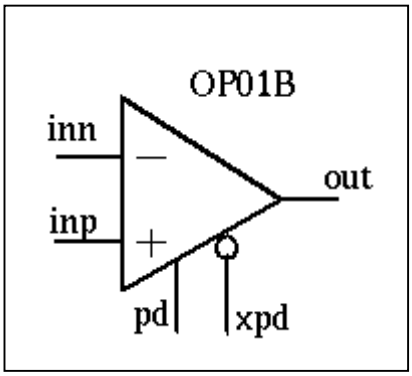
APPENDIX F

OP01B

Key Features

- Large Input and Output Range
- Supply Voltage 4.5 - 5.5 V
- Small Area 0.026 mm^2;
- Size x=138µm y=190µm
- Suitable For SC - Applications
- Power-Down-Mode Ivdd < 1nA

Symbol



Description

The OP01B cell is an internally compensated operational amplifier with a PMOS input stage. The amplifier is designed for universal applications, such as switched capacitor or internal antialiasing filters. The operational amplifier has a power-down mode to permit very low standby currents. This mode is controlled by the complementary signals "pd" and "xpd".

Pin	Description	Cap
Inn	inverting input	.8p
Inp	noninverting input	.8p
xpd	power down not	.05p
pd	power down	.07p
out	analogue output	X
vdda	positive analogue power supply	X
vssa	negative analogue power supply	X

OP01B	0.6um	CUE			
Parameter	**Symbol**	**Min**	**Typ**	**Max**	**Unit**
Power Supply Range	Vdd	4.5	5.0	5.5	V
Temperature Range	Temp	-40	25	125	deg
AC Parameters					
Open Loop Gain	A0	87	93	96	dB
Unity Gain Bandwidth (10p F / 10M Ohms) Phase Margin	BW Øm	6.0 70	10.2 78	21.4 87	MHz deg
Unity Gain Bandwidth (35p F / 10M Ohms) Phase Margin	BW Øm	5.2 47	9.1 56	15.4 66	MHz deg
Common Mode Rejection Ratio	CMRR	75	80	84	dB
Power Supply Rejection Ratio Vdd	PSRRvdd	68	92	93	dB
Power Supply Rejection Ratio Vss	PSRRvss	74	79	83	dB
Output Resistance	Rout (CL)	300	610	1200	mOhms
DC Parameters					
Input Offset Voltage	Vos	-10		10	mV
Power Supply Current	Idd	0.2	0.43	0.8	mA
Power Consumption	PVdd	0.9	2.1	4.4	mW
Output Source Current	Isource	1.2	2.9	6.1	mA
Output Sink Current	Isink	9	19.8	33	mA
Common Mode Input Range-low	CMIR-L	0.03	0.13	0.6	V
Common Mode Input Range-high	CMIR-H	3.7	4.36	5.2	V
Output Range-low (Rl = 10M)	Vout-L	0.00	0.00	0.00	V
Output Range-high (Rl = 10M)	Vout-H	4.50	5.00	5.50	V
Transient Parameters					
Slew Rate - Rise	SRP	3.9	7.1	13.4	V/µS
Slew Rate - Fall	SRN	4.1	7.8	14.7	V/µS
Settling Time - Rise	TSP	0.15	0.26	0.48	µS
Settling Time - Fall	TSN	0.13	0.26	0.4	µS
Startup Time	Tstart	0.15	19.3	20	ms
Total Harmonic Distortion	THD				dB
Noise Parameters					
Equivalent Input Noise @10Hz	en	0.11	0.13	0.18	µV/Root Hz
Equivalent Input Noise @100KHz	en	8	12	18	nV/Root Hz