

The RISC power shapes your imagination



Empower your creativity

V850
Embedded Controller

The future-oriented V850 Series

If your designs are pushing the limits of traditional 16-bit controllers, give yourself plenty of growing room with the 32-bit RISC microcontrollers in our V850 Series.

Our future-oriented V850 Series excels in challenging applications. It offers a unique combination of high performance, low power consumption, enhanced functionality and excellent cost-efficiency.

Our 32-bit RISC microcontrollers are ideally suited for applications such as audio/visual systems, printers and industrial systems, which require outstanding performance in system control and data processing.

When you need cutting-edge features for competitive markets, take advantage of the innovative V850 Series.

Features of the V850 Series

- ◎ Almost 10 times faster than our conventional 16-bit microcontrollers
- ◎ Extensive middleware (software library) makes it easy to add more functions
- ◎ Development environment combines advanced capabilities and easy of use
- ◎ Built-in, flash-memory types available
- ◎ Various peripheral functions, including timer, CSI, UART, A/D converter



Multi-purpose microcontrollers V850 K and V850 S

- Low power consumption
- Low noise
- Options include ROM/RAM and various package types
- Additional peripheral functions, including D/A converter, sub clock, I²C Bus, ROM correction



High-performance microcontrollers V850 M

- High speed operation over 33MHz
- Memory interface optimized for external memories
- Additional peripheral functions, including DMAC, powerful memory controller



ASSPs (Application Specific Standard Products)

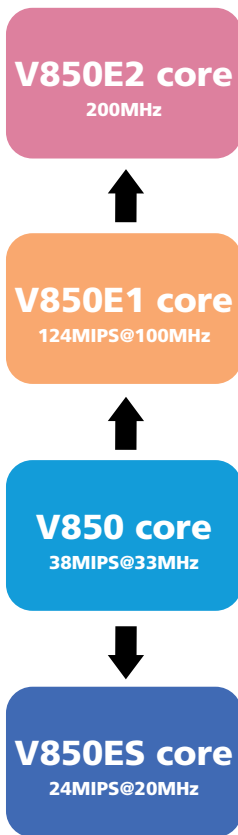
- Integrating application-specific functions for singlechip control
- Offering CPU cores as ASIC macros for systems on silicon

MCU specifications

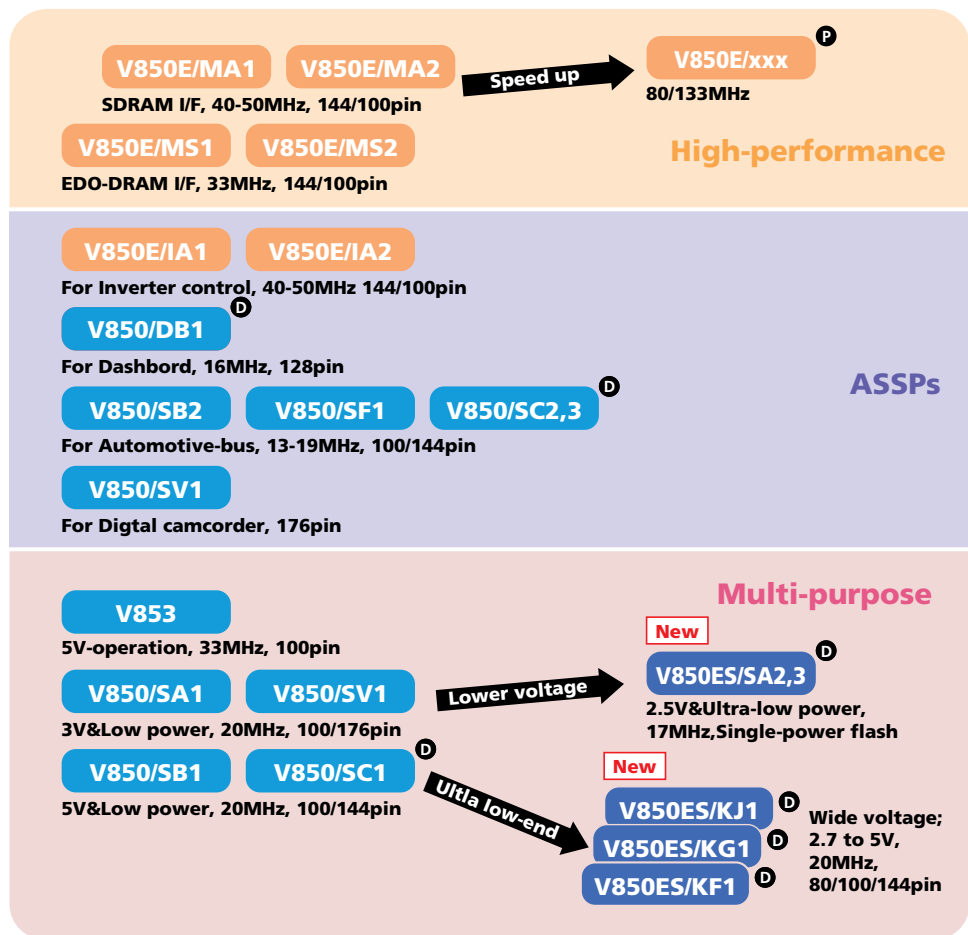
Item	78K/V	V850 Family		
		K lineup New	S lineup	M lineup
CPU	16bit 78K4 core	32bit V850E5 core	32bit V850 core 32bit V850E5 core	32bit V850E1 core
ROM/RAM	256K/12K	64K/4K to 128K/6K	64K/4K to 512K/24K	96K/4K to 256K/10K
Power consumption	55mW@12MHz	T.B.D	60mW@20MHz	400mW@50MHz
External memory	ROM/SRAM	ROM/SRAM	ROM/SRAM	SDRAM/EDODRAM/ DRAM/ROM/SRAM
Instruction cycle	160ns	50ns	50ns	20ns
Supply voltage	1.8V to 5.5V	2.7V to 5.5V	4.5V to 5.5V or 2.7V to 3.6V or 2.2V to 2.7V	4.5V to 5.5V or 3.0V to 3.6V
Package lineup	80/100pin	80/100/144pin	100/144/176pin	100/144pin

Product lineup of V850 Series

CPU cores



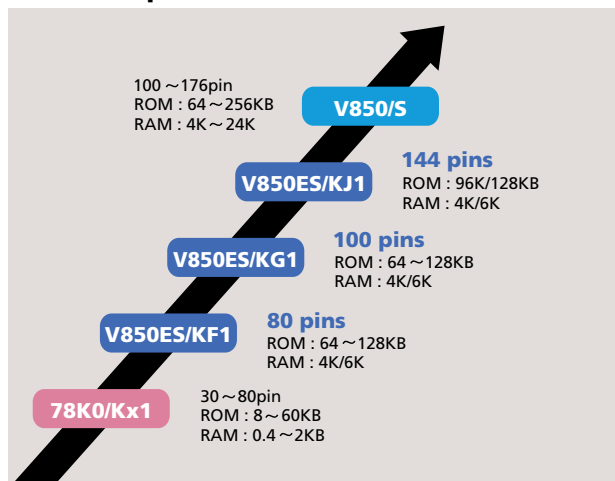
Product lineup



^D Under development ^P Under planning

Topics

Road map



The new lineup "K" as successor of 78K0

Cover 16bit microcontroller's area

- Various ROM size ; 64KB to 128KB
- Various package type ; 80/100/144pin
- High speed operation ; 20MHz

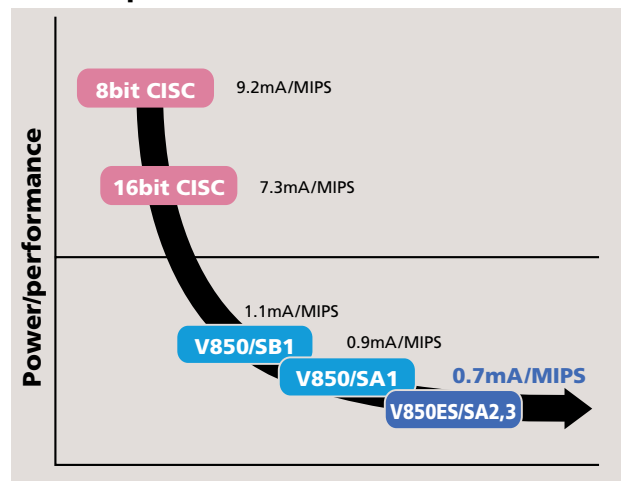
Upper compatible peripheral through 78K0 to V850

- The same function of key peripherals such as time, CSI, UART, A/D converter, etc.

Wide operating voltage

- 2.7V to 5.5V

Power/performance



V850ES/SA2, SA3, with single power flash PROM

Built-in 256KBytes of the single power flash PROM

- Re-programming available at single power supply

Low voltage and Low power consumption

- Operate on 2.2V-2.7V and 30mW @17MHz

various peripheral functions

- 8bit/16bit timer/counter, serial I/F, RTC, 10bit A/D converter and 8bit D/A converter

Multi-purpose microcontrollers V850 K product line

Classification	8/16bit microcontrollers	V850 product lineup	Applications
2.7V to 5V operation	784216A (D, S, R, I) ROM : 96K/128K RAM : 3.5K/5K/8K 160ns/12.5MHz 100pin QFP/LQFP 784225A (D, S, R, I) ROM : 96K/128K RAM : 3.5K/4K 160ns/12.5MHz 80pin QFP/LQFP V850ES/KG1 (D, S, R, I) μPD703212/ 3213/3214 ROM : 64K/96K/128K RAM : 4K/4K/6K 50ns/20MHz 100pin QFP V850ES/KF1 (S, R) μPD703208/ 3209/3210 ROM : 64K/96K/128K RAM : 4K/4K/6K 50ns/20MHz 80pin QFP/LQFP V850ES/KJ1 (D, S, R, I) μPD703217/ 3217/3216 ROM : 96K/128K RAM : 6K/6K 50ns/20MHz 144-pin QFP		Home audios Car audios Home appliance Printers Industry Automotive
	Legend: MP MP Under Development Under Development On Plan On Plan Recommended Recommended Feature icons: D D/A S Sub Clock R ROM Correction Function I I²C M DMA		

Multi-purpose microcontrollers

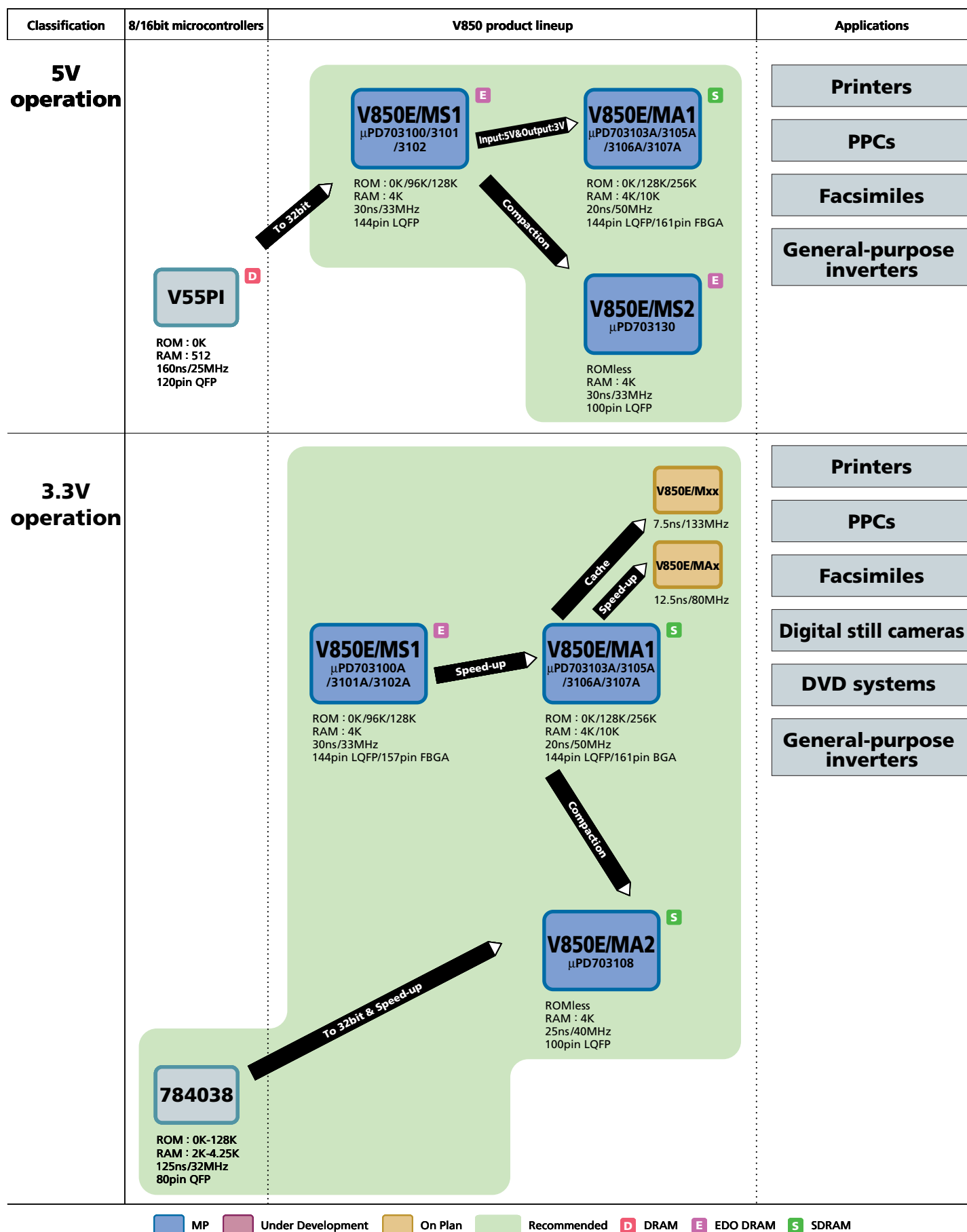
V850 S product line

Classification	8/16bit microcontrollers	V850 product lineup	Applications
5V operation		784046 (MP, D) ROM : 32K/64K RAM : 1K/2K 125ns/32MHz 80pin QFP To 32bit V853A (MP, D) μPD703003A/ 3004A/3025A ROM : 96K/128K/256K RAM : 4K/8K 30ns/33MHz 100pin LQFP/121pin FBGA I/O expansion V850/SC1 (MP, S, R, I, M) μPD703068 ROM : 512K RAM : 24K 50ns/20MHz 144pin QFP ROM expansion V850/SB1 (MP, S, R, I, M) μPD703031B/ 3033B ROM : 128K/256K RAM : 8K/16K 50ns/20MHz 100pin QFP/LQFP V850/SB1 (MP, S, R, I, M) μPD703030B/ 3032B ROM : 384K/512K RAM : 24K/24K 50ns/20MHz 100pin QFP	PPCs Motor control Printers
		784218A (MP, D, S, R, I) ROM : 96K-256K RAM : 3.5K-12.5K 160ns/12.5MHz 100pin QFP/LQFP To 32bit V850/SA1 (MP, S, R, I, M) μPD703014A/ 3015A/3017A/ 3015B/3014B ROM : 64K/128K/256K RAM : 4K/8K 50ns/20MHz 100pin LQFP/121pin FBGA I/O expansion V850/SV1 (MP, S, R, I, M) μPD703039/3040/ 3041/3038 ROM : 192K/256K/384K RAM : 8K/16K 50ns/20MHz 176pin LQFP/180pin FBGA	Car audios Audios TVs, VCRs Telephones
3V operation		784216A (MP, D, S, R, I) Min.2.0V@3.125MHz ROM : 128K RAM : 8K 640ns/3.125MHz 100pin QFP/LQFP To 32bit V850ES/SA2, SA3 (MP, D, S, R, I, M) μPD703201/ μPD703204 Min.2.2V@17MHz ROM : 128K*/256K RAM : 8K*/16K 59ns/17MHz 100pin TQFP(SA2)/121pin FBGA(SA3) *Planning(SA2 only)	DVCs(servo) DVCs(system control) MDs Utility meters PHSs Mobile equipments
2.5V operation		784216A (MP, D, S, R, I) Min.2.0V@3.125MHz ROM : 128K RAM : 8K 640ns/3.125MHz 100pin QFP/LQFP To 32bit V850ES/SA2, SA3 (MP, D, S, R, I, M) μPD703201/ μPD703204 Min.2.2V@17MHz ROM : 128K*/256K RAM : 8K*/16K 59ns/17MHz 100pin TQFP(SA2)/121pin FBGA(SA3) *Planning(SA2 only)	DVCs(system control) MDs Mobile equipments Utility meters

MP
Under Development
On Plan
Recommended
D D/A
 S Sub Clock
 R ROM Correction Function
 I I²C
 M DMA

High-performance microcontrollers

V850 M product line



ASSPs (Application Specific Standard Products)

Classification	8/16bit microcontrollers	V850 product lineup	Applications
Car mount bus incorporated (5V)	784937 IEBus built-in ROM : 96K-256K RAM : 5K-10K 160ns/12.5MHz 100pin QFP To 32bit V850/SB2 μPD703034A/3035A /3036A/3037A IEBus built-in ROM : 128K/256K/384K/512K RAM : 8K/16K/24K 77ns/13MHz 100pin QFP/LQFP I/O expansion V850/SC2 μPD703069 IEBus built-in ROM : 512K RAM : 24K 53ns/19MHz 144pin LQFP		Car audios
	780703 DCAN built-in ROM : 60K RAM : 3K 250ns/8MHz 80pin QFP To 32bit & FCAN V850/SF1 μPD703076A/3075A /3078A/3079A FCANx1 built-in/x2 built-in ROM : 256K/128K RAM : 16K/8K 62.5ns/16MHz 100pin QFP/LQFP I/O expansion V850/SC3 μPD703088 /3089 FCANx1 built-in/x2 built-in ROM : 512K RAM : 24K 62.5ns/16MHz 144pin LQFP		Car audios Car mount electronic equipments (accessories)
Dashboard (5V)	780824B/0826B/0828B 4 Meter C/D, CAN LCD 28×4com ROM : 32K/48K/60K RAM : 1.5K/1.5K/3K 80pin QFP To 32bit Expand I/O V850/DB1 μPD703081 6 Meter C/D, 2ch CAN, LCD 36×4com ROM : 128K RAM : 6K 62.5ns/16MHz 128pin QFP To 32bit Expand I/O, Add LAN 780851/0852 4 Meter C/D LCD 20×4com ROM : 32K/40K RAM : 1.5K 80pin QFP/LQFP		Dashboard System Automotive
Inverter control (5V)	78366A Timer for inverter control ROM : 0K-48K RAM : 768/2K 125ns/12MHz 80pin QFP To 32bit & I/O exp V850E/IA1 μPD703116 FCAN built-in Timer for inverter control ROM : 256K RAM : 10K 20ns/50MHz 144pin LQFP Compaction V850E/IA2 μPD703114 Timer for inverter control ROM : 128K RAM : 6K 25ns/40MHz 100pin LQFP To 32bit & I/O expansion		Inverter-type air conditioners General-purpose inverters Car mount electronic equipments (HEV, EPS etc)
Camcoder (3V)	V854 μPD703008 Timer for VTR servo ROM : 128K RAM : 4K 30ns/33MHz 144pin QFP ROM & I/O expansion V850/SV1 μPD703039/3040 /3041/3038 Timer for VCR servo ROM : 192K/256K/384K RAM : 8K/16K 50ns/20MHz 176pin LQFP/180pin FBGA		Camcoders

MP
 Under Development
 On Plan
 Recommended

Multi-purpose microcontrollers V850 K product list

Item		Package	Frequency (max)	ROM (Kbytes)	RAM (Kbytes)	I/O	Timer	Serial I/O	A/D	Sub clock	Note
V850ES/KJ1	μPD703216	144pin QFP	20MHz@5V 10MHz@3V	96	6	128	10 (16bit×6, 8bit×4)	7 (UART×2, CSI0×3, CSIA×2, UART/IIC×1, IIC×1)	10bit×16	○	8bitD/A×2, ROM correction function
	μPD703217			128							
	μPD70F3217										
V850ES/KG1	μPD703212	100pin LQFP		64	4	84	8 (16bit×4, 8bit×4)	6 (UART×2, CSI0×2, CSIA×2, IIC×1)	10bit×8	○	
	μPD703213			96	6						
	μPD703214			128							
	μPD70F3214										
V850ES/KF1	μPD703208	80pin QFP/ LQFP		64	4	67	6 (16bit×2, 8bit×4)	5 (UART×2, CSI0×2, CSIA×1, IIC×1)		○	ROM correction function
	μPD703209			96							
	μPD703210			128	6						
	μPD70F3210										

Multi-purpose microcontrollers V850 S product list

5V operation

Item	Package	Frequency (max)	ROM (Kbytes)	RAM (Kbytes)	I/O	Timer	PWM	Serial I/O	A/D	Sub clock	Note
V853	μPD70F3003A	33MHz	128	4	75	5 (16bit×5)	8-12bit×2	4 (CSI×2, CSI/UART×2)	10bit×8	—	D/A×2
	μPD703003A		128	4							
	μPD703004A		96	4							
	μPD703025A		256	8							
	μPD70F3025A		256	8							
V850/SB1	μPD703031B	20MHz	128	8	83	8 (16bit×2, 8bit×6)	—	5 (CSI×1, CSI/I ² C×2, CSI/UART×2)	10bit×12	○	ROM correction function
	μPD703033B		256	16							
	μPD70F3033B		256	16							
	μPD703030B		384	24							
	μPD703032B		512	24							
	μPD70F3032B		512	24							
V850/SC1	μPD703068	20MHz	512	24	124	10 (16bit×10)	—	8 (CSI/I ² C×2, CSI/UART×2, CSI×2, UART×2)	10bit×12	○	ROM correction function
	μPD70F3089										

3V operation

Item	Package	Frequency (max)	ROM (Kbytes)	RAM (Kbytes)	I/O	Timer	PWM	Serial I/O	A/D	Sub clock	Note							
V850/SA1	μPD703014A/14B	100pin LQFP 121pin FBGA* *A product only	20MHz	64	4	85	6 (16bit×2, 8bit×4)	—	4 (CSI×1, CSI/I ² C×1, CSI/UART×1, UART×1)	10bit×12	○	—						
	μPD703015A/15B			128	4													
	μPD70F3015B			128	4													
	μPD703017A			256	8													
	μPD70F3017A			256	8													
V850/SV1	μPD703041	176pin LQFP	20MHz	192	8	151	12 (24bit×2, 16bit×2, 8bit×8)	4	5 (CSI×1, CSI/I ² C×1, CSI/UART×2)	10bit×16	○	Vsync/Hsync separate circuit ROM correction function						
	μPD703039	176pin LQFP 180pin FBGA		256	8													
	μPD703040			256	16													
	μPD70F3040			256	16													
	μPD70F3038	180pin FBGA	20MHz	384														
	μPD703038												16					

2.2-2.7V operation

Item	Package	Frequency (max)	ROM (Kbytes)	RAM (Kbytes)	I/O	Timer	Serial I/O	A/D	DMA	Sub clock	Note
V850ES/SA2	μPD703201	17MHz	256	16	82	6 (16bit×2, 8bit×4)	4(CSI×2, CSI/IIC×1, CSI/UART×2)	10bit×12	4	○	8bitD/A×2, ROM correction function
	μPD7032xx		128	8							
	μPD703204		256	16			5(CSI×3, CSI/IIC×1, CSI/UART×1)	10bit×16			

High-performance microcontrollers

V850 M product list

5V operation

Item		Package	Frequency (max)	ROM (Kbytes)	RAM (Kbytes)	I/O	Timer	Serial I/O	A/D	DMA	Memory I/F	Note
V850E/MS1	μPD703100	144pin LQFP	40MHz	—	4	123	8 (16bit×8)	4 (CSI×4, CSI/UART×2)	10bit×8	4	EDO DRAM/ DRAM/ROM /SRAM	Supply 3.3V for CPU
	μPD703101		96									
	μPD703102		128									
	μPD70F3102		128									
V850/MS2	μPD703130	100pin LQFP	33MHz	—	4	81	6 (16bit×6)	2 (CSI/UART×2)	10bit×4	4	EDO DRAM/ DRAM/ROM /SRAM	Supply 3.3V for CPU Subset of V850E/MS1
V850E/MA1	μPD703103A	144pin LQFP	50MHz	—	4	115	8 (16bit×8)	4 (CSI×1, CSI/UART×2, UART×1)	10bit×8	4	SDRAM/ EDO DRAM/ ROM/SRAM	Supply 3.3V for CPU Input:3.3 to 5.0V Output:3.3V
	μPD703105A			128	4							
	μPD703106A	144pin LQFP 161pin FBGA		128	10							
	μPD703107A			256	10							
	μPD70F3107A			256	10							

3.3V operation

Item		Package	Frequency (max)	ROM (Kbytes)	RAM (Kbytes)	I/O	Timer	Serial I/O	A/D	DMA	Memory I/F	Note
V850E/MS1	μPD703100A	144pin LQFP 157pin FBGA	40MHz	—	4	123	8 (16bit×8)	4 (CSI×4, CSI/UART×2)	10bit×8	4	EDO DRAM/ DRAM/ROM /SRAM	—
	μPD703101A		96									
	μPD703102A		128									
	μPD70F3102A		128									
V850E/MA1	μPD703103A	144pin LQFP	50MHz	—	4	115	8 (16bit×8)	4 (CSI×1, CSI/UART×2, UART×1)	10bit×8	4	SDRAM/ EDO DRAM/ ROM/SRAM	—
	μPD703105A			128	4							
	μPD703106A	144pin LQFP 161pin FBGA		128	10							
	μPD703107A			256	10							
	μPD70F3107A			256	10							
V850E/MA2	μPD703108	100pin LQFP	40MHz	—	4	79	6 (16bit×6)	2 (CSI/UART×2)	10bit×4	4	SDRAM/ ROM/SRAM	Subset of V850E/MA1

ASSPs (Application Specific Standard Products)

On-chip automotive bus(5V)

	Item	Package	Frequency (max)	ROM (Kbytes)	RAM (Kbytes)	I/O	Timer	Serial I/O	A/D	Sub clock	Functions	Note
V850/SB2	μPD703034B	100pin QFP /LQFP	13MHz	128	8	83	8 (16bit×2 8bit×6)	5 (CSI×1, CSI/I ² C×2, CSI/UART×2)	10bit×12	○	IE-Bus×1	ROM correction function
	μPD703035B			256	16							
	μPD70F3035B			256	16							
	μPD703036B	100pin QFP		384	24							
	μPD703037B			512	24							
	μPD70F3037B			512	24							
V850/SC2	μPD703069	144pin LQFP	19MHz	512	24	124	10 (16bit×10)	8 (CSI/I ² C×2,CSI/UART×2, CSI×2,UART×2)	10bit×12	○	IE-Bus×1	ROM correction function
	μPD70F3089											
V850/SF1	μPD703075A	100pin QFP /LQFP	16MHz	128	8	84	8 (16bit×8)	4 (CSI×1, CSI/I ² C×1, CSI/UART×2)	10bit×12	—	FCAN×1	ROM correction function
	μPD703076A										FCAN×2	
	μPD703078A			FCAN×1								
	μPD703079A			FCAN×2								
	μPD70F3079A											
V850/SC3	μPD703088	144pin LQFP	16MHz	512	24	124	10 (16bit×10)	8 (CSI/I ² C×2, CSI/UART×2, CSI×2,UART×2)	10bit×12	○	FCAN×1	ROM correction function
	μPD703089										FCAN×2	
	μPD70F3089											

Dashboard(5V)

Item	Package	Frequency (max)	ROM (Kbytes)	RAM (Kbytes)	I/O	Timer	Serial I/O	A/D	Functions	Note
V850/DB1	128pin TQFP	16MHz/ 4.0-5.5V	128	6	83	5 (16bit×3, 8bit×2)	5 (CSI×3,UART×2)	10bit×8	Meter C/D(6 meter) LCD 36×4com CAN×2	—

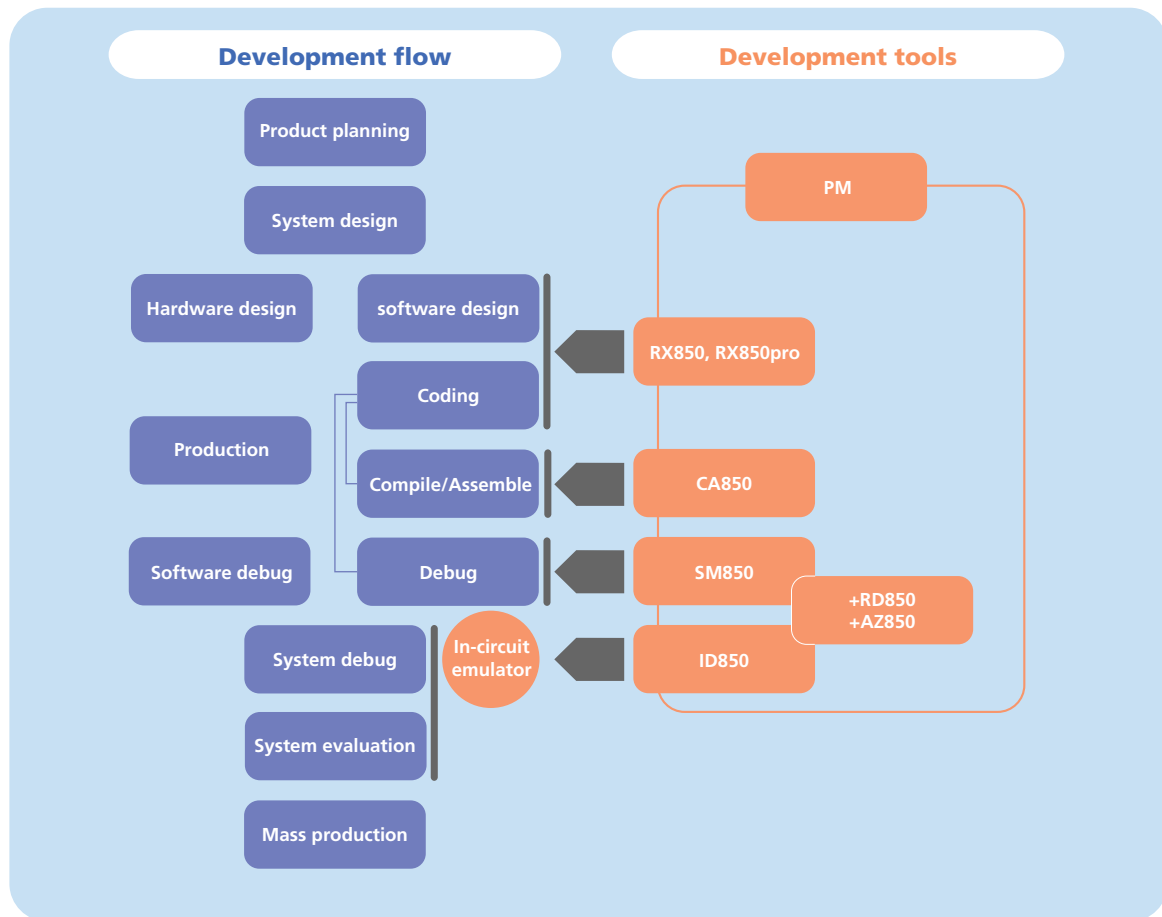
Inverter control(5V)

Item	Package	Frequency (max)	ROM (Kbytes)	RAM (Kbytes)	I/O	Timer	Serial I/O	A/D	Functions	Note
V850E/IA1	144pin LQFP	50MHz	256	10	83	8 (16bit×8)	5 (CSI×2,UART×3)	Dual 10bit×8	Timer for inverter control 16bit PWM timer×2 16bit UP/DOWN counter×2	FCAN×1 Supply 3.3V for CPU
V850E/IA2	100pin LQFP	40MHz	128	6	53	7 (16bit×7)	3 (CSI×1,UART×1)	Dual 10bit×6,8	Timer for inverter control 16bit PWM timer×2 16bit UP/DOWN counter×1	Supply 5.0V

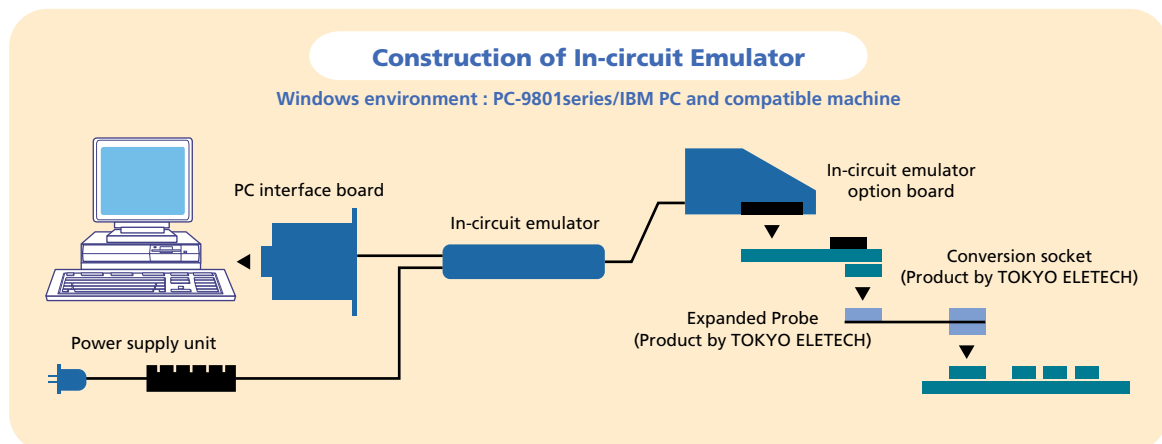
Camcoder(3V)

Item	Package	Frequency (max)	ROM (Kbytes)	RAM (Kbytes)	I/O	Timer	Serial I/O	A/D	Sub clock	Functions	Note	
V850/SV1	μPD703041	176pin LQFP	20MHz	192	8	151	10 (16bit×2, 8bit×8)	5 (CSI×1, CSI/I ² C×1, CSI/UART×2)	10bit×16	○	24bit timer×2 for VCR servo Vsync/Hsync separate circuit	ROM correction function
	μPD703039			256	8							
	μPD703040	176pin LQFP		256	16							
	μPD70F3040	180pin FBGA		256	16							
	μPD70F3038	180pin FBGA		384	16							
	μPD703038											

Software



Hardware



Series	Software						Hardware			Flash programmer (**** mean the package type.)
	Real-time OS	Compiler	Debugger	Simulator	System performance analyzer	Device file (**** mean the device name.)	In-circuit emulator	In-circuit emulator option board	Others	
V853	RX850 or RX850 pro	CA850	ID850	SM850	AZ850	DF703****	IE-703002-MC	IE-703003-MC-EM1	Power supply unit + PC I/F board + Socket/adapter + Expanded probe	PG-FP3 + FA-***** or PG-FP4 + FA-*****
V850/SB1				SM850				IE-703037-MC-EM1		
V850/SB2				SM850						
V850/SC1				—				IE-703089-MC-EM1		
V850/SC2				—						
V850/SC3				—						
V850/SF1				SM850				IE-703079-MC-EM1		
V850/SV1				—				IE-703040-MC-EM1		
V850/SA1				SM850				IE-703017-MC-EM1		
V850/DB1				—				IE-703081-MC-EM1		
V850ES/SA2				IE-V850ES-G1			IE-703204-G1-EM1	PC I/F board + Socket/adapter	PG-FP4 + FA-*****	
V850ES/SA3							—			
V850ES/KJ1				—			IE-703217-G1-EM1	PG-FP3 + FA-***** or PG-FP4 + FA-*****		
V850ES/KG1				—						
V850ES/KF1				—			IE-V850E-MC-A	IE-703107-MC-EM1	Power supply unit + PC I/F board + Socket/adapter + Expanded probe	
V850E/MA1				SM850						
V850E/MA2				SM850			IE-V850E-MC	IE-703116-MC-EM1		
V850E/IA1				SM850				IE-703114-MC-EM1		
V850E/IA2				SM850			IE-703102-MC-A	IE-703102-MC-EM1		
V850E/MS1				SM850						
V850E/MS2				—						

V850 Series frequency and memory capacitance

Frequency	Description	Series	MHz	PIN	ROM capacity (bytes)							
					ROMless	64K	96K	128K	192K	256K	384K	512K
>33MHz	V850 M	V850E/MA1	50MHz	144	RAM 4K	—	—	RAM 4K 10K	—	RAM 10K	—	—
	ASSP	V850E/IA1			—	—	—	RAM 6K	—	RAM 10K	—	—
	V850 M	V850E/MA2	40MHz	100	RAM 4K	—	—	—	—	—	—	—
	ASSP	V850E/IA2			—	—	—	RAM 6K	—	—	—	—
33MHz≥ >20MHz	V850 M	V850E/MS1	33MHz	144	RAM 4K	—	RAM 4K	RAM 4K	—	—	—	—
	V850 M	V850E/MS2		100	RAM 4K	—	—	—	—	—	—	—
	V850 - 5V	V853		100	—	—	RAM 4K	RAM 4K	—	RAM 8K	—	—
20MHz≥	V850 S (5V)	V850/SC1	20MHz	144	—	—	—	—	—	—	—	RAM 24K
	V850 S (5V)	V850/SB1		100	—	—	—	RAM 8K	—	RAM 16K	RAM 24K	RAM 24K
	V850 S (3V)	V850/SV1		176	—	—	—	—	RAM 8K	RAM 8K 16K	RAM 16K	—
	V850 S (3V)	V850/SA1		100	—	RAM 4K	—	RAM 4K	—	RAM 8K	—	—
	V850 S (2.5V)	V850ES/SA3	17MHz	121	—	—	—	—	—	RAM 16K	—	—
	V850 S (2.5V)	V850ES/SA2		100	—	—	—	RAM 8K	—	RAM 16K	—	—
	V850 K	V850ES/KJ1	20MHz	144	—	—	RAM 4K	RAM 6K	—	—	—	—
	V850 K	V850ES/KG1		100	—	RAM 4K	RAM 4K	RAM 6K	—	—	—	—
	V850 K	V850ES/KF1		80	—	RAM 4K	RAM 4K	RAM 6K	—	—	—	—
	ASSP	V850/DB1	16MHz	128	—	—	RAM 4K	RAM 6K	—	—	—	—
	ASSP	V850/SC2	18.86MHz	144	—	—	—	—	—	—	—	RAM 24K
	ASSP	V850/SC3	16MHz	144	—	—	—	—	—	—	—	RAM 24K
	ASSP	V850/SF1		100	—	—	—	—	—	RAM 16K	—	—
	ASSP	V850/SB2	13MHz	100	—	—	—	RAM 8K	—	RAM 16K	RAM 24K	RAM 24K



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- The page design has been altered.(Oct. 03)
- "78k00 series LCD Driver" page is updated.(Oct. 03)
 - [uPD780344,780344Y,780354,780354Y](#) subseries are added.
- "[Development Tools Software Download](#)"Page is updated. (Oct. 03)
 - Following Device files are available.
uPD780078, uPD780338, uPD780818, uPD789861
 - Following Parameter files are available.
uPD70F3114

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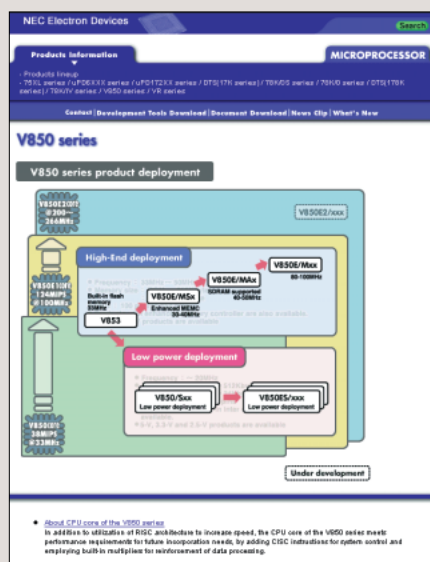
For information about the V850 Series and the V850 Series development environment, check out the NEC Microcomputer website.

Product information on the V850 Series, development environments for the V850 Series, and the middleware reference platform can be referenced.

Development tools for the V850 Series
can be downloaded.
Upgrade information is provided.

Documents about the V850 Series and V850 Series development environment can be downloaded.

Answer to questions about the V850 Series development environment are introduced.



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