



Welcome to [E-XFL.COM](https://www.e-xfl.com)

### What is "[Embedded - Microcontrollers](#)"?

"[Embedded - Microcontrollers](#)" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" because they are embedded within electronic devices to control various functions, rather than serving as standalone computers. Microcontrollers are crucial in modern electronics, providing the intelligence and control needed for a wide range of applications.

### Applications of "[Embedded - Microcontrollers](#)"

#### Details

Product Status	Active
Core Processor	dsPIC
Core Size	16-Bit
Speed	70 MIPS
Connectivity	CANbus, I <sup>2</sup> C, IrDA, LINbus, SPI, UART/USART
Peripherals	Brown-out Detect/Reset, DMA, Motor Control PWM, POR, PWM, WDT
Number of I/O	35
Program Memory Size	32KB (11K x 24)
Program Memory Type	FLASH
EEPROM Size	-
RAM Size	4K x 8
Voltage - Supply (Vcc/Vdd)	4.5V ~ 5.5V
Data Converters	A/D 24x10/12b
Oscillator Type	Internal
Operating Temperature	-40°C ~ 85°C (TA)
Mounting Type	Surface Mount
Package / Case	44-VQFN Exposed Pad
Supplier Device Package	44-QFN (8x8)
Purchase URL	<a href="https://www.e-xfl.com/product-detail/microchip-technology/dspic33ev32gm104t-i-ml">https://www.e-xfl.com/product-detail/microchip-technology/dspic33ev32gm104t-i-ml</a>

# pushPIN™ Heat Sink Assembly

**ATS Part#:**ATS-13F-32-C3-R0

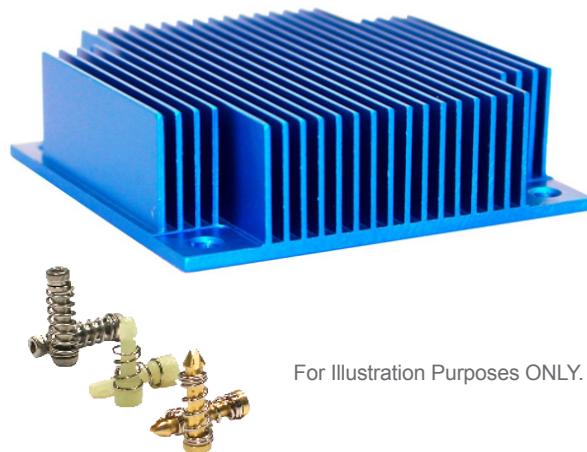
**Description:** pushPIN™ HS ASMBLY,FINE-PITCH,STRAIGHT, HOLE PATTERN:4-CORNER,BLUE,T412

**Heat Sink Type:** pushPIN™ Heat Sink Assembly

**Heat Sink Attachment:** pushPIN™

## Features & Benefits

- » Quick Attachment – Push pins feature a flexible barb at the end designed to engage with pre-drilled holes in a PCB.
- » Compression Springs add the necessary force to hold the assembly together for secure attachment. Select from over 21 different springs to achieve precise force required.
- » Push Pin Material available in brass or plastic in 10 sizes ranging from 9-20mm in length. Stainless steel hardware kit available for more secure attachment. Visit [www.qats.com](http://www.qats.com) for available options.
- » Heat Sinks Designed for All Airflow Conditions. Select from over 112 fine pitch HS designed for high velocity air flows and 98 course pitch HS designed for low velocity air flow conditions.
- » Pre-assembled with phase-changing material for increased thermal performance. Double-sided thermal tape and no TIM options available to meet application-specific requirements.
- » Lightweight, aluminum HS extruded from AL6063 provide optimal heat transfer with a blue anodized finish.
- » All components are RoHS and REACH compliant.
- » Industry standard hole pattern. Recommended through hole size is 3.175mm



## Bill of Material

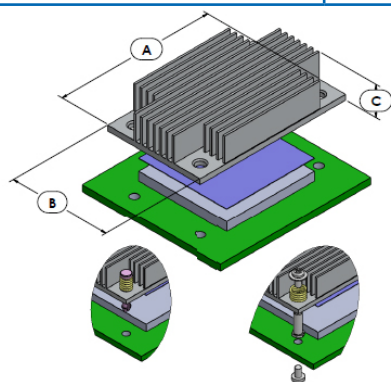
	Qty
<b>Heat Sink:</b> ATS-FPS058037011-32-C3-R0	1
<b>Push Pin:</b> ATS-PP-06	4
<b>Springs:</b> ATS-PPS-13	4

## Thermal Performance

AIR VELOCITY - LFM (m/s)		100 (0.5)	200 (1.0)	300 (1.5)	400 (2.0)	500 (2.5)	600 (3.0)	700 (3.5)	Fin Pitch	Fin Type	Hole Pattern
Thermal Resistance °C/W	Unducted Flow	21.54	11.84	6.67	4.39	3.25	2.60	2.21	FINE-PITCH	STRAIGHT	4-CORNER
	Ducted Flow	3.39	2.01	1.59	1.37	1.24	1.15	1.08			

## Product Detail

P/N	Dimensions					Push Pin	Spring	TIM	Finish
	A	B	C	E	F				
ATS-13F-32-C3-R0	57.90	36.83	11.43	47.24	26.16	ATS-PP-06	ATS-PPS-13	T412	BLUE ANODIZED



For Illustration Purposes ONLY.

### NOTES:

- 1) Dimension A is the length of the heat sink in the direction of the flow.
- 2) Dimension B is the width of the heat sink perpendicular to the flow direction.
- 3) Dimension C is the heat sink height from the bottom of the base to the top of the fin field.
- 4) Dimension E is the distance between holes perpendicular to the direction of flow.
- 5) Dimension F is the distance between holes in the direction of flow.
- 6) Thermal performance data are provided for reference only. Actual performance may vary by application.
- 7) ATS reserves the right to update or change its products without notice to improve the design or performance.
- 8) ATS certifies that this heat sink assembly is RoHS-6 and REACH compliant.
- 9) Contact ATS to learn about custom options available.