


General Purpose Linear IC PRODUCTS

Operational Amplifier 

Comparator

Fixed Output Voltage, 3-Terminal Regulator 

Variable Output Voltage Regulator 

Regulator with System Reset 

Regulator with ON/OFF Function 

High Precision Reference Voltage 

Switching Regulator Control Circuit 

Functional Block

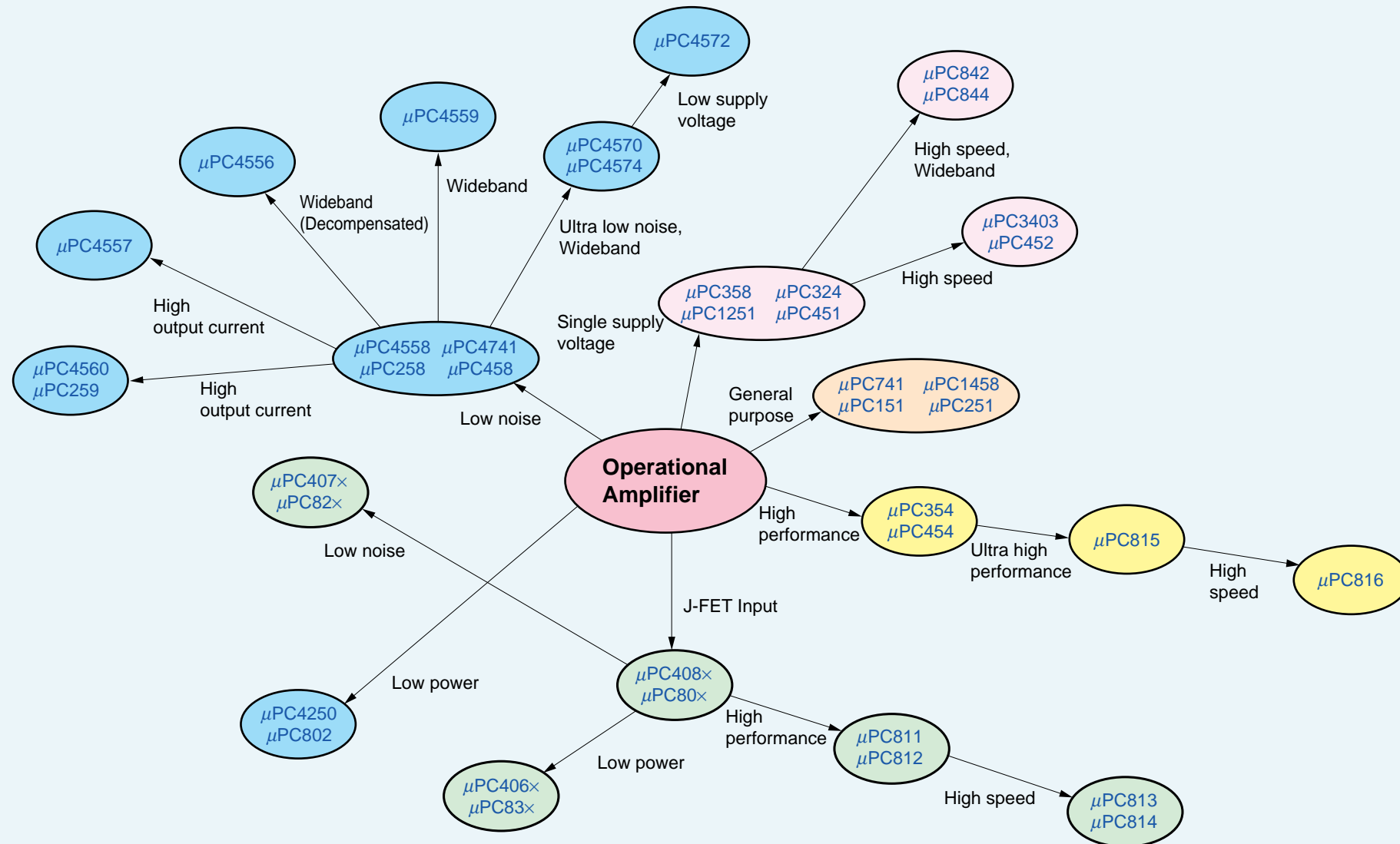
General Purpose Linear IC

 *Operational Amplifier*

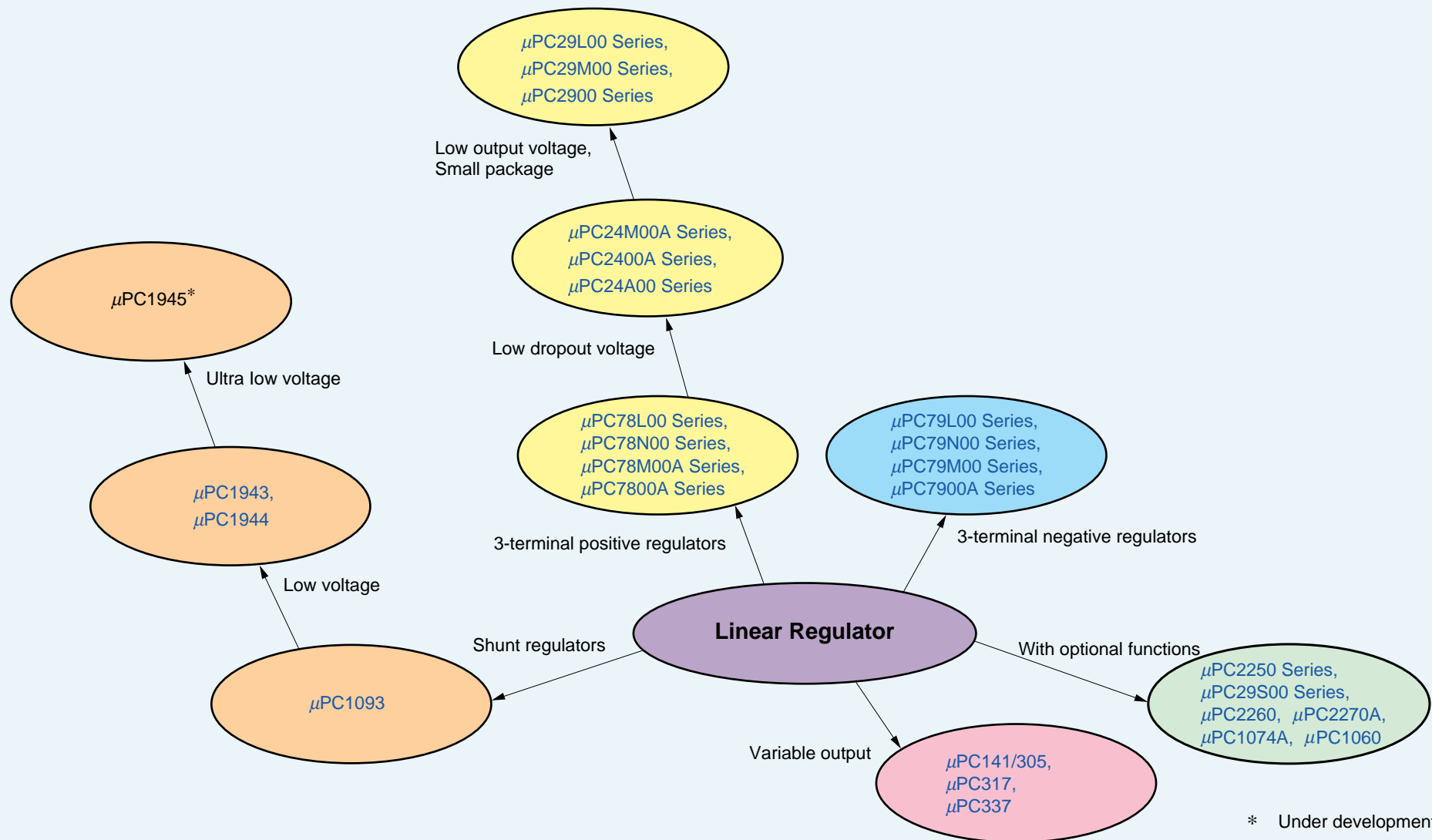
 *Linear Regulator*

 *Switching Regulator*

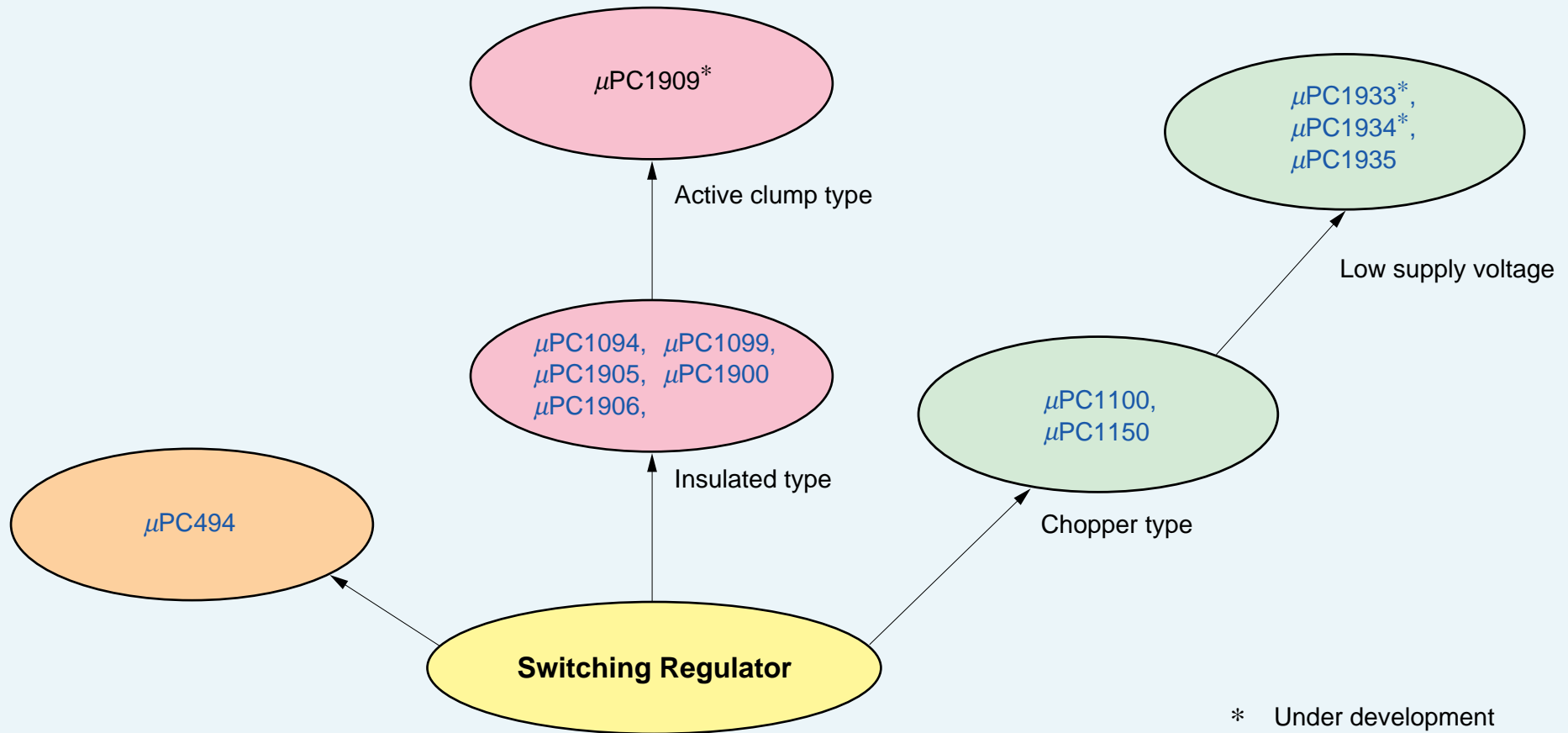
Operational Amplifier



Linear Regulator



Switching Regulator



Operational Amplifier

■ Operational Amplifier

Part number		Function*1			Recommended power supply voltage*2 (V)	Common mode input voltage range TYP. (V) T _A = +25 °C	Input stage transistor	GND Input/Output on single power	Low V _{io} Low T _A drift	Low input bias current	High speed	Wide band	Low noise	Low power	Packages*3			Number of pins				
Communication/industry use	General use	Single	Dual	Quad											C	G2	HA					
μPC151	μPC741	○			±7.5 to ±16	V ⁻ +2 to V ⁻ -0.5	NPN		○									○	○	8		
μPC251	μPC1458		○															○	○	8		
μPC354		○			±3 to ±16	V ⁻ +1 to V ⁻ -1	NPN		◎	◎			○							8		
μPC454			○																	14		
μPC815		○			±3 to ±20	V ⁻ +1.5 to V ⁻ -2.5	NPN		◎	○			◎							○	8	
μPC816		○																		○	◎	8
μPC802	μPC4250	○			±1 to ±16	V ⁻ +0.2 to V ⁻ -0.6	PNP		○	○				◎						○	○	8
μPC801	μPC4081	○																		○	○	8
μPC803	μPC4082		○		±5 to ±16	V ⁻ +2.3 to V ⁺	J-FET			◎	○	○								○	○	8
μPC804	μPC4084			○																○	14	
μPC811		○			±5 to ±16	V ⁻ +3 to V ⁻ -1	J-FET			○	◎	○	○							○	○	8
μPC812			○																	○	○	8
μPC813		○			±5 to ±16	V ⁻ +3 to V ⁻ -1	J-FET			○	◎	◎	○	○						○	○	8
μPC814			○																	○	○	8
μPC821	μPC4071	○			±5 to ±16	V ⁻ +2 to V ⁺	J-FET													○	○	8
μPC822	μPC4072		○																	○	○	8*4
μPC824	μPC4074			○			14															
μPC831	μPC4061	○			±2 to ±16	V ⁻ +2 to V ⁺	J-FET													○	○	8
μPC832	μPC4062		○																	○	○	8
μPC834	μPC4064			○			14															
μPC258	μPC4558		○		±4 to ±16	V ⁻ +1 to V ⁻ -1	PNP		○			○	○							○	○	8
μPC458	μPC4741			○																○	○	14
μPC259	μPC4560		○		±4 to ±16	V ⁻ +1 to V ⁻ -1	PNP		○			○	○							○	○	8
	μPC4556		○																	○	◎	8
	μPC4557		○		±4 to ±16	V ⁻ +1 to V ⁻ -1	PNP		○			○	○							○		8
	μPC4559		○																	○	○	8
	μPC4570		○		±4 to ±16	V ⁻ +1 to V ⁻ -1	PNP		○			○	◎	◎						○	○	8*4
	μPC4574			○																○	○	14
	μPC4572		○		±2 to ±7	V ⁻ +1 to V ⁻ -1	PNP		○			○	◎	◎						○	○	8*4
μPC1251	μPC358		○																	○	○	8*4
μPC451	μPC324			○	+3 to ±30	GND to V ⁻ -1.5	PNP	○		○										○	○	14
μPC452	μPC3403			○																+3 to ±32	GND to V ⁻ -1.5	PNP
μPC842			○		±3 to ±32	GND to V ⁻ -1.8	PNP	○				○	○							○	○	8
μPC844				○																○	○	14

○ : Recommended for designing ◎ : High performance ◎ : Very high performance

*1 : Single type has a offset adjust pin.

*2 : For product indicated by +/- voltage, single supply voltage operation is possible if the input/output voltage range is observed.

*3 : C, G2 or HA shows Package Type, as follows.

C : Plastic DIP (300 mil)

G2 : Plastic SOP (225 mil)

HA : 9-pin plastic slim SIP

*4 : HA has 9 pins.

Comparator

■ Comparator

Part number		Function			Recommended power supply voltage (V)	Common mode input voltage range TYP. (V) T _A = +25 °C	Input stage transistor	GND Input on single power	High speed	Low power	Output circuit type		Packages*1			Number of pins
Communication/industry use	General use	Single	Dual	Quad							Open-collector	Emitter-follower	C	G2	HA	
μ PC271	μ PC311	○			+5 to +32	V ⁻ +0.3 to V ⁻ -1.2	PNP		○		○	○	○	○		8
μ PC272	μ PC319		○		+5 to +32	V ⁻ +2 to V ⁻ -2	NPN		○		○		○	○		14
μ PC277	μ PC393		○		+2 to +32	GND to V ⁻ -1.5	PNP	○		○		○	○	○		8*2
μ PC177	μ PC339			○												○

*1: C, G2 or HA shows Package Type, as follows.

C : Plastic DIP (300 mil)

G2 : Plastic SOP (225 mil)

HA : 9-pin plastic slim SIP

*2: HA has 9 pins.

Fixed Output Voltage, 3-Terminal Regulator

■ Fixed Output Voltage, 3-Terminal Regulator

Type	Part number	Output current (A)	Output voltage (V)													Absolute maximum ratings		Package	Remarks		
			3	3.3	4	5	6	7	8	9	9.3	10	12	15	18	24	Input voltage (V)			Total power dissipation (W)*1	
Positive voltage output	μ PC78L00	0.1				○	○	○	○								30	0.7/2*3	• TO-92 • SOT-89		
											○	○	○			35					
	μ PC78N00	0.3				○			○			○	○	○	○		35	12.5	• TO-126		
															○	40					
	μ PC78M00A	0.5				○	○	○	○	○		○	○	○	○		35	15	• MP-45*2	Improved version of μ PC78M00	
															○	40					
	μ PC7800A	1.0				○			○		○	○	○	○			35	15	• MP-45*2	Improved version of μ PC7800	
															○	40					
	μ PC29L00	0.1	○	○	○	○												16	0.7/2*3	• TO-92 • SOT-89	Low dropout voltage type
	μ PC29M00	0.5	○	○		○	○	○	○	○		○	○				20				
μ PC2900	1.0	○	○		○	○	○	○	○		○	○				20	1.0/2.0*4 15	• MP-3 • MP-3Z*5 • MP-45*2	Low dropout voltage type		
μ PC24A00	2.0				○							○	○				36	20	• MP-45*2	Low dropout voltage type	
μ PC24M00A	0.5				○	○	○	○	○		○	○	○	○		36					
μ PC2400A	1.0				○	○	○	○	○		○	○	○	○		36	15	• MP-45*2	Low dropout voltage type		
Negative voltage output	μ PC79L00	0.1				○		○								-30	0.7	• TO-92			
												○	○			-35					
	μ PC79N00	0.3				○		○				○	○	○			-35	12.5	• TO-126		
															○	-40					
μ PC79M00	0.5				○		○				○	○	○			-35	15	• MP-45*2			
														○	-40						
μ PC7900A	1.0				○		○				○	○	○			-35	15	• MP-45*2	Improved version of μ PC7900		
														○	-40						

*1 : Limited by internal circuit

*2 : TO-220 Plastic insulated package

*3 : With 16 cm² × 0.7 mm ceramic substrate*4 : With 7.5 cm² × 0.7 mm ceramic substrate

*5 : Surface mount package of MP-3

Variable Output Voltage Regulator

■ Variable Output Voltage Regulator

Type	Part number	Output current (A)	Output voltage range (V)	Absolute maximum ratings		Package	Remarks
				Input voltage (V)	Total power dissipation (W)		
Positive voltage output	μ PC141/305*3	0.05	4.5 to 30	40	0.35, 0.5/0.35, 0.44	<ul style="list-style-type: none"> • 8-pin DIP (plastic/ceramic) • 8-pin SOP 	
	μ PC317	1.5	1.3 to 30	40	15*1	<ul style="list-style-type: none"> • MP-45*2 	3-pin regulator
	μ PC1093	0.15	2.5 to 36	37	0.48, 0.7, 2*4, 0.2	<ul style="list-style-type: none"> • 8-pin SOP • TO-92 • SOT-89 • 5-pin mini mold 	Shunt regulator
	μ PC1943	0.05	1.26 to 24	25	1.6*4	<ul style="list-style-type: none"> • SOT-89 	Shunt regulator for Low Voltage
	μ PC1944	0.05	1.26 to 24	25	0.385, 0.56, 1.6	<ul style="list-style-type: none"> • 8-pin SOP • TO-92 • SOT-89 	Shunt regulator for Low Voltage
Negative voltage output	μ PC337	1.5	-1.3 to -30	-40	15*1	<ul style="list-style-type: none"> • MP-45*2 	3-pin regulator

*1 : Limited by internal circuit

*2 : TO-220 Plastic insulated package

*3 : μ PC141 is for communication/industry use.

*4 : When mounted on 16 cm² (0.7 mm thick) ceramic board

Regulator with System Reset

■ Regulator with System Reset

Type	Part number	Output current (A)	Output voltage (V)	Reset start voltage (V)	Reset output logic		Absolute maximum ratings		Package	Remarks
					Active low	Active high	Input voltage (V)	Total power dissipation (W)		
Positive voltage output	μ PC2251	0.1	3	2.85	○		12	1.2*	• TO-126 (4-pin)	Low dropout type
	μ PC2252	0.1	3	2.85		○	12	1.2*	• TO-126 (4-pin)	Low dropout type
	μ PC2253	0.1	5	2.85	○		12	1.2*	• TO-126 (4-pin)	Low dropout type
	μ PC2254	0.1	5	2.85		○	12	1.2*	• TO-126 (4-pin)	Low dropout type
	μ PC2255	0.1	5	4.75	○		12	1.2*	• TO-126 (4-pin)	Low dropout type
	μ PC2256	0.1	5	4.75		○	12	1.2*	• TO-126 (4-pin)	Low dropout type
	μ PC2260	0.5	5	4.85	○		35	20*	• TO-220 (5-pin)	Low dropout type
Supervisory for Micro-processor	μ PC2270A	-	-	4.3	○	○	8	0.35	• 8-pin DIP	Manual Reset Input
								0.44	• 8-pin SOP	
								0.35	• 9-pin Slim SIP	
	μ PC1074A	0.01	2 ~ 5.18	Adjustable	○		40	0.5	• 16-pin SOP	Watch-dog Timer

*: Limited by internal circuit

Regulator with ON/OFF Function

■ Regulator with ON/OFF Function

Part number	Output current (A)	Output voltage (V)	ON/OFF voltage (V)		Absolute maximum ratings		Package
			Output ON	Output OFF	Input voltage (V)	Total power dissipation (W)	
μPC29S78	0.1	7.8	2.0	0.8	20	1.2	• TO-126 (4-pin)
μPC29S10	0.1	10	2.0	0.8	20	1.2, 0.48	• TO-126 (4-pin) • 8-pin SOP

High Precision Reference Voltage**■ High Precision Reference Voltage**

Part number	Input voltage range (V)	Output voltage (V)	Output current (mA)	Total power dissipation (mW)	Output voltage vs. temperature (ppm/°C)	Package
μPC1060	4.5 to 40	2.5 ±0.025	10	350, 500	40	• 8-pin DIP

Switching Regulator Control Circuit

■ Switching Regulator Control Circuit

Part number	Input voltage range (V)	Absolute maximum ratings		Package	Output circuit operation mode	Applications
		Output current (mA)	Total power dissipation (W)			
μPC494	7 to 40	250	1, 0.78*2, 0.65*2	<ul style="list-style-type: none"> • 16-pin DIP • 16-pin SOP*1 	Push-pull/single selectable	General purpose
μPC1094	11 to 24	1200 (peak)	0.57, 0.55	<ul style="list-style-type: none"> • 14-pin DIP • 14-pin SOP 	Totem pole circuit configuration Single mode	Can operate up to 500 kHz General purpose
μPC1099	11.5 to 24	1200 (peak)	1, 0.694	<ul style="list-style-type: none"> • 16-pin DIP • 16-pin SOP 	Totem pole circuit configuration Single mode	Can operate up to 500 kHz General purpose
μPC1905	12 to 30	1200 (peak)	1, 0.694	<ul style="list-style-type: none"> • 16-pin DIP • 16-pin SOP 	Totem pole circuit configuration Single mode	Can operate up to 500 kHz General purpose
μPC1906	12 to 30	1200 (peak)	1, 0.694	<ul style="list-style-type: none"> • 16-pin DIP • 16-pin SOP 	Totem pole circuit configuration Single mode	Can operate up to 500 kHz General purpose
μPC1900	12 to 30	1200 (peak)	1.225, 0.775	<ul style="list-style-type: none"> • 24-pin DIP • 24-pin SOP 	Totem pole circuit configuration 2 outputs	Can operate up to 500 kHz General purpose
μPC1100	3.6 to 40	25	1, 0.694	<ul style="list-style-type: none"> • 16-pin DIP • 16-pin SOP 	2 outputs (synchronous control possible) If one output is shorted, both outputs will be turned OFF.	DC/DC converter
μPC1150	3.6 to 40	25	1, 0.694	<ul style="list-style-type: none"> • 16-pin DIP • 16-pin SOP 	2 outputs (synchronous control possible) If one output is shorted, only the output will be turned OFF.	DC/DC converter
μPC1933★	2.5 to 20	20	0.4	<ul style="list-style-type: none"> • 8-pin SOP 	Open drain 1 output	DC/DC converter
μPC1934★	2.5 to 20	20	0.4	<ul style="list-style-type: none"> • 16-pin SSOP • 16-pin T-SSOP 	Open drain 2 outputs	DC/DC converter
μPC1935	2.5 to 20	20	0.4	<ul style="list-style-type: none"> • 16-pin T-SSOP 	Open drain 3 outputs	DC/DC converter

*1 : μPC494G is 375 mil. μPC494GS is 300 mil.

*2 : When mounted on 5 × 5 cm² (1.6 mm thick) glass epoxy board.

★ : Under development

Functional Block

■ Functional Block

Function	Part number	Features	Package
Analog Multiplexer	μPD5205	Single-pole 8 position mode/double-pole 4 position mode Supply Voltage: 44 V, ON Resistance: 270 Ω TYP.	<ul style="list-style-type: none"> • 24-pin shrink DIP • 24-pin SOP
Precision Timer	μPC1555	CR Timer, Operating Temperature: -20 ~ +80°C Supply Voltage: 4.5 ~ 16 V, Free Running Frequency: 0.1 ~ 100 kHz	<ul style="list-style-type: none"> • 8-pin DIP • 8-pin SOP
	μPD5555	CMOS CR Timer, CMOS Type of μPC1555 Supply Voltage: 3 ~ 16 V, Free Running Frequency: 0.1 ~ 500 kHz	<ul style="list-style-type: none"> • 8-pin DIP • 8-pin SOP
	μPD5556	CMOS CR Timer Dual Type of μPD5555	<ul style="list-style-type: none"> • 14-pin DIP • 14-pin SOP