1	15.9	13.5	17.9%
Semiconductor Manufacturing	SMI	0.20	0.08	0.07	6.82	34.1	85.3	97.4	-12.5%
Taiwan Semiconductor	TSM	2.17	2.36	2.61	38.48	17.7	16.3	14.7	10.6%
United Microelectronics	UMC	0.13	0.13	0.15	2.64	20.3	20.3	17.6	15.4%
Average						18.4	17.5	16.2	4.5%

OWNERSHIP



Source: E*TRADE and SEC filings

INCOME STATEMENT

	March Q1 17	June Q2 17	Sept Q3 17	Dec Q4 17	March Q1 18	June Q2 18E	Sept Q3 18E	Dec Q4 18E	2017	2018E	2019E
REVENUE											
Net Revenue	330.1	345.1	354.6	357.6	312.7	335.0	360.0	375.0	1,387.3	1,382.7	1,493.3
Yr-to-yr Gr.	19%	13%	9%	5%	-5%	-3%	2%	5%	11%	0%	8%
OPERATING EXPENSES											
Cost of goods sold	245.3	254.0	265.4	268.3	246.5	256.6	267.8	274.6	1,033.0	1,045.5	1,098.6
Gross Margin	84.8	91.1	89.1	89.4	66.2	78.4	92.2	100.4	354.3	337.2	394.7
% of Sales	25.7%	26.4%	25.1%	25.0%	21.2%	23.4%	25.6%	26.8%	25.5%	24.4%	26.4%
R&D	15.8	16.4	17.1	18.4	18.3	18.3	18.3	18.3	67.7	73.1	76.0
M, G&A	16.2	17.2	16.8	16.5	16.0	16.0	16.0	16.0	66.8	64.0	65.9
One-time charges	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tot Operating Exp.	32.0	33.7	33.9	34.9	34.3	34.3	34.3	34.3	134.5	137.0	141.9
Operating Income	52.8	57.4	55.2	54.5	31.9	44.2	57.9	66.2	219.8	200.1	252.8
Operating Margin	16%	17%	16%	15%	10%	13%	16%	18%	16%	14%	17%
Yr-to-yr Gr.	71%	43%	13%	-1%	-40%	-23%	5%	21%	25.5%	-9.0%	17%
Net Interest	(2.2)	(2.1)	(1.8)	(1.8)	(0.6)	(0.5)	(0.5)	(0.5)	(7.8)	(2.0)	(2.0)
Other non-cash financing expense	(2.0)	(1.1)	(2.3)	(2.3)	(3.2)	(2.0)	(2.0)	(2.0)	(7.6)	(9.2)	(5.2)
Other income	0.5	0.1	(0.3)	(3.0)	0.0	0.0	0.0	0.0	(2.6)	0.0	0.0
Gain from acqusiition	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Profit before tax	49.0	54.4	50.9	47.4	28.1	41.7	55.5	63.7	201.8	189.0	245.6
Profit margin	14.9%	15.8%	14.4%	13.3%	9.0%	12.4%	15.4%	17.0%	14.5%	13.7%	16.4%
Taxes	(2.0)	(2.7)	3.3	101.2	(1.0)	(2.0)	(3.0)	(4.0)	99.9	(10.0)	(13.0)
Tax Rate	4.1%	4.9%	-6.5%	213.6%	3.4%	4.8%	5.4%	6.3%	-49.5%	5.3%	5.3%
Profit before non-controlling	47.0	51.7	54.2	148.6	27.2	39.7	52.5	59.7	301.7	179.0	232.6
Minority Income	(1.5)	(1.7)	1.0	(1.4)	(1.1)	(0.5)	(0.5)	(0.5)	(3.6)	(2.6)	(3.0)
GAAP Net income	45.5	50.0	55.2	147.2	26.1	39.2	52.0	59.2	298.0	176.5	229.6
Yr-to-yr Gr.	-31%	30%	8%	205%	-43%	-22%	-6%	-60%	46%	-41%	30%
Non-GAAP Net Income	52.1	54.6	61.2	59.9	31.1	44.2	57.0	64.2	227.76	196.6	245.64
GAAP primary EPS	$0.48	$0.52	$0.56	$1.50	$0.27	$0.40	$0.53	$0.60	$3.08	1.79	$2.32
Fully diluted GAAP	$0.45	$0.49	$0.54	$1.40	$0.26	$0.39	$0.51	$0.58	$2.90	1.74	$2.13
Adj Non-GAAP EPS-Fully dil.	**$0.50**	**$0.54**	**$0.60**	**$0.58**	**$0.31**	**$0.44**	**$0.56**	**$0.63**	**$2.21**	**$1.94**	**2.28**
Yr-to-yr Gr.	46%	28%	18%	9%	-48%	-28%	-14%	0%	23%	-12%	18%
Primary Share Out	93.9	96.4	97.9	98.3	98.5	98.5	98.6	99.0	96.6	98.6	99.0
Fully Diluted GAAP	104.9	105.6	106.4	106.8	101.1	101.1	101.2	101.8	105.9	101.3	107.7
All in shares	107.2	107.4	107.7	107.7	107.7	107.7	107.7	107.7	107.7	107.7	107.7

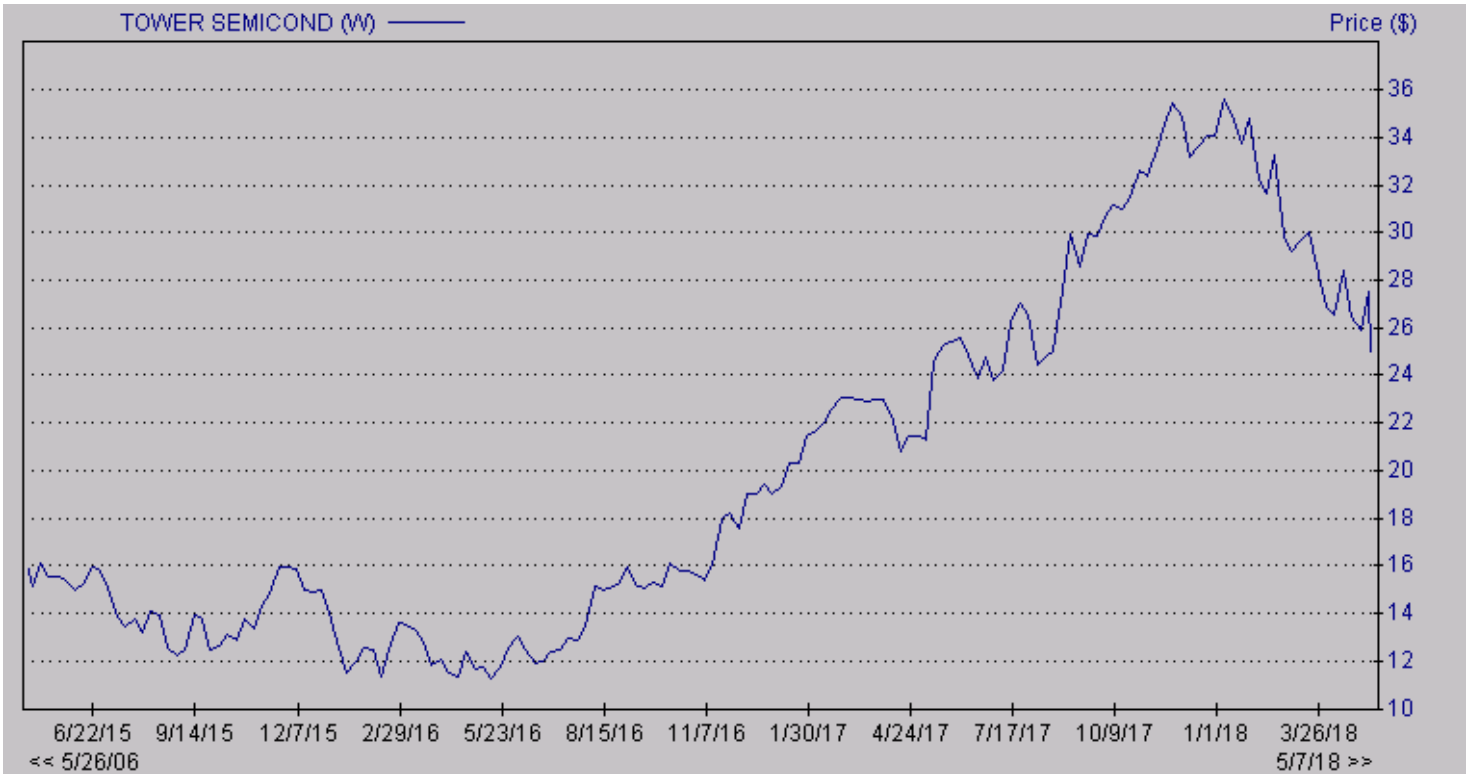
BALANCE SHEET

$ in thousands	Mar. 31, 2017	Dec. 31, 2017	Qtr-Qtr % Change	Mar. 31, 2017	Yr-Yr % Change
CURRENT ASSETS					
Cash and cash equivalents	**$464,661**	**$445,961**	4.2%	**$432,113**	7.5%
Marketable securities	**$125,105**	113,874	9.9%	**$0**	NM
Trade accounts receivable	144,352	149,666	-3.6%	133,539	8.1%
Inventories	148,367	143,315	3.5%	140,734	5.4%
Other current assets	19,175	21,516	-10.9%	27,235	-29.6%
Total current assets	**901,660**	**874,332**	3.1%	**733,621**	22.9%
LONG-TERM INVESTMENTS	28,798	26,073	10.5%	26,661	8.0%
PROPERTY AND EQUIPMENT, NET	652,816	635,124	2.8%	629,554	3.7%
INTANGIBLE ASSETS, NET	18,479	19,841	-6.9%	26,164	-29.4%
GOODWILL	7,000	7,000	0.0%	7,000	0.0%
DEFERRED TAX & OTHER ASSETS, NET	110,771	111,269	-0.4%	4,403	2415.8%
TOTAL ASSETS	1,719,524	1,673,639	2.7%	1,427,403	20.5%
CURRENT LIABILITIES					
Short term debt	**114,763**	**105,958**	8.3%	**43,331**	164.9%
Trade accounts payable	116,496	115,347	1.0%	104,084	11.9%
Deferred revenue	14,310	14,338	-0.2%	24,945	-42.6%
Other current liabilities	64,011	66,730	-4.1%	65,469	-2.2%
Total current liabilities	**309,580**	**302,373**	2.4%	**237,829**	30.2%
LONG-TERM DEBT	**229,013**	**228,723**	0.1%	**303,152**	-24.5%
LONG-TERM CUSTOMERS' ADVANCES	31,224	31,908	-2.1%	34,369	-9.2%
EMPLOYEE RELATED LIABILITIES	14,517	14,662	-1.0%	14,447	0.5%
DEFERRED TAX LIABILITY	67,435	66,267	1.8%	91,715	-26.5%
Total liabilities	651,769	643,933	1.2%	681,512	-4.4%
SHAREHOLDERS' EQUITY	1,067,755	1,029,706	3.7%	745,891	43.2%
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	$1,719,524	$1,673,639	2.7%	$1,427,403	20.5%
Current Ratio	2.9	2.9	0.7%	3.1	-5.6%
Quick Ratio	2.4	2.4	0.6%	2.5	-2.4%
Working Capital	592,080	571,959	3.5%	495,792	19.4%
Debt Percent of Assets	20%	20%	0.0%	24%	-17.6%
Debt to Equity	0.3	0.3	-0.9%	0.5	-30.7%

CASH FLOW

	3-Mo 31-Mar-16	3-Mo 30-Jun-16	3-Mo 30-Sep-16	3-Mo 31-Dec-16	Year 2016	3-Mo 31-Mar-17	3-Mo 30-Jun-17	3-Mo 30-Sep-17	3-Mo 31-Dec-17	Year 2017	3-Mo 31-Mar-18
CASH FLOWS - OPERATING ACTIVITIES											
Net profit (loss)	$ 64,548	$ 40,347	$ 52,018	$ 52,253	$ 209,166	$ 47,046	$ 51,727	$ 54,241	$ 148,642	$ 301,656	$ 27,181
Income and non-cash expense items:											
Depreciation and amortization	48,584	48,117	49,194	51,711	197,606	49,698	52,389	55,014	51,310	208,411	53,977
Financing expense associated with deb. series F	0	0	0	150	150	0	0	0	0	0	0
Effect of fair value measurement on debt	1,401	6,700	2,808	(2,617)	8,292	6,888	4,873	(1,177)	2,281	12,865	(1,740)
Other expense (income), net	0	(4,362)	(5,081)	121	(9,322)	(511)	(142)	253	3,027	2,627	(22)
Gain from acquisition	(41,140)	(10,158)	0	827	(50,471)	0	0	0	0	0	0
Changes in assets and liabilities:											
Trade accounts receivable	(8,519)	(1,916)	(1,469)	(18,200)	(30,104)	9,529	(17,242)	361	788	(6,564)	8,089
Other receivables and other current assets	822	(5,476)	4,328	61	(265)	(4,439)	(7,307)	2,980	445	(8,321)	3,370
Inventories	(9,224)	(6,300)	(6,245)	(300)	(22,069)	(1,421)	1,688	(4,636)	92	(4,277)	(2,692)
Trade accounts payable	10,143	130	2,624	(7,347)	5,550	(4,128)	(6,530)	4,795	(2,786)	(8,649)	(6,313)
Deferred revenue and customers' advances	15,030	8,294	(5,377)	5,634	23,581	(8,735)	(4,564)	9,378	(17,882)	(21,803)	(712)
Other current liabilities	(1,953)	11,194	(6,938)	(2,448)	(145)	(9,090)	12,866	(13,760)	1,765	(8,219)	(4,219)
Employee related liabilities	(245)	0	0	(385)	0	(257)	(234)	(274)	(2,482)	(3,247)	(387)
Deferred tax liability, net	(2,005)	(4,789)	548	2,375	(3,703)	(2,440)	(3,230)	(3,259)	(99,915)	(108,844)	(1,531)
Other long-term liabilities	0	0	0	0	(798)	0	0	0	0	0	0
Net cash provided by operating activities	**77,442**	**81,781**	**86,410**	**82,220**	**327,468**	**82,140**	**84,294**	**103,916**	**85,285**	**355,635**	**75,001**
CASH FLOWS - INVESTING ACTIVITIES											
Investments in property and equipment, net	**(57,533)**	**(54,323)**	**(54,947)**	**(42,821)**	**(209,624)**	**(40,348)**	**$ (41,312)**	**$ (41,708)**	**(41,349)**	**(164,717)**	**(40,047)**
Interest bearing deposits, including designated deposits	10,000	19,600	(12,500)	(108)	16,992	(5,118)	0	(49,869)	(64,867)	(114,736)	(14,963)
Net cash provided by (used in) investing activities	(47,533)	(34,723)	(67,447)	(42,929)	(192,632)	(45,466)	(41,312)	(91,577)	(106,216)	(279,453)	(55,010)
CASH FLOWS - FINANCING ACTIVITIES											
Exercise of warrants and options	5,881	360	21,918	10,644	38,803	12,756	14,254	1,027	3,278	31,315	658
Proceeds from long-term loans	17,000	27,444	8,554	(52,998)	0	0	$ 0	$ 0	0	0	0
Debt repayment	(10,254)	0	0	47,345	37,091	(11,805)	$ (5,655)	$ (15,932)	(16,863)	(50,255)	(6,656)
Debenture repayment	0	0	0	0	0	0	$ 0	$ 0	0	0	0
TPSCo dividend to Panasonic	(2,563)	0	0	0	(2,563)	(4,378)	$ 0	$ 0	0	(4,378)	0
Net cash used in financing activities	10,064	27,804	30,472	4,991	73,331	(3,427)	8,599	(14,905)	(13,585)	(23,318)	(5,998)
Effect of foreign exchange rate change	9,029	11,623	2,336	(17,353)	5,635	4,371	(91)	(630)	70	3,720	4,707
INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	49,002	86,485	51,771	26,544	213,802	37,618	$ 51,490	$ 51,771	$ (34,446)	56,584	18,700
CASH AND CASH EQUIVALENTS - BEGINNING OF PERIOD	175,575	224,577	311,062	362,833	175,575	355,284	432,113	311,062	480,407	389,377	445,961
CASH AND CASH EQUIVALENTS - END OF PERIOD	224,577	311,062	362,833	389,377	389,377	392,902	483,603	362,833	445,961	445,961	464,661

HISTORICAL STOCK PRICE



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