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											D ED	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		○			±3 to ±20	V^-+1.5 to V^+–2.5	NPN		◎	○	○	◎	◎		○	○			8
μPC802	**μPC4250**	○			±1 to ±16	V^-+0.2 to V^+–0.6	PNP		○	○				◎		○	○		8
μPC801	**μPC4081**	○			±5 to ±16	V^-+2.3 to V^+	J–FET			◎	○	○				○	○		8
μPC803	**μPC4082**		○													○	○		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		○		±4 to ±16	V^-+1 to V^+–1	PNP		○		○	◎	○			○	○		8
	μPC4557		○		±4 to ±16	V^-+1 to V^+–1	PNP		○			○	○			○			8
	μPC4559		○		±4 to ±16	V^-+1 to V^+–1	PNP		○			○	○			○			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**		○		+3 to ±30	GND to V^+–1.5	PNP	○		○				○	○	○	○	○	8*4
μPC451	**μPC324**			○											○	○	○		14
μPC452	**μPC3403**			○	+3 to ±32	GND to V^+–1.5	PNP	○		○						○	○		14
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, D, ED, G2 or HA shows Package Type, as follows.
- C : Plastic DIP (300 mil)
- D, ED : Ceramic DIP (300 mil)
- G2 : Plastic SOP (225 mil)
- HA : 9-pin plastic slim SIP

*4 : HA has 9 pins.

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	D ED	C	G2	HA	
μPC271	**μPC311**	○			+5 to +32	V^-+0.3 to V^+–1.2	PNP		○		○	○	○	○	○		8
μPC272	**μPC319**		○		+5 to +32	V^-+2 to V^+–2	NPN		○		○		○	○	○		14
μPC277	**μPC393**		○		+2 to +32	GND to V^+–1.5	PNP	○		○	○		○	○	○	○	8*2
μPC177	**μPC339**			○									○	○	○		14

*1 : C, D, ED, G2 or HA shows Package Type, as follows.
C : Plastic DIP (300 mil)
C : Plastic DIP (300 mil)
D, ED : Ceramic 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

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	**μPC78L00**	0.1				○	○	○	○								30	0.7/2*3	• TO-92 • SOT-89	
												○	○	○			35			
	μPC78N00	0.3				○			○			○	○	○	○		35	12.5	• TO-126	
																○	40			
	μPC78M00A	0.5				○	○	○	○	○		○	○	○	○		35	15	• MP-45*2	Improved version of μPC78M00
																○	40			
	μPC7800A	1.0				○			○		○		○	○	○		35	15	• MP-45*2	Improved version of μPC7800
																○	40			
	μPC29L00	0.1	○	○	○	○											16	0.7/2*3	• TO-92 • SOT-89	Low dropout voltage type
	μPC29M00	0.5	○	○		○			○	○		○	○				20	1.0/2.0*4 15	• MP-3 • MP-3Z*5 • MP-45*2	Low dropout voltage type
	μPC2900	1.0	○	○		○			○	○		○	○				20	1.0/2.0*4 15	• MP-3 • MP-3Z*5 • MP-45*2	Low dropout voltage type
	μPC24A00	2.0				○							○	○			36	20	• MP-45*2	Low dropout voltage type
	μPC24M00A	0.5				○	○	○	○	○		○	○	○	○		36	15	• MP-45*2	Low dropout voltage type
	μPC2400A	1.0				○	○	○	○	○		○	○	○	○		36	15	• MP-45*2	Low dropout voltage type
Negative voltage output	**μPC79L00**	0.1				○			○								–30	0.7	• TO-92	
													○	○			–35			
	μPC79N00	0.3				○			○				○	○	○		–35	12.5	• TO-126	
																○	–40			
	μPC79M00	0.5				○			○				○	○	○		–35	15	•MP-45*2	
																○	–40			
	μPC7900A	1.0				○			○				○	○	○		–35	15	• MP-45*2	Improved version of μPC7900
																○	–40			

*1 : Limited by internal circuit
*2 : TO-220 Plastic insulated package
*3 : With 16 $cm^2 \times 0.7$ mm ceramic substrate
*4 : With 7.5 $cm^2 \times 0.7$ mm ceramic substrate
*5 : Surface mount package of MP-3

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	**μPC141/305***3	0.05	4.5 to 30	40	0.35, 0.5/0.35, 0.44	• 8-pin DIP (plastic/ceramic) • 8-pin SOP	
	μPC317	1.5	1.3 to 30	40	15*1	• MP-45*2	3-pin regulator
	μPC1093	0.15	2.5 to 36	37	0.48, 0.7, 2*4	• 8-pin SOP • TO-92 • SOT-89	Shunt regulator
	μPC1943	0.05	1.26 to 24	25	1.6*4	• SOT-89	Shunt regulator for Low Voltage
	μPC1944	0.05	1.26 to 24	25	0.385, 0.56	• 8-pin SOP • TO-92	Shunt regulator for Low Voltage
Negative voltage output	**μPC337**	1.5	–1.3 to –30	–40	20*1	• TO-220AB	3-pin regulator

*1 : Limited by internal circuit
*2 : Plastic insulated package
*3 : μPC141 is for communication/industry use.
*4 : When mounted on 16 cm^2 (0.7 mm thick) ceramic board

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	**μPC2251**	0.1	3	2.85	◯		12	1.2*	• TO-126 (4-pin)	Low dropout type
	μPC2252	0.1	3	2.85		◯	12	1.2*	• TO-126 (4-pin)	Low dropout type
	μPC2253	0.1	5	2.85	◯		12	1.2*	• TO-126 (4-pin)	Low dropout type
	μPC2254	0.1	5	2.85		◯	12	1.2*	• TO-126 (4-pin)	Low dropout type
	μPC2255	0.1	5	4.75	◯		12	1.2*	• TO-126 (4-pin)	Low dropout type
	μPC2256	0.1	5	4.75		◯	12	1.2*	• TO-126 (4-pin)	Low dropout type
	μPC2260	0.5	5	4.85	◯		35	20*	• TO-220 (5-pin)	Low dropout type
Supervisory for Microprocessor	**μPC2270A**	–	–	4.3	◯	◯	8	0.35	• 8-pin DIP	Manual Reset Input
								0.44	• 8-pin SOP	
								0.35	• 9-pin Slim SIP	
	μPC1074A	0.01	2 ~ 5.18	Adjustable	◯		40	0.5	•16-pin SOP	Watch-dog Timer

*: Limited by internal circuit

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 (plastic, ceramic)

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	• 16-pin DIP (plastic) • 16-pin SOP*1	Push-pull/single selectable	General purpose
μPC1094	11 to 24	1200 (peak)	0.57, 0.55	• 14-pin DIP (plastic) • 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	• 16-pin DIP (plastic) • 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	• 16-pin DIP (plastic) • 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	• 16-pin DIP (plastic) • 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	• 24-pin DIP (plastic) • 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	• 16-pin DIP (plastic) • 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	• 16-pin DIP (plastic) • 16-pin SOP	2 outputs (synchronous control possible) If one output is shorted, only the output will be turned OFF.	DC/DC converter

*1 : μPC494G is 375 mil. μPC494GS is 300 mil.
*2 : When mounted on 5 × 5 cm^2 (1.6 mm thick) glass epoxy board.

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.	• 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	• 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	• 8-pin DIP • 8-pin SOP
	μPD5556	CMOS CR Timer Dual Type of μPD5555	• 8-pin DIP • 8-pin SOP

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