# AutoChips MCU Selection Guide

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Version3.7

# AC7840x Series of 32-bit ARM® Cortex-M4F MCUs Selection Guide

| Part No. | Max Speed (MHz) | P-Flash (KB) | D-Flash (KB) | SRAM (KB) | I/O | Timer (32-bit) | WDG | UART | I2C | SPI | CAN-FD /CAN | UART LIN | PWM | eIO | Crypto | ADC (12-bit) | support ISELED | Package | Operating Temp. Range(°C) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AC78407YGLA | 120 | 1024 | 128 | 128 | 128 | 4 | 2 | 4 | 1 | 3 | 4/4 | 4 | 48-ch | 1 | 1 | 48-ch | Yes | LQFP144 | -40~125 |
| AC78407LGLA | 120 | 1024 | 128 | 128 | 89 | 4 | 2 | 4 | 1 | 3 | 4/4 | 4 | 39-ch | 1 | 1 | 32-ch | Yes | LQFP100 | -40~125 |
| AC78407HGLA | 120 | 1024 | 128 | 128 | 58 | 4 | 2 | 4 | 1 | 3 | 3/3 | 4 | 36-ch | 1 | 1 | 29-ch | Yes | LQFP64 | -40~125 |
| AC78407LFLA | 120 | 512 | 128 | 128 | 89 | 4 | 2 | 4 | 1 | 3 | 4/4 | 4 | 39-ch | 1 | 1 | 32-ch | Yes | LQFP100 | -40~125 |
| AC78407HFLA | 120 | 512 | 128 | 128 | 58 | 4 | 2 | 4 | 1 | 3 | 3/3 | 4 | 36-ch | 1 | 1 | 29-ch | Yes | LQFP64 | -40~125 |
| AC78406YGLA | 120 | 1024 | 128 | 128 | 128 | 4 | 2 | 4 | 1 | 3 | 4/4 | 4 | 48-ch | 1 | 1 | 48-ch | - | LQFP144 | -40~125 |
| AC78406LGLA | 120 | 1024 | 128 | 128 | 89 | 4 | 2 | 4 | 1 | 3 | 4/4 | 4 | 39-ch | 1 | 1 | 32-ch | - | LQFP100 | -40~125 |
| AC78406HGLA | 120 | 1024 | 128 | 128 | 58 | 4 | 2 | 4 | 1 | 3 | 3/3 | 4 | 36-ch | 1 | 1 | 29-ch | - | LQFP64 | -40~125 |
| AC78406YFLA | 120 | 512 | 128 | 128 | 128 | 4 | 2 | 4 | 1 | 3 | 4/4 | 4 | 48-ch | 1 | 1 | 48-ch | - | LQFP144 | -40~125 |
| AC78406LFLA | 120 | 512 | 128 | 128 | 89 | 4 | 2 | 4 | 1 | 3 | 4/4 | 4 | 39-ch | 1 | 1 | 32-ch | - | LQFP100 | -40~125 |
| AC78406HFLA | 120 | 512 | 128 | 128 | 58 | 4 | 2 | 4 | 1 | 3 | 3/3 | 4 | 36-ch | 1 | 1 | 29-ch | - | LQFP64 | -40~125 |

# AC7840x Series Naming Rule

| Field | Note | Values |
|---|---|---|
| AC | AutoChips | • AC |
| 7 | AutoChips MCU series | • 7 |
| 8 | Automotive | • 8 |
| 4 | Core Platform | • 4 = Cortex-M4F |
| 0 | Specific function | • 0 = platform series<br>• 6/5/3 = Platform sub-family<br>7：4xCAN，support Crypto(SHE, security boot),support ISELED<br>6：4xCAN，support Crypto(SHE, security boot)<br>5：3xCAN，support Crypto(SHE, security boot)<br>3：3xCAN，don't support Crypto |
| 6 | | |
| Y | Pin count | • F = 48<br>• H = 64<br>• L = 100<br>• Y = 144<br>• U = 176 |
| G | Flash Size | • E = 256KB<br>• F = 512KB<br>• G = 1024KB<br>• I= 2048KB |
| L | Package | • L = LQFP<br>• Q = QFN<br>• T = TSSOP |
| A | Temperature range(° C) | • A = AEC-Q100 Grade 1(-40~125° C)<br>• I = -40~105° C C= -40~85° C |
| /x | Internal use(Part NO.'s suffix) | /A or /B and so on. |

# AC7801x Series of 32-bit ARM® Cortex-M0+ MCUs Selection Guide

| Part No. | Max Speed (MHz) | Flash (Kbytes) | SRAM (Kbytes) | I/O | Timer (32-bit) | WDG | RTC | UART | I2C | SPI | CAN FD /CAN | UART LIN | PWM | PWDT | COMP | ADC (12-bit) | Package | support ISELED | Operating Temp. Range(°C) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AC78015FDLA** | 48 | 128 | 20 | 42 | 4 | 1 | 1 | 3 | 2 | 2 | 1/1 | 2 | 16-ch | 2 | 1 | 12-ch | LQFP48 | Yes | -40 to +125 |
| **AC78015MDQA** | 48 | 128 | 20 | 27 | 4 | 1 | 1 | 3 | 1 | 1 | 1/1 | 2 | 16-ch | 1 | 1 | 9-ch | QFN32 | Yes | -40 to +125 |
| **AC78013MCQA** | 48 | 64 | 16 | 27 | 4 | 1 | 1 | 3 | 1 | 1 | 1/1 | 2 | 16-ch | 1 | 1 | 9-ch | QFN32 | - | -40 to +125 |
| **AC78013MDQA** | 48 | 128 | 20 | 27 | 4 | 1 | 1 | 3 | 1 | 1 | 1/1 | 2 | 16-ch | 1 | 1 | 9-ch | QFN32 | - | -40 to +125 |
| **AC78013FCLA** | 48 | 64 | 16 | 42 | 4 | 1 | 1 | 3 | 2 | 2 | 1/1 | 2 | 16-ch | 2 | 1 | 12-ch | LQFP48 | - | -40 to +125 |
| **AC78013FDLA** | 48 | 128 | 20 | 42 | 4 | 1 | 1 | 3 | 2 | 2 | 1/1 | 2 | 16-ch | 2 | 1 | 12-ch | LQFP48 | - | -40 to +125 |
| **AC78013MDQI** | 48 | 128 | 20 | 27 | 4 | 1 | 1 | 3 | 1 | 1 | 1/1 | 2 | 16-ch | 1 | 1 | 9-ch | QFN32 | - | -40 to +105 |
| **AC78013FDLI** | 48 | 128 | 20 | 42 | 4 | 1 | 1 | 3 | 2 | 2 | 1/1 | 2 | 16-ch | 2 | 1 | 12-ch | LQFP48 | - | -40 to +105 |

# AC7803x Series of 32-bit ARM® Cortex-M0+ MCUs Selection Guide

| Part No. | Max Speed (MHz) | Flash (KB) | Flexible Flash(KB) | SRAM(KB) | I/Os | Timer(32-bit) | WDG | RTC | CAN-FD/CAN | UART/UART LIN | I2C | SPI | PWM | ACMP | 12-bit ADCs | eIO | 8-bit DAC | Package* | Operating Temp. Range(°C) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AC78036HFLA** | 64 | 256 | 256 | 64 | 58 | 4 | 1 | 1 | 2/2 | 3/3 | 2 | 2 | 1x8-ch 2x4-ch | 1 | 16-ch | 1 | 1 | LQFP64 | -40 to +125 |
| **AC78036FFLA** | 64 | 256 | 256 | 64 | 42 | 4 | 1 | 1 | 2/2 | 3/3 | 2 | 2 | 1x8-ch 2x4-ch | 1 | 12-ch | 1 | 1 | LQFP48 | -40 to +125 |
| **AC78036HELA** | 64 | 256 | 128 | 64 | 58 | 4 | 1 | 1 | 2/2 | 3/3 | 2 | 2 | 1x8-ch 2x4-ch | 1 | 16-ch | 1 | 1 | LQFP64 | -40 to +125 |
| **AC78036FELA** | 64 | 256 | 128 | 64 | 42 | 4 | 1 | 1 | 2/2 | 3/3 | 2 | 2 | 1x8-ch 2x4-ch | 1 | 12-ch | 1 | 1 | LQFP48 | -40 to +125 |
| **AC78036HDLA** | 64 | 128 | 64 | 64 | 58 | 4 | 1 | 1 | 2/2 | 3/3 | 2 | 2 | 1x8-ch 2x4-ch | 1 | 16-ch | 1 | 1 | LQFP64 | -40 to +125 |
| **AC78036FDLA** | 64 | 128 | 64 | 64 | 42 | 4 | 1 | 1 | 2/2 | 3/3 | 2 | 2 | 1x8-ch 2x4-ch | 1 | 12-ch | 1 | 1 | LQFP48 | -40 to +125 |

# AC7802x Series of 32-bit ARM® Cortex-M0+ MCUs Selection Guide

| Part No. | Max Speed (MHz) | Flash (KB) | Data Flash(KB) | SRAM(KB) | I/Os | Timer(32-bit) | WDG | RTC | UART/UART LIN | I2C | SPI | PWM | ACMP | 12-bit ADCs | 6-bit DAC | Package* | Operating Temp. Range(°C) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AC78022MBQA** | 32 | 32 | 2 | 4 | 27 | 4 | 1 | 1 | 2/1 | 1 | 1 | 2x2-ch<br>1x4-ch | 1 | 17-ch | 1 | HVQFN32 | -40 to +125 |

# AC780x Series Naming Rule

| Field | Note | Values |
|---|---|---|
| AC | AutoChips | • AC |
| 7 | AutoChips MCU series | • 7 |
| 8 | Automotive | • 8 |
| 0 | Core Platform | • 0= Cortex-M0+ |
| 1 | Specific function | • 1:platform series<br>1 = first Generation 2 = second Generation 3 = third Generation<br>• 3:Platform sub-family<br>9 = Integrated CAN PHY and LDO<br>6 = CPU 64/72MHz, support CAN-FD/CAN<br>5 = CPU 48MHz, support ISELED and CAN-FD/CAN<br>3 = CPU 48MHz, support CAN-FD/CAN<br>2 = CPU 32MHz,support LIN(don't support CAN) |
| 3 | | |
| F | Pin count | • P : 20 • M : 32 • F : 48 • H : 64 • S : 80 • L : 100 |
| D | Flash Size | • A = 16KB • B = 32KB • C = 64KB • D= 128KB<br>• E = 256KB • Z = 448KB • F = 512KB |
| L | Package | • L = LQFP • Q = QFN • T = TSSOP |
| A | Temperature range(° C) | • A= AEC-Q100 Grade 1(-40~125°C) • I= -40~105°C • C= -40~85°C |
| /x | Internal use(Part NO.'s suffix) | /A or /B and so on. |

# AC781x Series of 32-bit ARM® Cortex-M3 MCUs Selection Guide

| Part No. | Max Speed (MHz) | Flash (Kbytes) | SRAM (Kbytes) | I/O | Timer (32-bit) | WDG | RTC | UART | I2C | SPI | CAN | LIN | PWM* | COMP | DAC* (6-bit) | ADC (12-bit) | Package* | Operating Temp. Range(°C) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AC7811QBGE** | 100 | 256 | 64 | 68 | 8 | 1 | 1 | 6 | 2 | 2 | 2 | 1 | 12-ch | 2 | 2 | 16-ch | LQFP80 | -40 to +125 |
| **AC7811OBGE** | 100 | 128 | 32 | 68 | 8 | 1 | 1 | 6 | 2 | 2 | 2 | 1 | 12-ch | 2 | 2 | 16-ch | LQFP80 | -40 to +125 |
| **AC7811QBFE** | 100 | 256 | 32 | 52 | 8 | 1 | 1 | 6 | 2 | 2 | 2 | 1 | 9-ch | 2 | 2 | 12-ch | LQFP64 | -40 to +125 |
| **AC7811OBFE** | 100 | 128 | 32 | 52 | 8 | 1 | 1 | 6 | 2 | 2 | 2 | 1 | 9-ch | 2 | 2 | 12-ch | LQFP64 | -40 to +125 |
| **AC7815QBGE** | 100 | 256 | 64 | 68 | 8 | 1 | 1 | 6 | 2 | 2 | 2 | 1 | 12-ch | 2 | 2 | 16-ch | LQFP80 | -40 to +85 |
| **AC7815QBFE** | 100 | 256 | 32 | 52 | 8 | 1 | 1 | 6 | 2 | 2 | 2 | 1 | 9-ch | 2 | 2 | 12-ch | LQFP64 | -40 to +85 |

# AC781x Series Naming Rule

| Field | Note | Values |
|---|---|---|
| AC | AutoChips | • AC |
| 7 | AutoChips MCU series | • 7 |
| 8 | Automotive | • 8 |
| 1 | Specific function | • 1= First MCU |
| 1 | Temperature range(°C) | • 1= AEC-Q100 Grade 1<br>• 3= AEC-Q100 Grade 3<br>• 5= 85℃ |
| Q | Flash Size | • Q = 256 KB<br>• O = 128 KB<br>• M = 64 KB<br>• J = 32 KB |
| B | Standard | • B = General standard |
| | | • J = BCM standard |
| G | Pin count | • F = 64 (7 mm x 7 mm) |
| | | • G = 80 (10 mm x 10 mm) |
| E | Package | • E = LQFP |
| /x | Internal use(Part NO.'s suffix) | /A or /B and so on. |

# THANK YOU

**官方网址:**

http://www.autochips.com

**21 IC论坛:**

https://bbs.21ic.com/iclist-864-1.html

合肥杰发科技 | 深圳分公司 | 上海途擎(子公司) | 武汉杰开(子公司)