

REQUEST FOR PUBLIC COMMENT: RISKS IN THE SEMICONDUCTOR PRODUCT SUPPLY CHAIN

This form is intended to be used to submit comments on challenges currently facing the semiconductor product supply chain. All comments are invited, with this form designed to facilitate submission of information from sellers of integrated circuits (in Sections 2 through 5) and purchasers of integrated circuits or related products (in Sections 6 through 8).

Indicate here if this form contains business confidential information, or if all information contained throughout this form is public:

PUBLIC

Those submitting a form containing business confidential information will need to submit a non-confidential version of the same form that does not contain the business confidential information.

A.	Organization Name	onsemi
	Street Address	5005 E. McDowell Rd
	City	Phoenix
	State	Arizona
	Zip Code	85005
	Country	United States
	Website	onsemi.com

From the list below, identify your organization's primary and additional participation in the semiconductor product supply chain. Please mark all applicable rows.			
Segment		Participation	
Integrated Circuit Design		Additional	
Front End Fabrication		Additional	
Back End/Assembly Test/Packaging		Additional	
B.	Electronic Manufacturing Services / Printed Circuit Board Assembly		
	IC Distributor		
	Equipment Supplier		
	Material Supplier		
	Electronic Component Supplier		Primary
	Intermediate or End User of Semiconductor Products		
	Other	Discrete semiconductor design, fabrication, packaging/test	Additional

Next Step:

Sections 2 through 5 of this form are intended to be filled out by organizations that have primary or additional participation in the following segments: Integrated Circuit Design, Front End Fabrication, Back End/Assembly Test/Packaging, Electronic Manufacturing Services / Printed Circuit Board Assembly, and IC distributor.

Sections 6 through 8 of this form are intended to be filled out by organizations that purchase integrated circuits.

If your organization's responses do not reasonably fit in the above sections, please provide comments in Section 9.

BURDEN ESTIMATE AND REQUEST FOR COMMENT

Public reporting burden for this collection of information is estimated to average 4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information to BIS Information Collection Officer, Room 6883, Bureau of Industry and Security, U.S. Department of Commerce, Washington, D.C. 20230, and to the Office of Management and Budget, Paperwork Reduction Project (OMB Control No. 0694-0143), Washington, D.C. 20503.

Section 2: Semiconductor Providers - Product Capabilities

Indicate the technology nodes (in nanometers), semiconductor material types, and device types which this organization is capable of providing (design and/or manufacture). A blank response is counted as "No Capability".

Technology Node (nm)		Semiconductor Material Type		Device Type			
				Organizations participating in the Electronic Manufacturing Services / Printed Circuit Board Assembly segment should list device types under "Other"			
A.	6,000 - 10,000		Amorphous Silicon		Analog/Linear Technologies	Design and Manufacture	
	3,000 - <6,000		Bulk Silicon	Design and Manufacture	Digital Logic Technologies	Design and Manufacture	
	1,500 - <3,000		Silicon on Insulator		Digital Signal Processors	Design and Manufacture	
	1,000 - <1,500		Silicon Germanium		Field Programmable Gate Arrays		
	800 - <1,000		Silicon on Sapphire		Structured ASICs		
	500 - <800		Silicon Carbide	Design and Manufacture	Standard Cell ASICs		
	350 - <500		Gallium Arsenide		Custom ASICs	Design and Manufacture	
	250 - <350		Gallium Nitride	Design Only	3D/2.5 ASICs		
	180 - <250		Indium Phosphide		System-on-Chip	Design and Manufacture	
	130 - <180		Antimonides		Other Processors		
	90 - <130		Organic Technologies		Mixed Signal Technologies	Design and Manufacture	
	65 - <90		Carbon Based Technologies (e.g. nanotubes)		Nonvolatile Memory	Design and Manufacture	
	45 - <65		Superconducting Materials		SRAM		
	32 - <45		Other	(specify here)	DRAM		
	28 - <32				MEMS Technologies		
	14 - <28				Optical/Photonic Technologies	Design and Manufacture	
	7 - <14				MMIC Technologies		
	<7				Other RF Technologies		
					Other	Discrete semiconductors	Design and Manufacture
	Point of Contact						
B.	Name		Title	Phone Number	E-mail	State	Country
	Daryl Hatano		VP Govt & External Affairs		daryl.hatano@onsemi.com	California	United States
Comments:							

Section 4c: Semiconductor Providers - Product Lead Times

For each phase of the production process, identify whether your organization carries out the step internally or externally. For the top semiconductor products identified in Section 4a, estimate each product's (a) 2019 lead time and (b) current lead time (in days), both overall and

[illegible][illegible]

This response was identified as PUBLIC on the Organization Information tab.

Section 4d: Semiconductor Providers - Product Inventories

For the top semiconductor products identified in Section 4a, list each product's 2019 and current inventory (in days), for finished product, in-progress product, and inbound product. Provide an explanation for any changes in inventory practices.

	Product Name (auto-generated from 4a)	Finished Inventory		In-Progress Inventory		Inbound Inventory		Explanation of Inventory Changes
		2019	Current	2019	Current	2019	Current	
	Total (all semiconductor products)							
1	(Optical/Photonic Technologies, Bulk Silicon,)							
2	(Optical/Photonic Technologies, Bulk Silicon,)							
3	(Other, Bulk Silicon,)							
4	(Digital Logic Technologies, Bulk Silicon,)							
5	(Digital Logic Technologies, Bulk Silicon,)							
6	(Other, Bulk Silicon,)							
7	(Analog/Linear Technologies, Bulk Silicon,)							
8	(Other, Bulk Silicon,)							
9	(Other, Bulk Silicon,)							
10	(Digital Signal Processors, Bulk Silicon,)							

This response was identified as PUBLIC on the Organization Information tab.

Section 5: Semiconductor Providers - Disruptions

What are the primary disruptions or bottlenecks that have affected your ability to provide products to customers in the last year?						
	Disruption/Bottleneck	Supplier of Delayed Input	Primary Product Impacted (from Section 4a)	Explanation		
A.	1	Fab constraints	onsemi		Fab constraints are evident at most internal fabs. We need the CHIPS and FABS Acts to prevent future shortages.	
	2	Foundry constraints	Various		Foundries serve many customers. onsemi has had more demand for its products than our capacity allocation at the foundries could address. In some cases we have negotiated higher allocations for Q4'2021 and 2022 but we are	
	3	Assembly/Test constraints	onsemi		Internal assembly/test facilities are constrained. Tariffs on imports from onsemi China sites are counterproductive.	
	4	External Assembly/Test constraints	Various		External assembly and test companies are constrained due to increased demand from all of their customers	
	5	COVID shutdowns	onsemi and suppliers		Government movement restrictions and shutdowns in South East Asia have impacted production and were primarily responsible for Q3 2021 factory capacity utilization declining several percentage points to 80%. As of the date	
	6	Logistics	Air freight, sea ports		Backups at ports have delayed shipments of inputs and outputs.	
	7					
	8					
	9					
	10					
B.	What is your organization's book-to-bill ratio for the past three years?		2019		Explanation of any changes:	See separate narrative
			2020			
			2021			
	If the demand for your products exceeds your capacity, what is the primary method by which your organization allocates the available supply?		Prioritize customers with long-term future commitments	Explanation:	See separate narrative	
	Does your organization have available capacity?		No	If Yes, what is preventing the filling of that capacity?		
	Is your organization considering increasing its capacity?		Yes	If Yes, in what ways, over what timeframe, and what impediments exist to such an increase?	See separate narrative	
What factors does your organization consider when evaluating whether to increase capacity?		See separate narrative				
C.	Has your organization changed its material and/or equipment purchasing levels or practices in the past three years?		Yes	Explanation:	See separate narrative	
	What single change (and to which portion of the supply chain) would most significantly increase your ability to supply semiconductor products in the next six months?		See separate narrative			

This response was identified as PUBLIC on the Organization Information tab.

Section 9: General Comments

Use this space to provide any general comments that do not reasonably fit in other sections of the form. Please limit your response to the space available; supplemental information can be submitted as a separate attachment on regulations.gov.

- A. Attached narrative comments define "Integrated Circuit" in this RFI response as synonymous with semiconductors including discrete semiconductors. The comments also discuss problems with double or triple ordering, the value of Long Term Supply Agreements to encourage supplier investments, the need for the CHIPS and FABS Acts, and the growing importance of Silicon Carbide for key sustainability applications. In Section 3, the Industrial row includes Aerospace and Medical which are low to mid-single digit percentages of total company sales. The company's Computer segment sales including servers were listed in the "IT/Computers Personal and Consumer Products" line, the company's Communications segment sales were listed in the "Mobile Devices" line and the company's Consumer segment sales were included in the "Other" line.