

Advanced extremely low-power CMOS logic for smart devices with low operating voltage

AXP is a feature-rich family designed for high-performance low-voltage applications. AXP supports the trend toward low operating voltage and is our lowest power logic technology.

Our AXP family of Si-gate CMOS devices uses leading low threshold process technology and next-generation packaging to deliver extremely small logic functions. All AXP solutions from Nexperia offer low propagation delay and standby current, enabling both high-speed and low power dissipation capacitance.

Key features

- › Wide supply voltage range and fully specified at 0.8V
- › Very low dynamic power dissipation & standby current (0.6µA)
- › Typical 2.9ns low propagation delay at V_{CC} of 1.8V
- › Schmitt action on all inputs & overvoltage tolerant inputs
- › +/- 4.5mA balanced output drive

Key benefits

- › Broad range of functions and packages
- › Simplified board layout and miniaturization
- › Suitable for mixed low-voltage applications
- › Low static and dynamic power dissipation
- › High noise immunity for sensitive applications

AXP characteristics

Supply voltage (V)	Propagation delay, typ (ns)	Output drive (mA)	Standby current (µA)	Temperature range (°C)
0.7 to 2.75	2.9	±4.5	0.6	Up to -40 to +85/+125

AXP provides higher speed than AUP but retains low power dissipation capacitance (C_{pd}). Because of its use of low threshold transistors, AXP is the first logic family fully specified at 0.8V, allowing to migrate applications from 1.8V and 1.2V easily.

1G Single-gates & 2G Dual-gates Functions	Description	SOT1226 (GX)	SOT886 (GM)	SOT1115 (GN)	SOT1202 (GS)	SOT1255 (GX)
74AXP1G00	2-input NAND gate	•	•	•	•	
74AXP1G02	2-input NOR gate	•	•	•	•	
74AXP1G04	Inverter	•	•	•	•	
74AXP1G06	Inverter; open-drain	•	•	•	•	
74AXP1G07	Buffer; open-drain	•	•	•	•	
74AXP1G08	2-input AND gate	•	•	•	•	
74AXP1G09	2-input AND gate; open-drain	•	•	•	•	
74AXP1G10	3-input NAND gate		•	•	•	
74AXP1G11	3-input AND gate		•	•	•	
74AXP1G125	Buffer/line driver (3-state)	•	•	•	•	
74AXP1G14	Inverter; Schmitt-trigger	•	•	•	•	
74AXP1G157	2-input multiplexer		•	•	•	
74AXP1G17	Buffer; Schmitt trigger	•	•	•	•	
74AXP1G32	2-input OR gate	•	•	•	•	
74AXP1G57	Configurable gate; Schmitt trigger		•	•	•	•
74AXP1G58	Configurable gate; Schmitt trigger		•	•	•	•
74AXP1G86	2-input XOR gate	•	•	•	•	
74AXP1G97	Configurable gate; Schmitt trigger		•	•	•	•
74AXP1G98	Configurable gate; Schmitt trigger		•	•	•	
74AXP2G07	Dual buffer; open-drain		•	•	•	•
74AXP2G14	Dual inverter; Schmitt trigger		•	•	•	•
74AXP2G17	Dual buffer; Schmitt trigger		•	•	•	
74AXP2G34	Dual buffer		•	•	•	
74AXP2G3404	Dual buffer and inverter		•	•	•	

Available types

Our AXP portfolio consists of level-shifters/translators, gates (AND, NAND, NOR, OR), buffers/inverters/drivers, Schmitt-triggers, configurable logic devices, multiplexers and combination logic devices.

Types released in AXP technology can support overvoltage-tolerant inputs, Schmitt-trigger inputs, low-threshold inputs, partial power-down circuitry and open-drain outputs.








Applications






- ▶ Smartphones
- ▶ IoT devices
- ▶ Portables
- ▶ Wearables

1T & 2T Voltage Translators	Description	SOT353-1 (GW)	SOT1226 (GX)	SOT363 (GW)	SOT886 (GM)	SOT1115 (GN)	SOT1202 (GS)	SOT1255 (GX)	SOT765-1 (DC)	SOT833-1 (GT)	SOT1203 (GS)	SOT1233 (GX)	SOT552-1 (DP)
74AXP1T125	Dual-supply translating buffer (3-state)			•	•	•	•						
74AXP1T14	Dual-supply translating inverter; Schmitt trigger	•	•										
74AXP1T32	Dual-supply translating 2-input OR-gate			•				•					
74AXP1T34	Dual-supply translating buffer	•	•		•	•	•						
74AXP1T57	Dual-supply translating configurable gate; Schmitt-trigger								•	•	•	•	
74AXP2T08	Dual-supply dual translating 2-input AND gate												•
74AXP2T3407	Dual-supply dual translating buffer and buffer; open-drain								•	•	•		

Packages

Our AXP single, dual and triple gate functions are available from our Mini Logic portfolio, which includes PicoGate leaded TSSOP and VSSOP & MicroPak leadless XSON and X2SON packages.

	5-pin		6-pin				
							
Package (suffix)	TSSOP5 (GW)	X2SON5 (GX)	TSSOP6 (GW)	XSON6 (GM)	XSON6 (GS)	XSON6 (GN)	X2SON6 (GX)
Package number	SOT353-1	SOT1226	SOT363	SOT886	SOT1202	SOT1115	SOT1255
L x W x H, Pitch -in mm	2.1 x 2.1 x 0.95, 0.65	0.8 x 0.8 x 0.35, 0.4	2.1 x 2.1 x 0.95, 0.65	1.45 x 1.0 x 0.5, 0.5	1.0 x 1.0 x 0.35, 0.35	0.9 x 1.0 x 0.35, 0.3	1.0 x 0.8 x 0.35, 0.4

	8-pin			10-pin	
					
Package (suffix)	VSSOP8 (DC)	XSON8 (GT)	XSON8 (GS)	X2SON8 (GX)	TSSOP10 (DP)
Package number	SOT765-1	SOT833-1	SOT1203	SOT1233	SOT552-1
L x W x H, Pitch -in mm	2.0 x 3.1 x 1.0, 0.5	1.95 x 1.0 x 0.5, 0.5	1.35 x 1.0 x 0.35, 0.35	1.35 x 0.8 x 0.35, 0.4	3.0 x 4.9 x 1.1, 0.5

For more information, visit:

nexperia.com/products/logic/family/AXP

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Date of release:

April 2019