

A99 - Diode

A99 - Diode

B99 - SS Transistor

WSTS Semiconductor Forecast

B99 - SS Transistor

[illegible]

Pwr Transist
Code C99

	2019		
Q4	Total	Q1	Q2

2020	2021	2022
Total	Total	Total

[illegible]

Bipolar PwrTr Code CA
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	2019		
Q4	Total	Q1	Q2

2020	2021	2022
Total	Total	Total

[illegible]

[illegible]

MOSFET PwrTr Code CC

2019		2020	
Q4	Total	Q1	Q2

2020	2021	2022
Total	Total	Total

[illegible]

D99 - Rectifier

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D99 - Rectifier

[illegible]

E99 - Thyristor

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E99 - Thyristor

[illegible]

Other Discrete Code G99

	2019		
Q4	Total	Q1	Q2

2020	2021	2022
Total	Total	Total

[illegible]

S3 - Discrete Total

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S3 - Discrete Total

Discrete Total Code S3	2017 Total	2018 Total	Q1	Q2	2019 Q3	2019 Q4	2019 Total	Q1	Q2	2020 Q3	Q4	2020 Total	2021 Total	2022 Total
Amer - \$M	1842.4	2260.8	629.2	632.0	648.9	639.4	2549.5	650.7	668.6	682.6	666.2	2668.0	2765.6	2863.7
3/3 % \$	8.1	22.7	6.9	0.4	2.7	-1.5	12.8	1.8	2.8	2.1	-2.4	4.6	3.7	3.5
% of World	8.5	9.4	10.6	10.4	10.3	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.3	10.3
Europe - \$M	3757.4	4303.8	1153.6	1149.6	1183.1	1147.6	4633.9	1184.6	1213.9	1242.1	1204.9	4845.5	5005.9	5176.8
3/3 % \$	11.9	14.5	13.0	-0.4	2.9	-3.0	7.7	3.2	2.5	2.3	-3.0	4.6	3.3	3.4
% of World	17.4	17.9	19.4	18.9	18.8	18.7	19.0	19.0	18.9	18.8	18.8	18.9	18.7	18.6
Japan - \$M	3175.9	3410.4	861.4	860.9	889.7	865.4	3477.3	877.0	900.2	922.8	896.4	3596.4	3694.3	3800.2
3/3 % \$	8.4	7.4	2.9	-0.1	3.3	-2.7	2.0	1.3	2.7	2.5	-2.9	3.4	2.7	2.9
% of World	14.7	14.1	14.5	14.1	14.1	14.1	14.2	14.0	14.0	14.0	14.0	14.0	13.8	13.6
JPN - ¥100M	3561.9	3764.7	948.8	948.3	980.1	953.3	3830.5	966.0	991.6	1016.6	987.5	3961.7	4069.6	4186.1
3/3 % ¥	12.0	5.7	0.5	-0.1	3.3	-2.7	1.7	1.3	2.7	2.5	-2.9	3.4	2.7	2.9
Asia Pac - \$M	12875.7	14126.8	3296.8	3443.3	3571.3	3477.9	13789.3	3530.6	3651.0	3746.0	3651.7	14579.3	15317.7	16056.9
3/3 % \$	12.7	9.7	-6.2	4.4	3.7	-2.6	-2.4	1.5	3.4	2.6	-2.5	5.7	5.1	4.8
% of World	59.5	58.6	55.5	56.6	56.7	56.7	56.4	56.6	56.7	56.8	56.9	56.8	57.2	57.6
World - \$M	21651.3	24101.8	5940.9	6085.8	6293.0	6130.4	24450.0	6242.8	6433.7	6593.5	6419.2	25689.2	26783.5	27897.5
3/3 % \$	11.5	11.3	-0.4	2.4	3.4	-2.6	1.4	1.8	3.1	2.5	-2.6	5.1	4.3	4.2
A99 - Diode	2946.3	3146.5	699.4	725.9	758.0	745.5	2928.8	738.0	769.6	792.7	765.1	3065.5	3184.2	3277.3
3/3 % \$	16.4	6.8	-9.1	3.8	4.4	-1.7	-6.9	-1.0	4.3	3.0	-3.5	4.7	3.9	2.9
B99 - SS Transistor	1965.6	2113.1	496.7	510.8	526.2	517.3	2050.9	517.7	534.0	546.0	533.1	2130.8	2200.2	2261.5
3/3 % \$	5.6	7.5	-5.9	2.8	3.0	-1.7	-2.9	0.1	3.1	2.2	-2.3	3.9	3.3	2.8
C99 - Pwr Transist	12628.4	14445.4	3752.7	3808.2	3935.4	3814.2	15310.5	3929.8	4044.3	4156.5	4053.4	16184.0	16945.0	17749.8
3/3 % \$	9.8	14.4	3.4	1.5	3.3	-3.1	6.0	3.0	2.9	2.8	-2.5	5.7	4.7	4.7
D99 - Rectifier	3262.2	3463.1	791.5	822.0	848.9	838.8	3301.2	842.8	866.7	876.1	853.0	3438.5	3558.2	3686.0
3/3 % \$	18.3	6.2	-3.4	3.9	3.3	-1.2	-4.7	0.5	2.8	1.1	-2.6	4.2	3.5	3.6
E99 - Thyristor	718.4	779.0	170.1	184.3	189.0	180.3	723.7	181.2	185.2	187.1	179.5	733.1	756.4	780.7
3/3 % \$	10.5	8.4	-5.8	8.4	2.5	-4.6	-7.1	0.5	2.2	1.0	-4.1	1.3	3.2	3.2
G99 - Other Discrete	130.5	154.8	30.6	34.6	35.4	34.3	134.9	33.2	33.8	35.2	35.0	137.3	139.4	142.2
3/3 % \$	14.6	18.6	-19.2	13.0	2.5	-3.2	-12.8	-3.2	1.9	4.0	-0.5	1.8	1.5	2.0
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F99 - Optoelectronics

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F99 - Optoelectronics

Optoelectronics Code F99	2017 Total	2018 Total	Q1	Q2	2019 Q3	2019 Q4	2019 Total	Q1	Q2	2020 Q3	Q4	2020 Total	2021 Total	2022 Total
Amer - \$M	6232.3	6099.7	1120.7	1148.5	1239.6	1260.0	4768.8	1202.0	1233.3	1306.7	1297.5	5039.6	5283.8	5552.2
3/3 % \$	38.6	-2.1	-30.9	2.5	7.9	1.6	-21.8	-4.6	2.6	6.0	-0.7	5.7	4.8	5.1
% of World	17.9	16.0	12.6	12.7	12.7	12.9	12.7	12.7	12.7	12.7	12.7	12.7	12.6	12.7
Europe - \$M	2877.8	3088.5	858.6	879.9	944.6	939.5	3622.7	915.9	939.7	995.6	988.6	3839.9	4048.1	4253.8
3/3 % \$	14.6	7.3	15.8	2.5	7.3	-0.5	17.3	-2.5	2.6	6.0	-0.7	6.0	5.4	5.1
% of World	8.3	8.1	9.7	9.7	9.7	9.6	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7
Japan - \$M	5736.1	5474.4	1276.4	1308.1	1404.2	1396.6	5385.3	1339.1	1373.9	1455.7	1445.4	5614.0	5896.9	6156.1
3/3 % \$	-0.2	-4.6	-5.9	2.5	7.3	-0.5	-1.6	-4.1	2.6	6.0	-0.7	4.2	5.0	4.4
% of World	16.5	14.4	14.4	14.4	14.4	14.3	14.4	14.1	14.1	14.1	14.1	14.1	14.1	14.0
JPN - ¥100M	6435.8	6043.7	1406.1	1441.0	1546.9	1538.4	5932.3	1475.1	1513.4	1603.5	1592.2	6184.3	6495.8	6781.4
3/3 % ¥	2.5	-6.1	-8.1	2.5	7.3	-0.5	-1.8	-4.1	2.6	6.0	-0.7	4.2	5.0	4.4
Asia Pac - \$M	19966.7	23369.8	5636.3	5742.3	6151.9	6166.8	23697.3	6012.0	6168.5	6535.6	6489.7	25205.7	26572.8	27922.7
3/3 % \$	3.8	17.0	-5.7	1.9	7.1	0.2	1.4	-2.5	2.6	6.0	-0.7	6.4	5.4	5.1
% of World	57.4	61.4	63.4	63.2	63.2	63.2	63.2	63.5	63.5	63.5	63.5	63.5	63.6	63.6
World - \$M	34812.8	38032.3	8892.1	9078.8	9740.4	9762.9	37474.2	9469.0	9715.4	10293.5	10221.3	39699.2	41801.5	43884.8
3/3 % \$	8.8	9.2	-8.3	2.1	7.3	0.2	-1.5	-3.0	2.6	6.0	-0.7	5.9	5.3	5.0
F1 - Display	334.4	324.9	81.2	81.7	83.4	81.3	327.6	82.3	82.3	83.8	83.1	331.5	347.1	366.3
3/3 % \$	-18.2	-2.8	0.8	0.5	2.1	-2.5	0.8	1.2	0.1	1.7	-0.8	1.2	4.7	5.5
F10 - LIGHT SENSOR	788.9	1118.9	323.6	341.0	469.5	539.7	1673.8	430.9	418.4	509.7	550.8	1909.8	2137.0	2425.5
3/3 % \$	48.0	41.8	-19.3	5.4	37.7	15.0	49.6	-20.2	-2.9	21.8	8.1	14.1	11.9	13.5
F2 - Lamp	11864.1	13193.7	3136.3	3164.5	3236.6	3242.1	12779.5	3262.0	3351.1	3398.1	3339.6	13350.9	13937.9	14458.2
3/3 % \$	0.4	11.2	-2.7	0.9	2.3	0.2	-3.1	0.6	2.7	1.4	-1.7	4.5	4.4	3.7
F3 - Coupler	1528.2	1646.3	381.9	389.0	395.6	393.2	1559.7	398.1	411.9	419.7	404.0	1633.8	1718.1	1779.7
3/3 % \$	10.8	7.7	-0.4	1.9	1.7	-0.6	-5.3	1.2	3.5	1.9	-3.7	4.8	5.2	3.6
F5 - Image_Sensor	13863.0	15477.2	3618.8	3756.7	4169.9	4126.7	15672.1	3901.4	4044.2	4431.5	4423.3	16800.5	17724.5	18717.1
3/3 % \$	16.2	11.6	-13.3	3.8	11.0	-1.0	1.3	-5.5	3.7	9.6	-0.2	7.2	5.5	5.6
F6 - Oth_Opto	3606.1	3112.2	551.1	534.2	543.4	555.3	2184.1	554.3	550.5	565.5	550.1	2220.5	2298.4	2339.4
3/3 % \$	9.2	-13.7	-17.5	-3.1	1.7	2.2	-29.8	-0.2	-0.7	2.7	-2.7	1.7	3.5	1.8
F7 - Infrared	863.4	1107.0	265.0	274.8	282.1	277.3	1099.2	277.8	289.6	297.7	289.7	1154.9	1211.5	1265.7
3/3 % \$	9.8	28.2	-0.5	3.7	2.7	-1.7	-0.7	0.2	4.3	2.8	-2.7	5.1	4.9	4.5
F8 - Lsr_Pickup	380.5	341.6	77.3	77.8	79.2	73.7	308.0	73.1	74.0	75.5	71.8	294.4	302.6	305.0
3/3 % \$	-18.0	-10.2	-3.6	0.7	1.8	-6.9	-9.8	-0.9	1.2	2.1	-5.0	-4.4	2.8	0.8
F9 - Lsr_Transmitter	1584.2	1710.4	457.0	459.1	480.7	473.5	1870.3	489.0	493.3	512.0	508.8	2003.1	2124.4	2228.0
3/3 % \$	16.1	8.0	9.4	0.5	4.7	-1.5	9.3	3.3	0.9	3.8	-0.6	7.1	6.1	4.9
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

H99 - Sensors

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H99 - Sensors

[illegible]

J99 - Analog

WSTS Semiconductor Forecast

J99 - Analog

[illegible]

J0 - GP Analog

WSTS Semiconductor Forecast

J0 - GP Analog

[illegible]

JA - App Spec Analog

WSTS Semiconductor Forecast

JA - App Spec Analog

[illegible]

JB - Consumer Analog

WSTS Semiconductor Forecast

JB - Consumer Analog

[illegible]

JC - Computer Analog

WSTS Semiconductor Forecast

JC - Computer Analog

[illegible]

JD - Communic Analog

WSTS Semiconductor Forecast

JD - Communic Analog

[illegible]

Automotive Analog
Code JE

Q4	2019 Total	Q1	Q2
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2020 Total	2021 Total	2022 Total
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[illegible]

Industry Analog
Code JF

Q4	2019 Total	Q1	Q2
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2020	2021	2022
Total	Total	Total

[illegible]

P99 - MOS Micro

WSTS Semiconductor Forecast

P99 - MOS Micro

[illegible]

P1 - MOS MPU

WSTS Semiconductor Forecast

P1 - MOS MPU

[illegible]

MOS MCU Code P2

	2019
Q4	Total

2021	2022
Total	Total

[illegible]

P4 - MOS DSP

WSTS Semiconductor Forecast

P4 - MOS DSP

MOS DSP Code P4	2017 Total	2018 Total			2019 Q3	2019 Q4	2019 Total			2020 Q3	2020 Q4	2020 Total	2021 Total	2022 Total
Amer - \$M	538.5	645.8	128.9	139.3	142.7	136.3	547.3	139.5	139.5	139.5	139.5	557.9	577.1	603.0
3/3 % \$	18.9	19.9	-9.9	8.0	2.5	-4.5	-15.3	2.3	0.0	0.0	0.0	1.9	3.4	4.5
% of World	16.4	19.8	18.0	18.6	18.6	18.6	18.5	18.7	18.7	18.7	18.7	18.7	18.8	19.0
Europe - \$M	1162.4	1112.9	279.6	266.2	272.8	260.5	1079.0	278.2	278.2	278.2	278.2	1112.7	1156.9	1196.3
3/3 % \$	26.2	-4.3	1.9	-4.8	2.5	-4.5	-3.0	6.8	0.0	0.0	0.0	3.1	4.0	3.4
% of World	35.4	34.1	39.0	35.6	35.6	35.6	36.4	37.4	37.4	37.4	37.4	37.4	37.6	37.8
Japan - \$M	247.4	211.4	43.3	46.7	47.9	45.7	183.6	45.9	45.9	45.9	45.9	183.5	188.2	192.1
3/3 % \$	-3.4	-14.5	-16.6	8.0	2.5	-4.5	-13.2	0.3	0.0	0.0	0.0	0.0	2.5	2.1
% of World	7.5	6.5	6.0	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.1	6.1
JPN - ¥100M	277.5	233.3	47.7	51.5	52.8	50.4	202.3	50.5	50.5	50.5	50.5	202.2	207.3	211.6
3/3 % ¥	-0.1	-15.9	-18.5	8.0	2.5	-4.5	-13.3	0.3	0.0	0.0	0.0	0.0	2.5	2.1
Asia Pac - \$M	1337.4	1294.9	264.8	295.9	303.3	289.6	1153.6	280.8	280.8	280.8	280.8	1123.2	1152.2	1176.1
3/3 % \$	7.9	-3.2	-5.8	11.7	2.5	-4.5	-10.9	-3.0	0.0	0.0	0.0	-2.6	2.6	2.1
% of World	40.7	39.7	37.0	39.6	39.6	39.6	38.9	37.7	37.7	37.7	37.7	37.7	37.5	37.1
World - \$M	3285.8	3265.0	716.6	748.1	766.7	732.1	2963.4	744.4	744.4	744.4	744.4	2977.4	3074.4	3167.6
3/3 % \$	14.5	-0.6	-4.5	4.4	2.5	-4.5	-9.2	1.7	0.0	0.0	0.0	0.5	3.3	3.0
P4a - Consumer	760.5	476.7	69.5	72.5	74.3	71.0	287.3	72.2	72.2	72.2	72.2	288.7	298.1	307.1
3/3 % \$	14.4	-37.3	-11.1	4.4	2.5	-4.5	-39.7	1.7	0.0	0.0	0.0	0.5	3.3	3.0
P4b - Computer	9.6	8.9	1.3	1.4	1.4	1.4	5.5	1.4	1.4	1.4	1.4	5.6	5.7	5.9
3/3 % \$	-33.3	-8.0	-28.3	4.4	2.5	-4.5	-37.6	1.7	0.0	0.0	0.0	0.5	3.3	3.0
P4d - Wireless Comn	246.4	297.5	114.7	119.7	122.7	117.1	474.2	119.1	119.1	119.1	119.1	476.4	491.9	506.8
3/3 % \$	7.6	20.7	0.5	4.4	2.5	-4.5	59.4	1.7	0.0	0.0	0.0	0.5	3.3	3.0
P4g - Wired_Comm	18.9	25.4	3.0	3.1	3.2	3.1	12.4	3.1	3.1	3.1	3.1	12.5	12.9	13.3
3/3 % \$	-39.6	34.3	-62.7	4.4	2.5	-4.5	-51.0	1.7	0.0	0.0	0.0	0.5	3.3	3.0
P4h - Automotive	1185.5	1341.2	290.9	303.7	311.2	297.2	1203.0	302.2	302.2	302.2	302.2	1208.7	1248.1	1285.9
3/3 % \$	24.7	13.1	-0.8	4.4	2.5	-4.5	-10.3	1.7	0.0	0.0	0.0	0.5	3.3	3.0
P4i - Multipurpose	1064.9	1115.4	237.2	247.6	253.8	242.3	981.0	246.4	246.4	246.4	246.4	985.6	1017.7	1048.5
3/3 % \$	8.8	4.7	-6.9	4.4	2.5	-4.5	-12.1	1.7	0.0	0.0	0.0	0.5	3.3	3.0
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L99 - MOS Logic

WSTS Semiconductor Forecast

L99 - MOS Logic

[illegible]

MOS Std Logic	
Code LS	

Q4	2019 Total	Q1	Q2
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2020	2021	2022
Total	Total	Total

MOS Std Logic Code LS	2017 Total	2018 Total			2019 Q3	2019 Q4	2019 Total			2020 Q3	2020 Q4	2020 Total	2021 Total	2022 Total
Amer - \$M	3298.0	4072.3	1192.3	1214.7	1234.1	1231.5	4872.6	1267.8	1290.7	1314.3	1315.8	5188.5	5474.7	5828.3
3/3 % \$	5.9	23.5	0.5	1.9	1.6	-0.2	19.7	2.9	1.8	1.8	0.1	6.5	5.5	6.5
% of World	15.2	17.9	20.5	20.6	20.5	20.4	20.5	20.9	21.0	21.0	21.0	20.9	21.3	21.9
Europe - \$M	2269.8	2966.9	730.3	745.2	757.7	752.7	2985.8	742.3	755.9	770.8	770.6	3039.6	3125.8	3252.9
3/3 % \$	17.3	30.7	-13.7	2.0	1.7	-0.7	0.6	-1.4	1.8	2.0	0.0	1.8	2.8	4.1
% of World	10.4	13.0	12.6	12.7	12.6	12.5	12.6	12.3	12.3	12.3	12.3	12.3	12.2	12.2
Japan - \$M	2338.7	2305.5	538.6	549.6	560.5	559.4	2208.1	575.7	585.5	595.8	596.6	2353.6	2445.0	2527.3
3/3 % \$	-6.4	-1.4	-9.6	2.0	2.0	-0.2	-4.2	2.9	1.7	1.8	0.1	6.6	3.9	3.4
% of World	10.8	10.1	9.3	9.3	9.3	9.3	9.3	9.5	9.5	9.5	9.5	9.5	9.5	9.5
JPN - ¥100M	2623.5	2546.1	593.3	605.4	617.5	616.2	2432.4	634.2	645.0	656.3	657.2	2592.6	2693.3	2783.9
3/3 % ¥	-3.5	-3.0	-11.7	2.0	2.0	-0.2	-4.5	2.9	1.7	1.8	0.1	6.6	3.9	3.4
Asia Pac - \$M	13815.3	13406.6	3351.6	3377.2	3464.3	3491.5	13684.6	3471.5	3527.3	3589.6	3596.9	14185.3	14659.3	15062.0
3/3 % \$	7.6	-3.0	-4.8	0.8	2.6	0.8	2.1	-0.6	1.6	1.8	0.2	3.7	3.3	2.7
% of World	63.6	58.9	57.7	57.4	57.6	57.9	57.6	57.3	57.3	57.2	57.3	57.3	57.0	56.5
World - \$M	21721.9	22751.3	5812.8	5886.6	6016.6	6035.2	23751.2	6057.3	6159.4	6270.4	6279.8	24767.0	25704.8	26670.4
3/3 % \$	6.5	4.7	-5.5	1.3	2.2	0.3	4.4	0.4	1.7	1.8	0.2	4.3	3.8	3.8
L1 - Bipolar Digital	55.2	59.1	12.8	14.4	13.9	13.4	54.4	13.4	13.5	13.5	13.6	54.1	52.9	52.8
3/3 % \$	-2.7	6.9	-11.5	12.4	-3.3	-3.2	-7.8	0.1	0.8	-0.4	0.5	-0.7	-2.1	-0.3
L2a - MOS GP Logic	1660.1	1447.4	304.7	316.3	340.7	331.4	1293.1	324.3	329.7	341.0	335.7	1330.6	1363.9	1402.1
3/3 % \$	10.4	-12.8	-6.9	3.8	7.7	-2.7	-10.7	-2.1	1.7	3.4	-1.5	2.9	2.5	2.8
L2b - MOS Gate Arra	86.9	75.3	15.5	17.1	16.7	15.9	65.1	15.8	15.9	16.0	16.1	63.8	62.2	61.8
3/3 % \$	7.0	-13.4	-6.1	10.4	-2.6	-4.5	-13.4	-0.4	0.3	0.5	0.9	-2.0	-2.5	-0.6
L2c - MOS Std Cell, f	10791.7	12099.1	3295.4	3353.7	3390.9	3382.5	13422.4	3421.0	3485.7	3551.2	3555.7	14013.7	14562.9	15298.6
3/3 % \$	3.5	12.1	3.7	1.8	1.1	-0.2	10.9	1.1	1.9	1.9	0.1	4.4	3.9	5.1
L3 - MOS Display Dri	5905.6	5821.5	1423.7	1401.2	1452.4	1477.5	5754.8	1477.5	1499.2	1526.4	1532.9	6036.1	6247.8	6355.2
3/3 % \$	8.9	-1.4	-19.4	-1.6	3.7	1.7	-1.1	0.0	1.5	1.8	0.4	4.9	3.5	1.7
L4 - MOS Touch Scree	3222.4	3249.0	760.6	784.0	802.1	814.4	3161.2	805.2	815.4	822.3	825.8	3268.7	3415.0	3499.8
3/3 % \$	11.0	0.8	-10.3	3.1	2.3	1.5	-2.7	-1.1	1.3	0.8	0.4	3.4	4.5	2.5
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L1 - Bipolar Digital

WSTS Semiconductor Forecast

L1 - Bipolar Digital

[illegible]

MOS GP Logic
Code L2a

Q4	2019 Total	Q1	Q2
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2020	2021	2022
Total	Total	Total

[illegible]

MOS Gate Arrays

Q4	2019 Total	Q1	Q2
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2020	2021	2022
Total	Total	Total

[illegible]

MOS Std Cell, FPLD
Code L2c

	2019		
Q4	Total	Q1	Q2

2020	2021	2022
Total	Total	Total

[illegible]

L3 - MOS Display Driver

WSTS Semiconductor Forecast

L3 - MOS Display Driver

[illegible]

MOS Touch Screen (Code L4)

	2019		
Q4	Total	Q1	Q2

0	2020	2021	2022
3 Q4	Total	Total	Total

[illegible]

LA - MOS SP Logic

WSTS Semiconductor Forecast

LA - MOS SP Logic

[illegible]

L5 - Consumer SP Logic

WSTS Semiconductor Forecast

L5 - Consumer SP Logic

[illegible]

L6 - Computer SP Logic

WSTS Semiconductor Forecast

L6 - Computer SP Logic

[illegible]

Communication SP I
Code L7

	2019
Q4	Total

	2020	2021	2022
Q4	Total	Total	Total

Communication SP L	2017	2018			2019	2019			2020	2020	2020	2021	2022	
Code L7	Total	Total	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total	Total	
Amer - \$M	9597.6	9723.6	1977.8	1904.2	2051.0	2134.5	8067.5	2048.5	2089.9	2171.1	2226.5	8536.0	8884.3	9280.9
3/3 % \$	2.5	1.3	-38.5	-3.7	7.7	4.1	-17.0	-4.0	2.0	3.9	2.6	5.8	4.1	4.5
% of World	21.9	22.0	20.8	18.8	19.4	19.6	19.6	19.7	19.7	19.7	19.7	19.7	19.6	19.8
Europe - \$M	1360.3	1381.6	323.5	341.8	341.6	345.4	1352.3	328.9	335.5	348.6	357.5	1370.5	1393.8	1423.4
3/3 % \$	22.3	1.6	-7.3	5.7	-0.1	1.1	-2.1	-4.8	2.0	3.9	2.6	1.3	1.7	2.1
% of World	3.1	3.1	3.4	3.4	3.2	3.2	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.0
Japan - \$M	2298.0	2566.7	473.6	500.5	500.2	505.5	1979.8	486.0	495.9	515.1	528.3	2025.3	2077.6	2140.4
3/3 % \$	25.0	11.7	-27.3	5.7	-0.1	1.1	-22.9	-3.8	2.0	3.9	2.6	2.3	2.6	3.0
% of World	5.2	5.8	5.0	4.9	4.7	4.6	4.8	4.7	4.7	4.7	4.7	4.7	4.6	4.6
JPN - ¥100M	2577.0	2835.1	521.7	551.3	551.0	556.8	2180.8	535.4	546.2	567.4	581.9	2231.0	2288.6	2357.8
3/3 % ¥	29.6	10.0	-28.9	5.7	-0.1	1.1	-23.1	-3.8	2.0	3.9	2.6	2.3	2.6	3.0
Asia Pac - \$M	30651.0	30459.3	6742.1	7371.5	7680.9	7917.2	29711.8	7513.9	7665.8	7963.5	8166.8	31310.0	33014.4	34040.1
3/3 % \$	8.2	-0.6	-8.8	9.3	4.2	3.1	-2.5	-5.1	2.0	3.9	2.6	5.4	5.4	3.1
% of World	69.8	69.0	70.8	72.9	72.6	72.6	72.3	72.4	72.4	72.4	72.4	72.4	72.8	72.6
World - \$M	43906.9	44131.3	9517.0	10118.1	10573.8	10902.6	41111.4	10377.3	10587.1	10998.3	11279.1	43241.8	45370.1	46884.8
3/3 % \$	8.0	0.5	-18.0	6.3	4.5	3.1	-6.8	-4.8	2.0	3.9	2.6	5.2	4.9	3.3
L7a - Cell Phone	2876.2	3020.7	652.5	655.7	678.0	700.5	2686.7	662.6	663.9	690.5	710.1	2727.0	2821.2	2898.7
3/3 % \$	10.3	5.0	-6.9	0.5	3.4	3.3	-11.1	-5.4	0.2	4.0	2.8	1.5	3.5	2.7
L7b - Infrastructure	155.6	142.1	-	-	-	-	0.0	-	-	-	-	0.0	0.0	0.0
3/3 % \$	5.7	-8.7	-	-	-	-	-100.0	-	-	-	-	0.0	0.0	0.0
L7c - Short Range	8141.2	9016.7	1769.4	1901.6	2023.3	2067.8	7762.1	1992.7	2071.2	2192.6	2206.0	8462.4	8995.5	9415.3
3/3 % \$	27.5	10.8	-19.5	7.5	6.4	2.2	-13.9	-3.6	3.9	5.9	0.6	9.0	6.3	4.7
L7d - Other Wireless	186.3	209.8	85.8	89.7	92.0	97.3	364.8	98.9	96.8	98.4	102.6	396.7	422.4	443.2
3/3 % \$	62.8	12.6	45.4	4.5	2.7	5.7	73.9	1.7	-2.2	1.7	4.3	8.8	6.5	4.9
L7e - Wired Comm	7804.2	8213.9	2033.6	2171.8	2269.2	2334.0	8808.5	2250.6	2302.1	2374.1	2401.4	9328.3	9807.9	10214.2
3/3 % \$	7.9	5.2	-4.5	6.8	4.5	2.9	7.2	-3.6	2.3	3.1	1.1	5.9	5.1	4.1
L7f - Application Pro	24743.5	23528.1	4975.8	5299.3	5511.2	5703.0	21489.3	5372.6	5453.2	5642.7	5858.9	22327.3	23323.1	23913.3
3/3 % \$	2.4	-4.9	-23.3	6.5	4.0	3.5	-8.7	-5.8	1.5	3.5	3.8	3.9	4.5	2.5
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Automotive SP Logic
Code L8

Q4	2019 Total	Q1	Q2
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2020 Total	2021 Total	2022 Total
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**Multipurpose SP Loç
Code L9**

	2019
Q4	Total

	2020	2021
Q4	Total	Total

[illegible]

MOS Memory Code M99	
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Q4	2019 Total	Q1	Q2
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2020	2021	2022
Total	Total	Total

MOS Memory Code M99	2017 Total	2018 Total			2019 Q3	2019 Q4	2019 Total			2020 Q3		2020 Total	2021 Total	2022 Total
			Q1	Q2				Q1	Q2		Q4			
Amer - \$M	41208.5	51591.6	6414.0	6890.8	8005.2	8123.6	29433.7	7378.5	7565.4	8940.4	8987.4	32871.7	36274.5	39483.2
3/3 % \$	80.1	25.2	-42.0	7.4	16.2	1.5	-42.9	-9.2	2.5	18.2	0.5	11.7	10.4	8.8
% of World	33.2	32.7	24.7	26.7	27.7	28.1	26.9	27.5	27.8	28.2	28.9	28.1	28.1	27.7
Europe - \$M	6436.4	7987.0	1451.1	1360.3	1489.5	1415.2	5716.2	1430.9	1450.1	1669.9	1608.7	6159.6	6746.9	7423.7
3/3 % \$	65.6	24.1	-25.7	-6.3	9.5	-5.0	-28.4	1.1	1.3	15.2	-3.7	7.8	9.5	10.0
% of World	5.2	5.1	5.6	5.3	5.2	4.9	5.2	5.3	5.3	5.3	5.2	5.3	5.2	5.2
Japan - \$M	6250.6	7117.3	1176.4	1147.7	1300.9	1206.3	4831.3	1169.5	1188.7	1393.1	1343.4	5094.8	5388.1	5855.2
3/3 % \$	30.9	13.9	-27.7	-2.4	13.3	-7.3	-32.1	-3.0	1.6	17.2	-3.6	5.5	5.8	8.7
% of World	5.0	4.5	4.5	4.4	4.5	4.2	4.4	4.4	4.4	4.4	4.3	4.4	4.2	4.1
JPN - ¥100M	7007.7	7858.4	1295.9	1264.3	1433.0	1328.8	5322.0	1288.3	1309.5	1534.6	1479.9	5612.3	5935.4	6450.0
3/3 % ¥	35.6	12.1	-29.3	-2.4	13.3	-7.3	-32.3	-3.0	1.6	17.2	-3.6	5.5	5.8	8.7
Asia Pac - \$M	70078.3	91270.9	16931.1	16414.4	18123.9	18139.5	69608.8	16869.1	17022.1	19712.6	19142.7	72746.5	80746.5	89734.5
3/3 % \$	55.0	30.2	-20.0	-3.1	10.4	0.1	-23.7	-7.0	0.9	15.8	-2.9	4.5	11.0	11.1
% of World	56.5	57.8	65.2	63.6	62.7	62.8	63.5	62.8	62.5	62.2	61.6	62.2	62.5	63.0
World - \$M	123973.7	157966.7	25972.6	25813.2	28919.5	28884.6	109590.0	26848.0	27226.3	31716.0	31082.4	116872.6	129155.9	142496.7
3/3 % \$	61.5	27.4	-27.4	-0.6	12.0	-0.1	-30.6	-7.1	1.4	16.5	-2.0	6.6	10.5	10.3
M1 - MOS DRAM	72802.5	99308.4	15990.7	15782.8	17724.1	17422.8	66920.4	15565.7	15693.0	18224.3	17638.1	67121.2	73833.3	81955.0
3/3 % \$	76.8	36.4	-29.5	-1.3	12.3	-1.7	-32.6	-10.7	0.8	16.1	-3.2	0.3	10.0	11.0
M2 - TOTAL MOS SR	399.4	405.5	79.4	106.1	101.8	98.3	385.6	87.3	99.6	97.3	93.7	378.0	374.3	373.7
3/3 % \$	-7.3	1.5	-18.5	33.6	-4.1	-3.4	-4.9	-11.1	14.1	-2.4	-3.7	-2.0	-1.0	-0.1
M6 - Other Memory	1221.7	1301.2	290.5	315.4	318.5	317.7	1242.0	302.5	313.6	326.4	337.8	1280.2	1472.2	1619.5
3/3 % \$	3.1	6.5	-16.7	8.6	1.0	-0.2	-4.5	-4.8	3.7	4.1	3.5	3.1	15.0	10.0
M7A - NOR Flash	1949.5	2169.4	450.0	508.4	552.2	483.9	1994.5	434.0	496.1	545.1	435.6	1910.8	1870.6	1844.5
3/3 % \$	14.0	11.3	-12.0	13.0	8.6	-12.4	-8.1	-10.3	14.3	9.9	-20.1	-4.2	-2.1	-1.4
M7B - NANDFlash	47227.0	54227.0	9082.3	9018.8	10074.0	10476.9	38652.0	10398.5	10573.6	12405.5	12502.2	45879.9	51385.5	56524.0
3/3 % \$	47.5	14.8	-24.1	-0.7	11.7	4.0	-28.7	-0.7	1.7	17.3	0.8	18.7	12.0	10.0
M8 - ROM & EPROM	373.6	555.2	79.6	81.8	149.0	85.0	395.4	59.9	50.3	117.4	75.0	302.6	220.0	180.0
3/3 % \$	56.3	48.6	-57.6	2.7	82.2	-43.0	-28.8	-29.5	-16.1	133.6	-36.1	-23.5	-27.3	-18.2
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

M1 - MOS DRAM

WSTS Semiconductor Forecast

M1 - MOS DRAM

[illegible]

TOTAL MOS SRAM

2019	
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2020	2021	2022
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[illegible]

NANDFlash
Code M7B

Q4	2019 Total	Q1	Q2
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	2021	2022
Total	Total	Total

[illegible]

ROM & EPROM
Code M8

	2019		
Q4	Total	Q1	Q2

2020	2021	2022
Total	Total	Total

[illegible]

Other Memory
Code M6

	2019		
Q4	Total	Q1	Q2

2020	2021	2022
Total	Total	Total

[illegible]

IC Total
Code S2

	2019	2020				2020
Q4	Total	Q1	Q2	Q3	Q4	Total

2021 Total	2022 Total
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[illegible]

Tot Semicon Code T99

2019		2020	
Q4	Total	Q1	Q2

	2021	2022
	Total	Total

[illegible]

P2 - MOS MCU

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P2 - MOS MCU

[illegible]