

Optical pickup OEIC

BA1800 Series

The BA1800 Series are optical pickup ICs for use with CDs, CD-ROMs, and MDs. Inside the transparent package are tracking, focus, and RF signal photodiodes, and an I-V amplifier for converting optical current to voltage. The pattern of the photodiodes will be customized to meet the optical systems.

●Applications

Optical pickup for CDs, CD-ROMs, and MDs

●Features

- 1) Transparent 10-pin package.
- 2) Low noise

●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Power supply voltage	V _{CC}	6	V
Power dissipation	P _d	100*	mW
Operating temperature	T _{opr}	-20~+70	°C
Storage temperature	T _{stg}	-30~+85	°C

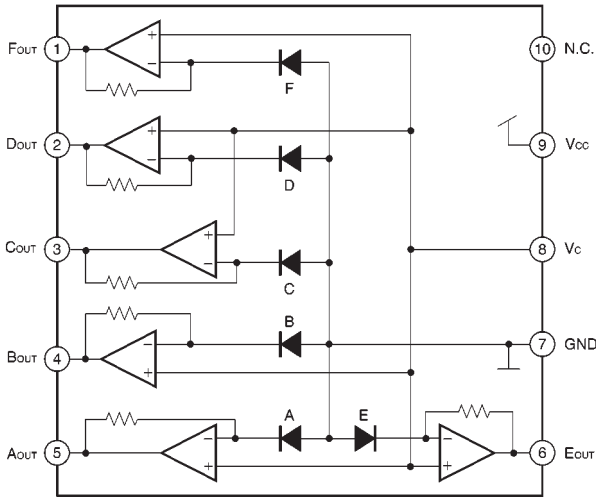
* Reduced by 1.7 mW for each increase in Ta of 1°C over 25°C.

●Recommended operating conditions (Ta = 25°C)

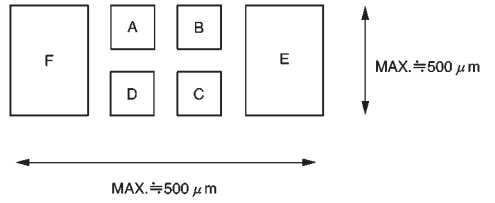
Parameter	Symbol	Min.	Typ.	Max.	Unit
Power supply voltage	V _{CC}	3.0	—	5.5	V

● Block diagram

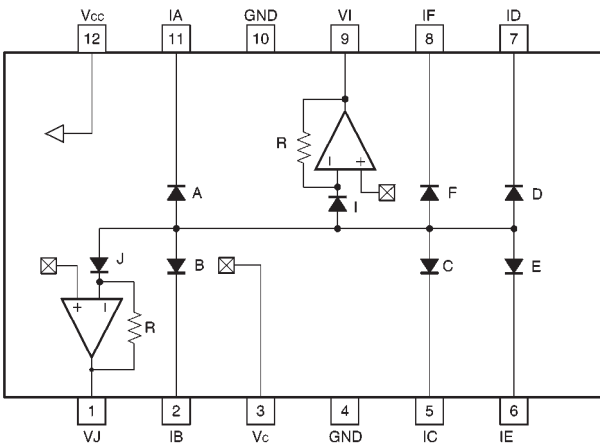
Block diagram example 1



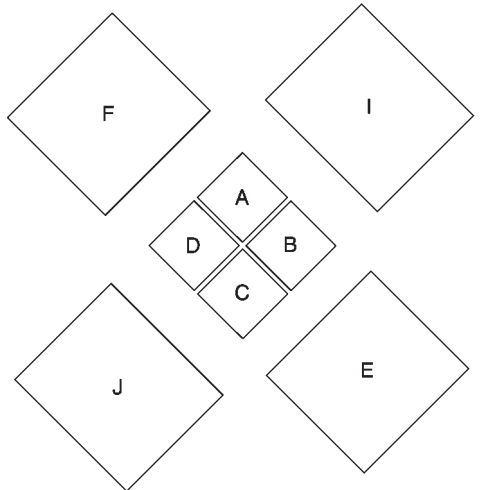
Photodiode pattern example 1



Block diagram example 2



Photodiode pattern example 2



●Electrical characteristics (unless otherwise noted, $T_a = 25^\circ\text{C}$, $V_{CC} = 5\text{V}$, $V_C = 2.5\text{V}$, $\lambda = 780\text{ nm}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Current consumption with no input	I_{CC}	—	4.4	—	mA	
Output voltage 1	V_{O1}	290	360	450	mV	$P_i = 10\ \mu\text{W}$, A1, A~D
Output voltage 2	V_{O2}	720	900	1080	mV	$P_i = 10\ \mu\text{W}$, E, F
Output voltage offset	V_{OF}	-15	0	15	mV	A~F
Output voltage offset discrepancy 1	ΔV_{OF2}	-15	0	15	mV	(A+C) - (B+D)
Output voltage offset discrepancy 2	ΔV_{OF2}	-15	0	15	mV	E-F
Frequency characteristics 1	f_{C1}	—	10	—	MHz	$\pm 3\text{dB}$ A~D
Frequency characteristics 2	f_{C2}	—	1.0	—	MHz	$\pm 3\text{dB}$ E, F
Output noise voltage 1	V_{NO1}	—	0.18	—	mVrms	A~D
Output noise voltage 2	V_{NO2}	—	0.36	—	mVrms	E, F

●External dimensions (Units: mm)

