

GDR101 ASP

T-77-21

OUTLINE

GDR101 is a bipolar LSI for analog signal processing and for servo control of compact disc players, suitable for 3-beam system. CD player system can be constructed easily by combining with YM3805(SPC), YM7121C(SPC5), YM7402(CDVP).

FEATURES

- Single power supply(+5V) or dual power supply system($\pm 5V$) are selectable.
- CD player system can be made by using Digital Signal Processor such as YM7121C.
- Almost all the functions for analog system are incorporated.
 - RF amplifier
 - focus error amp
 - tracking error amp
 - slice level control (SLC) amplifier
 - VCO control amplifier
 - focus (FCS) switch
 - tracking switch(TSOF, TRFD, TRGL)
 - laser on/off switch
- Timing signals FRF, /FZC, HF, TWR are output.
- 48 pin QFP.

ELECTRICAL CHARACTERISTICS

Absolute maximum ratings

Parameter	Symbol	Conditions	Ratings	Unit
Maximum Power supply voltage	VCC/VEE		± 7	V
Power consumption	Pd max	Ta $\leq 75^\circ\text{C}$	430	mW
Operating temperature	Top		-25~+ 75	$^\circ\text{C}$
Storage temperature	Tstg		-40~+125	$^\circ\text{C}$

Recommended operating conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power supply voltage	VCCop	+4	+5	+6	V
	VEEop	-6	-5	-4	V
Operating temperature	Top	0	25	75	$^\circ\text{C}$

Operating characteristics (Condition: Ta=25 $^\circ\text{C}$, VCC= $\pm 5V$, VEE=-5V)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Consumption current	ICC		12	17	22	mA
	IEE	LDSW off	11	15.5	20	mA

< RF amp. section >

Offset voltage	V36-0	41,42 pins open	-300	-120	0	mV
Voltage gain	GV36	36~37 pins: 22K Ω 41,42 pins: Rg=10K Ω f=200KHz	25	28	31	dB
Maximum output amplitude	V36H V36L	RL=10K Ω RL=10K Ω	+4.0 -1.6	+4.2 -1.3	+4.3 -1.2	V
Frequency characteristics		1MHz/200KHz	-3.0	-0.5	+3.0	dB

< Focus error amp. section >

Offset voltage	V31-0	41,42 pins open	-150	0	+150	mV
Voltage gain	GV31	33 pin~GND=120K Ω 31~32 pins=120K Ω f=1KHz	31	34	37	dB
Voltage gain difference	dGV	41 pin input and 42 pin input	-1.0	0	+1.0	dB
Maximum output amplitude	V31H V31L	RL=10K Ω RL=10K Ω	+4.1 -4.6	+4.25 -4.25	+4.6 -4.1	V
Frequency characteristics	fmax		-3.0	-0.5	+3.0	dB

< Peak hold circuit section >

Offset voltage	V35-36	41,42 pins open	-100	-40	20	mV
Output voltage	V35-0	41,42 pins input current=5 μA	1.0	1.2	1.4	V

< Bottom hold circuit section >

Offset voltage	V34-35	41,42 pins open	-100	0	100	mV
Output voltage	V34-0	41,42 pins input current=5 μA	1.0	1.2	1.4	V

< FRF comparator section >

Comparator output	V27H	41,42 pins input current=3 μA	4.0	4.2	4.5	V
	V27L	41,42 pins input current=1 μA	0	0	0.5	V
Offset voltage	V35-1	35 pin voltage when V27=H	0.7			V
	V35-2	35 pin voltage when V27=L			0.1	V

< /FZC comparator section >

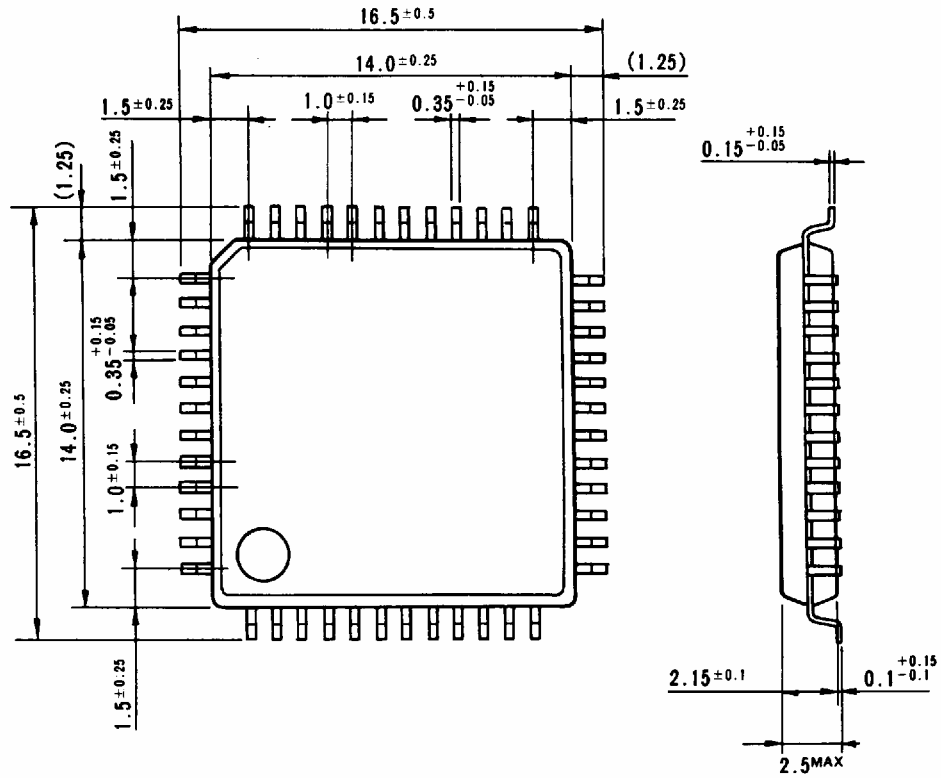
Comparator output	V18H V18L	41,42 pins open 42 pin input current =1 μA	4.0	4.2	4.5	V
Offset voltage	V31-1	31 pin voltage when V18=H	-0.35			V
	V31-2	31 pin voltage when V18=L			-0.65	V

< HF comparator >

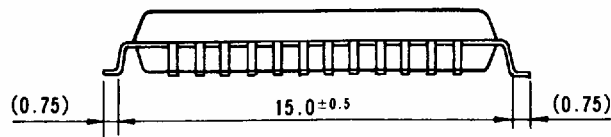
Comparator output	V17H V17L	41,42 pins open 35 pin=0.8V 34 pin=0V	4.0	4.2	4.5	V
Offset voltage	V35-1	35 pin voltage when V17=L, 34 pin=0V	0.7			V
	V35-2	35 pin voltage when V17=H, 34 pin=0V			0.3	V
Maximum operating frequency	fmax		100	500		KHz

NOTE: This LSI can be supplied only combination with YAMAHA signal processors such as YM7121C, YM3805 etc. Please contact YAMAHA before design start.

OUTLINE DIMENSIONS



DIMENSIONS IN MM



BLOCK DIAGRAM

