

## Materials & Supply Chain Bulletin

### October 2019



### MLCC's Availability Tightens as 5G Base Stations Launch

5G networks are being rolled out in China with 5 of their top carriers being issued licenses, having spent the last year testing these networks.

Around 12,000 MLCC's are required for each 5G base station and China is expected to require 90,000 in total. Availability of smaller case size

MLCC's is predicted to decrease as rapid growth of global 5G networks is forecast through 2024.

Diodes and transistor lead-times have stabilized. Power mosfet lead-times are continuing on a downward trend. DDR4 memory lead-time has increased over the last month.

Of the commodity data points we are tracking, there were 14% with lead-time reductions and 2 data points – High Power LEDs and DDR4 memory – that is trending up on lead-time.

We still highly recommend continuing to press the supply chain until further notice.

### Here is Your Current Tariff Summary

Below is a summary of the tariffs that are in various stages of effect or proposal stages with dates or proposed dates.

Section 232 is in full effect at this time. List 1, List 2 and List 3 of Section



301 are also in full effect.

List 4A and 4B have been released. The majority of our supply chain has begun to pass on all tariff charges at this time. The logistics of these costs are being handled on a supplier and/or manufacturer case-by-case basis

**NEW!** Note that the tariff increase from 25% to 30% for 10/15/2019 has been suspended based on a tentative agreement between US and China.

**Date has been struck from the chart below:**

Action	Covered Products	Rate Increase	Effective Date
Section 232	Steel and Aluminum	Steel – 25% Aluminum – 10%	6/1/2018
<b>Status:</b>	<p>Steel – all countries of origin except South Korea, Brazil, and Argentina (agreed to quotas); and Australia (exempted).</p> <p>Aluminum – all countries of origin except Argentina (agreed to quota); and Australia (exempted).</p>		
Section 232	Autos and Automotive Parts	TBD	TBD
<b>Status:</b>	These tariffs are active and in effect at this time.		
Section 301	LIST 1	25%	7/6/2018
		<del>30%</del>	<del>10/15/2019</del>
	LIST 2	25%	8/23/2018
		<del>30%</del>	<del>10/15/2019</del>
	LIST 3	25%	5/10/2019
		<del>30%</del>	<del>10/15/2019</del>
LIST 4A-See Annex A	10%	9/1/2019	
LIST 4B - See Annex C	10%	12/15/2019	
<b>Status:</b>	<p>List 1 totaling \$34 billion worth of imports is composed of 818 tariff lines, and went into effect on 7/6/2018.</p> <p>List 2 totaling \$16 billion worth of imports is composed of 284 proposed tariff lines identified by the interagency Section 301 Committee. These are in a public review process.</p> <p>List 3 totaling approximately \$200 billion of imports was originally composed of 6,031 tariff lines. 5,745 full and partial lines go into effect on 9/24/2018. On June 1, 2019 List 3 tariffs will increase to 25 percent.</p>		

## LINKS TO THE TARIFF LISTS ARE BELOW

[LIST 1](#)

[LIST 2](#)

[LIST 3](#)

[LIST 4A - See  
Annex A](#)

[LIST 4 - See  
Annex C](#)

## MARKET CONDITIONS - OCTOBER 2019

Commodity	Specific Types	Price	Lead-Time	Notes
Passives and Magnetics	Inductors	Stable	Stable	
	MLCCs/Ceramic Caps	Stable	Currently stable but at a high risk	Lead-times continue to decrease....range is from 16-38 weeks at this time; general availability has improved but still a tight supply for new and large demand
	Resistors	Stable	Stable	Other than some areas within resistor networks; lead-times have come down and still trending downward
	Tantalum Caps	Stable	Stable	Lead-times have decreased
Electromechanical	Frequency Control	Stable	Stable	12-24 weeks
	Relay	Stable	Stable	10-23 weeks
	Switch	Stable	Stable	12-18 week lead-times
Interconnect	Fiber Optic	Stable	Stable	
	Midplane/Backplane	Stable	Stable	
	Socket	Stable	Stable	
	Terminal	Stable	Stable	
Power	Board to Board	Stable	Stable	
	Batteries	Stable	Stable	
Power	Power Supplies	Stable	Stable	
Analog / Linear	Amplifiers	Stable	Stable	8-26 weeks; lead-times have stabilized albeit at a high level
	Converters	Stable	Stable	7-16 weeks
	Interface	Stable	Stable	8-16 weeks
	Power Management	Stable	Stable	8-12 weeks
	Timing	Stable	Stable	8-12 weeks
High End Semi	Communication	Stable	Stable	
	Controllers and Processors	Stable	Stable	Infineon lead-times have now stabilized for most commodities
	Programmable Logic	Stable	Stable	10-24 weeks; stable with some areas of decreasing lead-time
Logic / Discreet	Advanced Logic	Stable	Stable	12-28 weeks and stable
	Diodes	Stable	Stable	10-24 weeks; lead-times are stabilizing at a high level
	Standard Logic / Mosfets	Stable	Stable	averaging 8-37 weeks; lead-times trending down
	Transistors	Stable	Stable	Lead-time has stabilized
Memory	DRAM	Stable	Stable	Lead-time has stabilized
	Programmable Read Only	Stable	Stable	Lead-time has stabilized
	NAND Flash	Stable	Stable	Lead-time has stabilized
	SRAM	Stable	Stable	Lead-time has stabilized

## MANUFACTURER CONDITIONS - OCTOBER 2019

MFG	Supply Chain Notes
Altera	Lead-times have stabilized at up to 26 weeks
Analog Devices	Lead-times and pricing are stable
AVX	Extending lead-time and heavy allocation; Long list of "suspended" parts
Broadcom/Avago	Lead-times stabilized at 40 weeks
Freescale	Lead times stabilized at up to 24 weeks
Infineon	lead-times have stabilized at this time
Kemet	MLCC demand continues to increase at an unprecedented pace. KEMET is currently at full manufacturing capacity and operating 7 days per week on all constrained lines. Even with record-breaking output 5 quarters in a row, orders are coming in at twice (2x) this level. Some part types in high demand are now sold out for 1 to 2 years. KEMET is investing in new capacity, but this will not mitigate the short-term supply shortage the market is experiencing.
KOA	Lead times out to 40 weeks
Microchip/Microsemi/Atmel	Lead-times at 24 weeks and stable
Micron	stable lead-times at up to 16 weeks
Murata	Murata has 70% MLCC Market share, they currently have global demand for 1 billion units/mth, they can support 500 million / mth. Increasing capacity by end of 2019
NXP, Nexperia	Lead times at 24 weeks on average
Omron	Extending lead times up to 24 weeks, no allocations
On Semi/Fairchild	Lead-times at 26 weeks
ST Micro	Lead-times stable at up to 24 weeks; pricing stable with some decreases
Vishay	Resistors have stabilized at 36 week lead times or less; Transistors are at 20-30 weeks and mosfets are at 36 weeks. Re-started production of MLCCs from their Vitramon division.
Xilinx	Extending lead times up to 28 weeks

As always, we will continue to monitor this situation and look for options to reduce costs to customers wherever possible.

Thank You,  
**Gary DeGrave, Jr.**, Corporate Materials Director  
 Milwaukee Electronics



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