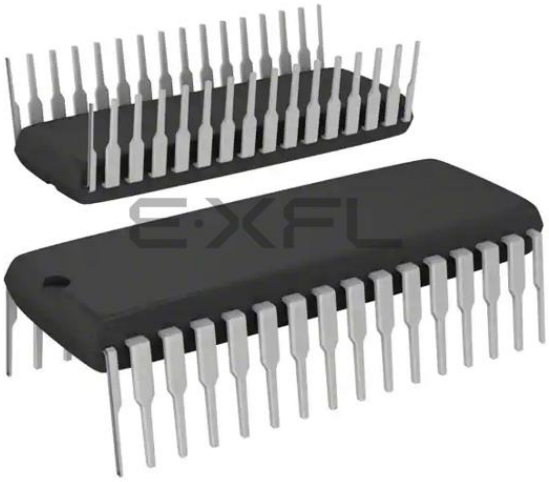


Welcome to E-XFL.COM

What is "Embedded - Microcontrollers"?

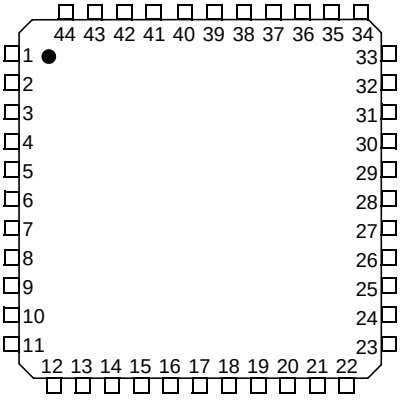
"Embedded - Microcontrollers" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" 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.

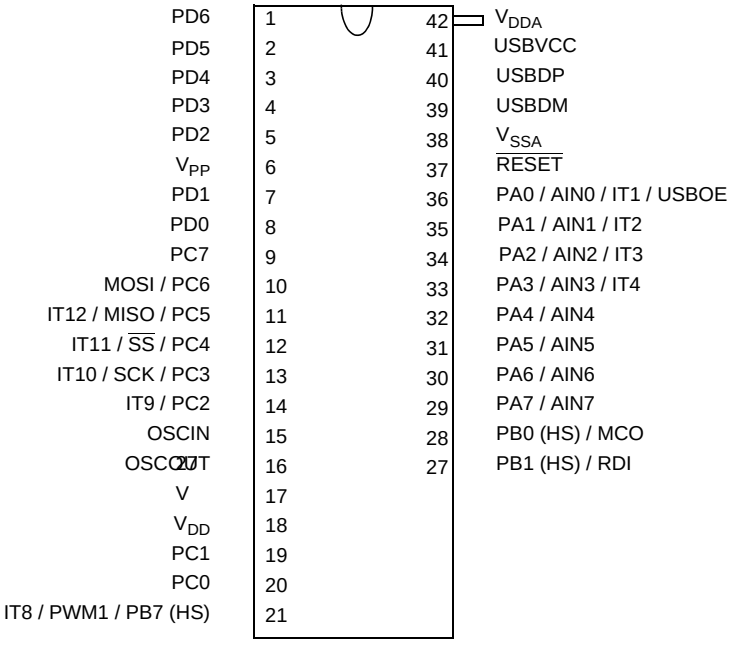
Applications of "Embedded - Microcontrollers"

Details	
Product Status	Obsolete
Core Processor	ST7
Core Size	8-Bit
Speed	8MHz
Connectivity	SCI, SPI, USB
Peripherals	DMA, LVD, POR, PWM, WDT
Number of I/O	21
Program Memory Size	16KB (16K x 8)
Program Memory Type	FLASH
EEPROM Size	-
RAM Size	768 x 8
Voltage - Supply (Vcc/Vdd)	4V ~ 5.5V
Data Converters	A/D 8x10b
Oscillator Type	Internal
Operating Temperature	0°C ~ 70°C (TA)
Mounting Type	Through Hole
Package / Case	32-SDIP (0.400", 10.16mm)
Supplier Device Package	-
Purchase URL	https://www.e-xfl.com/product-detail/stmicroelectronics/st72f621k4b1

2 PIN DESCRIPTION

Figure 2. 44-pin LQFP and 42-Pin SDIP Package Pinouts





12.2.3 Thermal Characteristics

Symbol	Ratings	Value	Unit
T_{STG}	Storage temperature range	-65 to +150	°C
T_J	Maximum junction temperature[1)]	175	°C

Notes:
1. The maximum chip-junction temperature is based on technology characteristics.

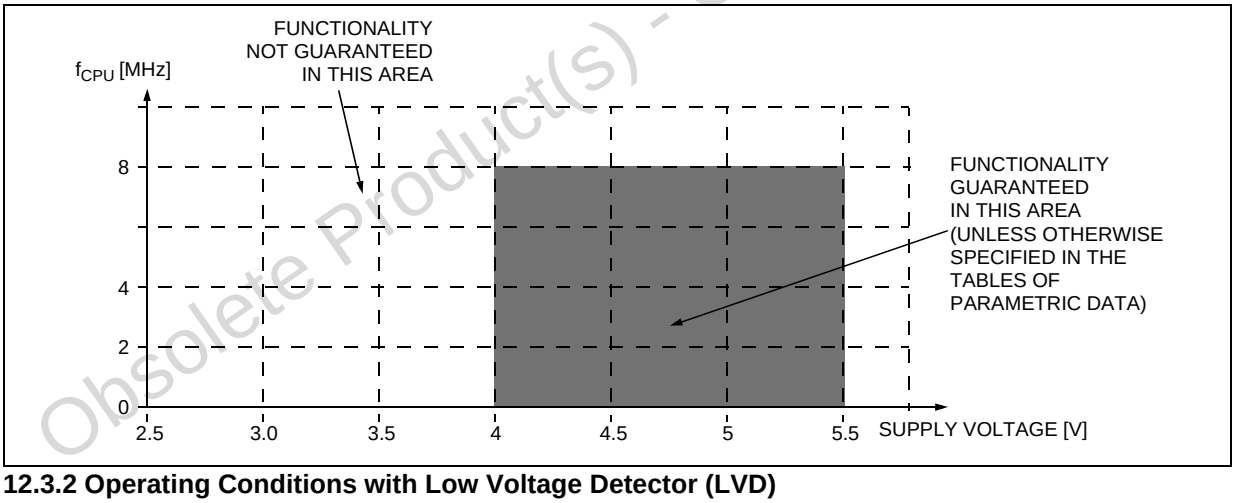
12.3 OPERATING CONDITIONS

12.3.1 General Operating Conditions (standard voltage ROM and Flash devices)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_{DD}	Operating Supply Voltage	f_{CPU} = 8 MHz	4	5	5.5	
V_{DDA}	Analog reference voltage		V_{DD}		V_{DD}	
V_{SSA}	Analog reference voltage		V_{SS}		V_{SS}	
f_{CPU}	Operating frequency	f_{OSC} = 12MHz			8	MHz
		f_{OSC} = 6MHz			4	
T_A	Ambient temperature range		0		70	°C

.

Figure 55. f_{CPU} Versus V_{DD} for standard voltage devices



12.3.2 Operating Conditions with Low Voltage Detector (LVD)

Subject to general operating conditions for V_{DD}, f_{CPU}, and T_A. Refer to Figure 15 on page 21.

Symbol	Parameter	Conditions	Min	Typ [1)]	Max	Unit
V_{IT+}	Low Voltage Reset Threshold (V_{DD} rising)	V_{DD} Max. Variation 50V/ms	3.6	3.8	3.95	V
V_{IT-}	Low Voltage Reset Threshold (V_{DD} falling)	V_{DD} Max. Variation 50V/ms	3.45	3.65	3.8	V
V_{hyst}	Hysteresis (V_{IT+} - V_{IT-})		120 [2)]	150 [2)]	180 [2)]	mV
Vt_{POR}	V_{DD} rise time rate [3)]		0.5		50	V/ms

Notes:
1. Not tested, guaranteed by design.
2. Not tested in production, guaranteed by characterization.
3. The V_{DD} rise time rate condition is needed to insure a correct device power-on and LVD reset. Not tested in production.

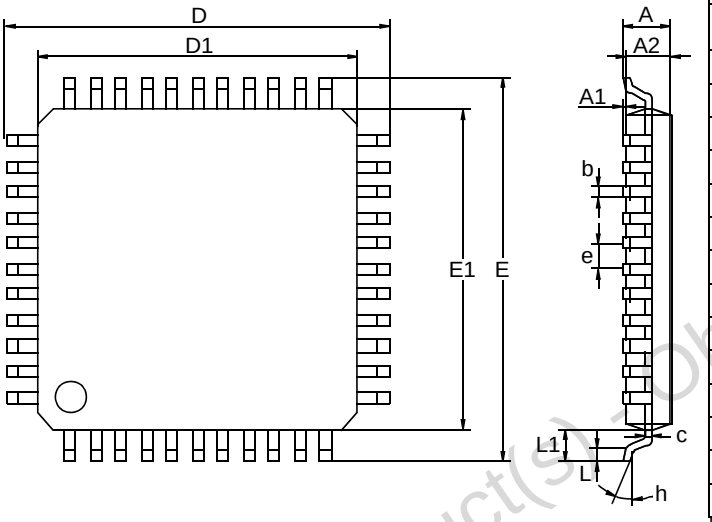
13 PACKAGE CHARACTERISTICS

In order to meet environmental requirements, ST offers this device in different grades of ECOPACK® packages, depending on their level of environmental compliance. ECOPACK® specifications, grade definitions and product status are available at: www.st.com.

ECOPACK® is an ST trademark.

13.1 PACKAGE MECHANICAL DATA

Figure 86. 44-Pin Low Profile Quad Flat Package (10x10)



Dim.	mm			inches[1]		
	Min	Typ	Max	Min	Typ	Max
A			1.60			0.0630
A1	0.05		0.15	0.0020		0.0059
A2	1.35	1.40	1.45	0.0531	0.0551	0.0571
b	0.30	0.37	0.45	0.0118	0.0146	0.0177
C	0.09		0.20	0.0035		0.0079
D		12.00			0.4724	
D1		10.00			0.3937	
E		12.00			0.4724	
E1		10.00			0.3937	
e		0.80			0.0315	
θ	0°	3.5°	7°	0°	3.5°	7°
L	0.45	0.60	0.75	0.0177	0.0236	0.0295
L1		1.00			0.0394	
	Number of Pins					
N	44					

Note 1. Values in inches are converted from mm and rounded to 4 decimal digits.