

MN102L230

Type		MN102L230	
ROM (x8-bit / x16-bit)		Maximum 16M in external total (Control register, Inbuilt RAM, Character multiplex I/F space, VRAM, DRAM, Reserve Space included)	
RAM (x16-bit)		2K	
Minimum Instruction Execution Time		100ns (at 4.5 to 5.5V, 20MHz)	
Interrupts		External 4 Internal 6 : Timer x 2, A/D x 1, TV peripheral block x 1, Watchdog x 1, NMI x 1 TV peripheral block internal interrupt : OSD x 4, Serial x 2, I ² C x 1, MUSE x 4, Remote Control x 5	
Timer Counter		Timer Counter 10, 11 : 16-bit x 2 (1000-division down counter) Clock Source1/ (1 to 256) of System Clock Interrupt SourceUnderflow of Timer Counter 10, 11 Watchdog : 17-bit x 1	
Serial Interface		Serial 0 : 8-bit x 1 (Transmission / Reception of arbitrary bit length, Transfer direction of MSB / LSB selectable, Clock Polarity selectable, Start Condition function) Clock Source625k, 312.5k, 156.3k, 104.2k, 52.1k, 39.1k, 26.0kHz (OSC=at 20MHz) I²C x 1 : For multi master mode, Bus line (output) has 2 systems Clock Source89.3k, 78.1k, 62.5k, 52.1k, 44.6k, 39.1kHz (OSC=at 20MHz) MUSE Serial Bus : Responds to arbitrary byte-length transfer, Parity Error, Acknowledge error detection function Clock Source156.3k, 104.2k, 78.1k, 52.1k, 39.1k, 26.6kHz	
I/O Pins	I/O	49	• Common use : 2
A/D Inputs		8-bit x 8ch (with S/H)	
D/A Inputs		4-bit x 3ch (Analog R, G, B Output)	
Special Ports		Remote Control Reception, Character multiplex LSI (MN83601) I/F	
CRTC		Bit map OSD : Packed pixel (4-bit / pixels) method, internal 32 color pallet, 16 colors simultaneously displayed per field, horizontal pixel width 512 to 840 pixels (when display covers entire screen within 28 μs / 32 μs)	
Notes		VRAM, DRAM Refresh Controller, Remote control input discriminant circuit built-in	
Package		QFP160-P-2828B	

Electrical Characteristics

A/D, D/A Characteristics

Parameter	Symbol	Condition	Limit			Unit
			min	typ	max	
A/D Conversion Absolute Error		ADVDD=5V, ADVSS=0V			±5	LSB
A/D Conversion Time		OSC=20MHz	4.0			μs
A/D Analog Input Voltage	VIA		VSS		VDD	V
D/A Full-scale Output Current	IFS	VREF =1.2V, VRIREF=1.2kΩ	4	5	6	mA
D/A Output Voltage Setting Range	VO	RL=200Ω, VREF=1.2V, RIREF=1.2kΩ	0		1.2	V
D/A Non-linear Error	NLE	RL=200Ω, VREF=1.2V, RIREF=1.2kΩ			±0.5	LSB
D/A Differential Non-linear Error	DNLE	RL=200Ω, VREF=1.2V, RIREF=1.2kΩ			±0.5	LSB
D/A Channel Interval Error	IFS	VREF=1.2V, RIREF=1.2kΩ Error from 3-channel average IFS			±3	%

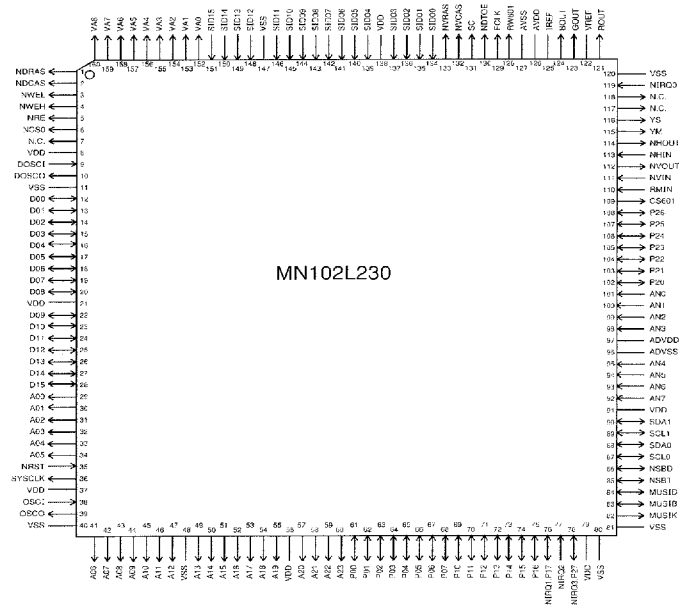
(Ta=25°C, VDD=AVDD=ADVDD=5.0V, VSS=AVSS=ADVSS=0V, fosc=20MHz)

Support Tool

In-Circuit Emulator

PX-ICE102L00 + PX-PRB102L23
PARTNER-EX1020023

Pin Assignment



QFP160-P-2828B

NC : Nothing connected with pin.