❏ MN6755486 / 675556

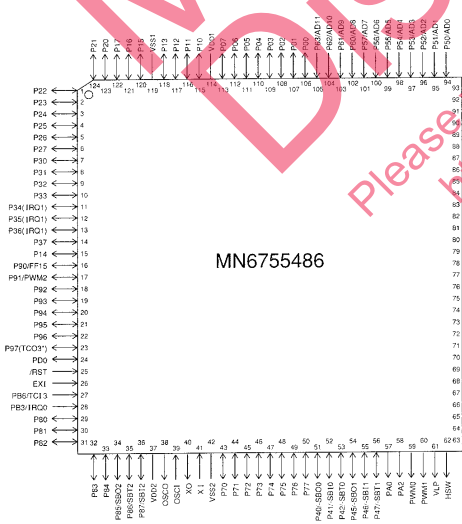| ▌Type	MN6755486 / 675556
▌ROM (x8-bit)	48K / 64K
▌RAM (x8-bit)	1024 / 1536

▌Minimum Instruction Execution Time	With Main Clock operated	**0.25µs (at 3.0 to 4.0V, 16MHz) : MN6755486 (128pin), MN675556**
		0.33µs (at 4.0 to 5.5V, 12MHz) : MN6755486 (124pin)
	With Sub-clock operated	**122µs (at 2.2 to 4.0V, 32kHz) : MN6755486 (128pin), MN675556**
		122µs (at 2.2 to 5.5V, 32kHz) : MN6755486 (124pin)

▌**Interrupts**

• RESET   • Runaway   • External 0   • External 1 (4 Input Expandable)   • Cylinder FG   • Capstan FG
• HSW   • VSYNC   • General-use Capture   • Free Running Counter   • CTL   • Winding Reel FG
• Feeding Reel FG   • Timer 0 to 5   • Synchronous Output   • Continuous Synchronous Output   • DMA
• Direction Detection   • Serial 0, 1, 2   • A/D

▌**Timer Counter**

Timer Counter 0 : 16-bit x 1 (Synchronous Interrupt function)
　Clock Source ....System Clock, XI Oscillation Clock, 1/32 of OSC Oscillation Clock
　Interrupt Source ....Overflow of Timer Counter 0, Coincidence of Output Compare Register

Timer Counter 1 : 16-bit x 1 (Event Count, Synchronous Serial Clock Generator)
　Clock Source ....System Clock, 1/32 of OSC Oscillation Clock, AFG Frequency Dividing Signal
　Interrupt Source ....Overflow of Timer Counter 1

Timer Counter 2 : 16-bit x 1 (Event Count, Input Capture, Synchronous Interrupt function)
　Clock Source ....System Clock, 1/32, 1/48 OSC Oscillation Clock
　Interrupt Source ....Overflow of Timer Counter 2, DCTL Signal Edge,
　　　　　　　　　　　　　　Bit Counter Underflow of Shift Register,
　　　　　　　　　　　　　　Coincidence of Compare Register and Shift Register

Timer Counter 3 : 16-bit x 1 (Timer Output [Possible at Mask Option], Event Count, Serial Index Search)
　Clock Source ....System Clock, 1/32 of OSC Oscillation Clock, TCI3 Input
　Interrupt Source ....Overflow of Timer Counter 3

Timer Counter 4 : 16-bit x 1 (Event Count, Linear Time Count)
　Clock Source ....1/32 of OSC Oscillation Clock, CTL Signal
　Interrupt Source ....Overflow of Timer Counter 4

Timer Counter 5 : 30-bit x 1 (Clock, Buzzer Output)
　Clock Source ....System Clock, XI Oscillation Clock, 1/32, 1/256 of OSC Oscillation Clock
　Interrupt Source ....Overflow of Timer Counter (Interrupts for second, minutes, and hours can be
　　　　　　　　　　　　　　created.)

Watchdog Timer : 19-bit x 1 (Watchdog)
　Clock Source ....OSC Oscillation Clock, XI Oscillation Clock,
　Interrupt Source ....Watchdog Timer period 65.6ms (fosc=at 16MHz), 84.7ms (fosc=at 12MHz),
　　　　　　　　　　　　　　128ms (XI=at 32kHz)

▌**Serial Interface**

Serial 0 : 8-bit x 1 (Synchronous Type) (Transfer direction of MSB/LSB selectable, Start Condition function)
　Clock Source ....1/2, 1/4, 1/8 of System Clock, 1/256 of OSC Oscillation Clock,
　　　　　　　　　　　　　　1/2 of Timer Counter 1, $\overline{\text{SBT0}}$ Pin Input

Serial 1 : 8-bit x 1 (Synchronous Type) (Transfer direction of MSB/LSB selectable, Start Condition function)
　Clock Source ....1/2, 1/4, 1/8 of System Clock, 1/256 of OSC Oscillation Clock,
　　　　　　　　　　　　　　1/2 of Timer Counter 1, $\overline{\text{SBT1}}$ Pin Input

Serial 2 : 8-bit x 1 (Synchronous Type) (Transfer direction of MSB/LSB selectable, Start Condition function)
　Clock Source ....1/2, 1/4, 1/8 of System Clock, 1/256 of OSC Oscillation Clock,
　　　　　　　　　　　　　　1/2 of Timer Counter 1, $\overline{\text{SBT0}}$ Pin Input

I/O Pins	I/O	64	• Common use : 32
	Input	27	• Common use
	Output	4	

|	
A/D	8-bit x 12ch (without S/H)
D/A	13-bit x 2ch
PWM	8-bit x 2ch (at Repetition Cycle 32µs, 16MHz), 14-bit x 1ch (at Repetitio Cycle 1.024ms, 16MHz)
ICR	18-bit x 3ch, 16-bit x 5ch
OCR	16-bit x 2ch
FGICR	9-bit x 1ch, 11-bit x 3ch
Simple Remote-control Reception Function	On-chip 4:3 majority-verdict circuit and general-use capture circuit (IRQ0 input)
Special Ports	Real Time Output [16 (with DMA function), 4 (4-state Synchronous Output), 8 (2-state Synchronous Output)], CTL Amp, DMA, Reel FG Input
Notes	VISS/VASS Detector function
Package	MN6755486 : QFP124-P-2828, QFP128-P-1818 MN675556 : QFP128-P-1818

Support Tool

In-Circuit Emulator	Mr. ICE / 1860 (made by Computex Co. Ltd.)
Piggyback	Use **EP67556** as piggy in QFP124-P-2828 / QFP128-P-1818 package.
EPROM built-in Type	Use **MN67P55646** [ES (Engineering Sample) available] in QFP124-P-2828 / QFP128-P-1818 package.

Pin Assignment

QFP124-P-2828
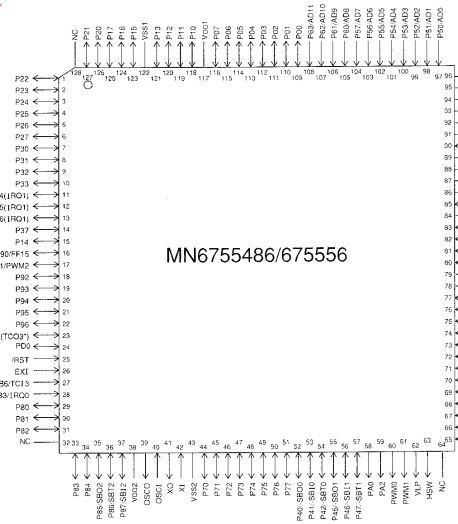
MN6755486

QFP128-P-1818

MN6755486/675556

NC : Nothing connected with pin.

See the next page for electrical characteristics.

Electrical Characteristics

Supply Current (MN6755486 (128pin), MN675556)

Parameter	Symbol	Condition	Limit min	Limit typ	Limit max	Unit
Operating Supply Current	IDD1	fosc=16M, STBH (ANACNT, #A9)='01'		30	50	mA
Supply Current at STOP	IDD2	Oscillation halt, No load STBH (ANACNT, #A9)='00'			10	µA
Supply Current at SLOW	IDD3	VDD=3V, XI=32kHz, STBH=0, No load		250	500	µA
Supply Current at HALT	IDD4	VDD=3V, XI=32kHz, STBH=0, No load		5	10	µA

(Ta=25°C, VDD=5.0V, VSS=0V)

A/D Converter Characteristics (MN6755486 (128pin), MN675556)

Parameter	Symbol	Condition	Limit min	Limit typ	Limit max	Unit
A/D Conversion Absolute Error					±3	LSB
A/D Conversion Relative Error					±3	LSB
A/D Conversion Time		fosc=16MHz		3.25		µs
Analog Input Voltage			0.32		2.88	V

(Ta=25°C, VDD=5.0V, VSS=0V)

Supply Current (MN6755486 (124pin))

Parameter	Symbol	Condition	Limit min	Limit typ	Limit max	Unit
Operating Supply Current	IDD1	fosc=16M, STBH (ANACNT, #A9)='01'		30	55	mA
Supply Current at STOP	IDD2	Oscillation halt, No load STBH (ANACNT, #A9)='00'			10	µA
Supply Current at SLOW	IDD3	VDD=3V, XI=32kHz, STBH=0, No load			500	µA
Supply Current at HALT	IDD4	VDD=3V, XI=32kHz, STBH=0, No load		5	10	µA

(Ta=25°C, VDD=5.0V, VSS=0V)

A/D Converter Characteristics (MN6755486 (124pin))

Parameter	Symbol	Condition	Limit min	Limit typ	Limit max	Unit
A/D Conversion Absolute Error					±3	LSB
A/D Conversion Relative Error					±3	LSB
A/D Conversion Time		fosc=12MHz		4.33		µs
Analog Input Voltage			0.5		4.5	V

(Ta=25°C, VDD=5.0V, VSS=0V)

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