# IC KNOWLEDGE LLC

# IC Knowledge Cost Model Product Line

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### **Discrete and Power Products Cost and Price Model**

The Discrete and Power Products Cost and Price Model is designed to easily calculate the cost and price of past and current high power ICs and discrete devices fabricated on silicon, GaAs, GaN and SiC. The price includes twelve month of upgrades with phone and email support. Wafer fabrication, test and packaging costs are all covered. This model is sold in individual and enterprise licenses.

#### IC Cost and Price Model (the industry standard)

The IC Cost and Price Model is designed to easily calculate the manufacturing cost of low power silicon ICs (such as microprocessor, DRAM, Flash, ASIC, analog, etc.). The model forward forecasts technology nodes expected to be introduced within the next year with costs out to 2026. The price includes twelve months of upgrades with phone and email support. 100mm to 300mm wafer sizes are supported. Wafer fabrication, test and packaging costs are all covered. Processes are by defined by wafer size – node – company – process type. This model is sold in individual and enterprise licenses.

#### **MEMS Cost Model**

The MEMS Cost Model is designed to easily calculate the manufacturing cost of most MEMS products. The model supports up to two MEMS die and up to two IC die in the same package with packaging and test costs. The price includes twelve month of upgrades with phone and email support. This model is sold in individual and enterprise licenses.

# **Strategic Cost Model**

The Strategic Cost Model is a node based model for forward projecting state-of-the-art semiconductor technology. The model covers the top three companies of each of four categories, DRAM, Foundry, IDM Logic and NAND Flash. The model presents user editable process, equipment and materials details and has every 300mm fab for the target companies pre-defined (also user editable). Output includes detailed wafer cost and equipment and materials requirements in units and cost.

Elements	IC Cost and Price	Discrete and	MEMS Cost and	Strategic
	Model	Power	Price Model	Cost Model
		Products Cost		
		and Price		
		Model		
Model	Low power	High power	MEMS products	State -of-the-
coverage	silicon based	integrated		art silicon
	integrated	circuits and		based
	circuits	discrete		integrated
		devices on		circuits
		silicon, GaAs,		
		GaN and SiC		
Difficulty of	Low	Low	Moderate	High
usage				
Elements				
Wafer cost	Yes	Yes	Yes	Yes
Wafer sort	Yes	Yes	Yes	No
Packaging	Yes	Yes	Yes	No
Class test	Yes	Yes	Yes	No
Price	Yes	Yes	Yes	No
Target	Should cost for	Should cost	Should cost for	Preferred
customers	automotive,	for	automotive and	model for
	electronic	automotive	electronic	OEMs and
	systems and	(widely used),	systems	Materials
	fabless	and electronic	companies.	companies.
	companies.	systems.	Benchmarking	Technology
	Benchmarking	Benchmarking	for IDMs and	and cost
	for IDMs and	for IDMs.	MEMS	planning for
	foundries.	General usage	companies.	IDMs,
	General usage by	by analysts	General usage	Foundries,
	analysts and	and	by analysts and	Fabless,
	consultants.	consultants.	consultants.	Consultants
	Materials and			and Analysts.
	OEMs			
Typical	CMOS, RFCMOS,	BCD, HVIC,	MEMS and IC	CMOS,
processes	DRAM, SRAM,	MOSFET,	signal	DRAM, Flash
	Flash	IGBT, Thyristor	conditioning	(2D and 3D),
				3D XPoint
Typical	Low power	Power control	Accelerometers,	Advanced
products	ASICs, FPGAs,	ICs, high side	gyroscopes,	wafers
	Microcontrollers,	switches,	MEMS	
	Microprocessors,	Power	microphones,	
	DSP, SOC,	MOSFETs,	pressure	
	DRAM, SRAM,	IGBTs, high	sensors	
	NAND and NOR	voltage		
		diodes,		
		thyristor		

Elements	IC Cost and Price Model	Discrete and Power Products Cost and Price Model	MEMS Cost and Price Model	Strategic Cost Model
Companies covered	Any relevant to the model targets	Any relevant to the model targets	Any relevant to the model targets	Top 3 DRAM, top 3 Foundry, top 2 Logic, top 3 NAND, 3D Xpoint
Nodes	Past and current, new processes due in the next twelve months	Past and current	Past and current	All 300mm to- date, logic to 3.5nm, DRAM to 12nm, 2D NAND to 15nm, 3D NAND to 256 layers, 3D XPoint to 16 layers
Date range	2010-Q1 to 2026-Q4	2010-Q1 to 2026-Q4	2010-Q1 to 2026-Q4	2000-Q1 to 2031-Q4
Wafer size	100mm, 125mm, 150mm, 200mm, 300mm	100mm, 125mm, 150mm, 200mm, 300mm	100mm, 150mm, 200mm, 300mm	limited 200mm full 300mm, 450mm
Packages	Standard IC packages such as QFN, BGA, LGA, QFP, etc.	Power and discrete packages such as SOT, DFN, TO, etc.	Multiple die specialty packages used for MEMS	Not applicable
Customizability	Low	Low	Moderate (high for MEMS processes)	Very high (processes, equipment, materials)
Output detail	Wafer, die, test and packaging costs. Approximate fab equipment and materials costs.	Wafer, die, test and packaging costs. Approximate fab equipment and materials costs.	Wafer, die, test and packaging costs. Detailed fab equipment and materials costs for MEMS.	Detailed wafer cost, equipment set and materials.

Elements	IC Cost and Price Model	Discrete and Power Products Cost and Price Model	MEMS Cost and Price Model	Strategic Cost Model
Comments	Has a multiple die calculator for multi-chip packaging.	Has a multiple die calculator for multi-chip packaging. Now covers compound semiconductors such as GaAs, GaN and SiC	Can cost out up to 2 MEMS die and up to 2 IC die in the same product. Users can define their own MEMS processes	The fabs, processes, equipment and materials can all be user adjusted
Price [1] Single user Enterprise	\$2,258 \$7,676	\$2,100 \$7,140	\$1,995 \$6,783	\$5,000 \$14,000

[1] Pricing shown is for purchase orders; lower pricing may be available on our web site for credit card orders only.