Panasonic

AN6915, AN6916, AN6916S

Large Sink Current Dual Comparators

■ Overview

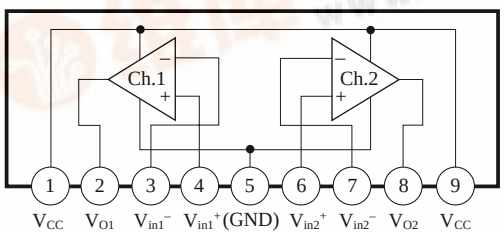
The AN6915, the AN6916 and the AN6916S are dual voltage comparators with large output sink current and wide range of operating supply voltage.

■ Features

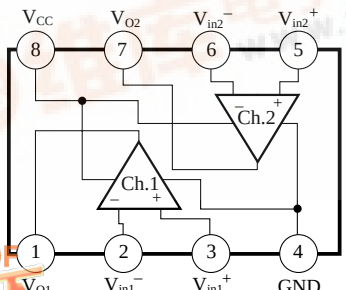
- Large sink current (70mA), direct drive for relays or lamps
- Wide range of supply voltage: V_{CC} (opr.)=2 to 36V
- Wide range common-mode input voltage :0 to V_{CC}–1.5V
- Open collector output

■ Block Diagram

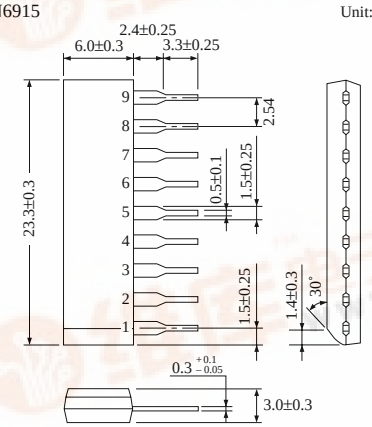
AN6915



AN6916,AN6916S

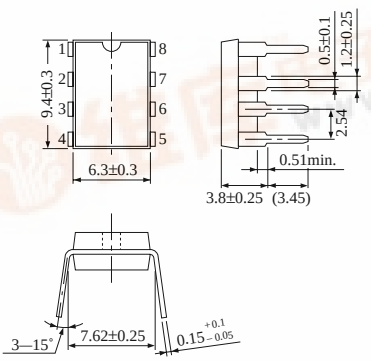


AN6915 Unit:mm



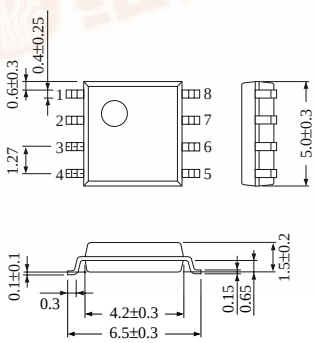
9-pin SIL Plastic Package (SIP009-P-0000C)

AN6916 Unit:mm



8-pin DIL Plastic Package (DIP008-P-0300B)

AN6916S Unit:mm



8-pin PANAFLAT Plastic Package (SOP008-P-0225A)

■ Pin Descriptions

〈AN6915〉

Pin No.	Pin name
1	V_{CC}
2	Ch.1 output
3	Ch.1 inverting input
4	Ch.1 non inverting input
5	GND
6	Ch.2 non inverting input
7	Ch.2 inverting input
8	Ch.2 output
9	V_{CC}

〈AN6916, AN6916S〉

Pin No.	Pin name
1	Ch.1 output
2	Ch.1 inverting input
3	Ch.1 non inverting input
4	GND
5	Ch.2 non inverting input
6	Ch.2 inverting input
7	Ch.2 output
8	V_{CC}

■ Absolute Maximum Ratings (Ta=25˚C)

Parameter		Symbol	Rating	Unit
Supply voltage		V_{CC}	36	V
Common-mode input voltage		V_{ICM} *1	– 0.3 to +36	V
Differential input voltage		V_{ID} *2	36	V
Output current		I_{OL} *3	150	mA
Power dissipation	AN6915, AN6916	P_D	500	mW
	AN6916S		360	
Operating ambient temperature		T_{opr}	–30 to +85	˚C
Storage temperature	AN6915, AN6916	T_{stg}	–55 to +150	˚C
	AN6916S		–55 to +125	

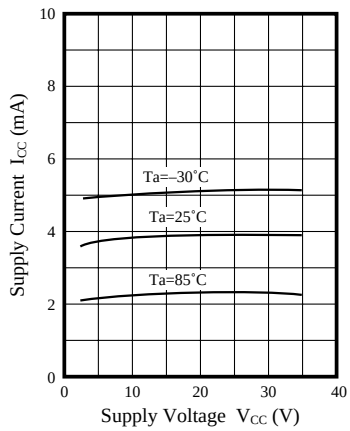
*1 The common mode input voltage is a voltage applied to the non-inverting input pin and inverting input pin simultaneously.
*2 Differential input is equivalent to the potential difference between the non-inverting input pin and inverting input pin.
*3 In case output level is “L”.

■ Electrical Characteristics (V_{CC}=5V, Ta=25˚C)

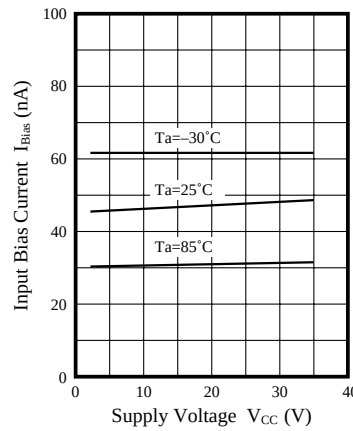
Parameter	Symbol	Condition	min	typ	max	Unit
Input offset voltage	$V_{I\,(offset)}$		—	1	5	mV
Input offset current	I_{IO}		—	1	50	nA
Input bias current	I_{Bias}		—	50	200	nA
Voltage gain	G_V	R_L=15kΩ	—	200	—	V/mV
Common-mode input voltage range	V_{CM}		0	—	V_{CC}–1.5	V
Supply current	I_{CC}	R_L=∞	—	3.8	5.3	mA
Response time (1)	t_{PLH}	R_L=5.1kΩ	—	2	—	µs
Response time (2)	t_{PHL}	R_L=5.1kΩ	—	1	—	µs
Low level output voltage	V_{OL}	V_{REF}= 0V, V_I=1V, I_{SINK}=70mA	—	0.14	0.4	V
Output leakage current	$I_{O\,(Leak)}$	V_{REF}=1V, V_I= 0V, V_O=5V	—	—	0.1	µA

■ Characteristics Curve

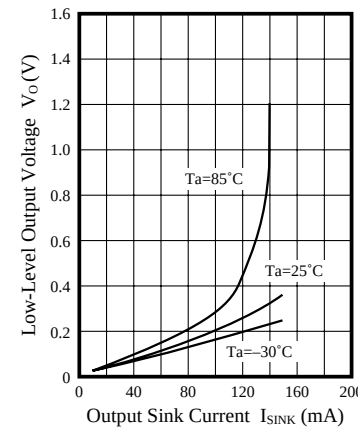
I_{CC}–V_{CC}



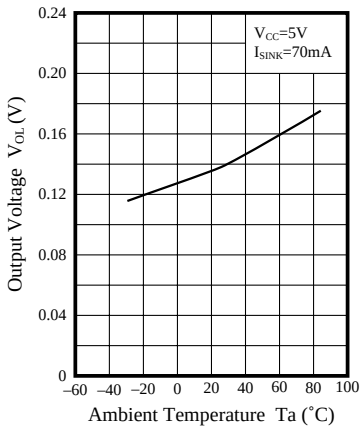
I_{Bias}–V_{CC}



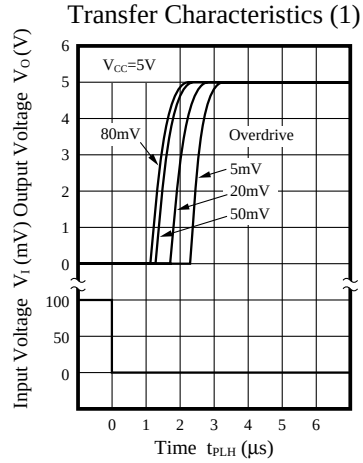
V_{OL}–I_{SINK}



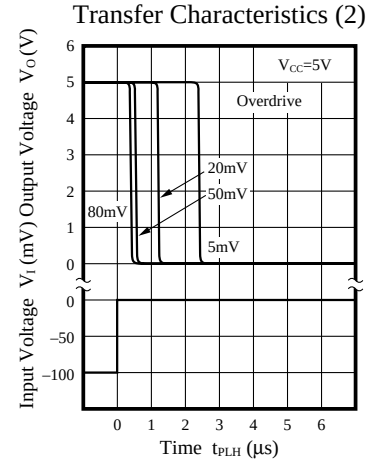
V_{OL}–Ta



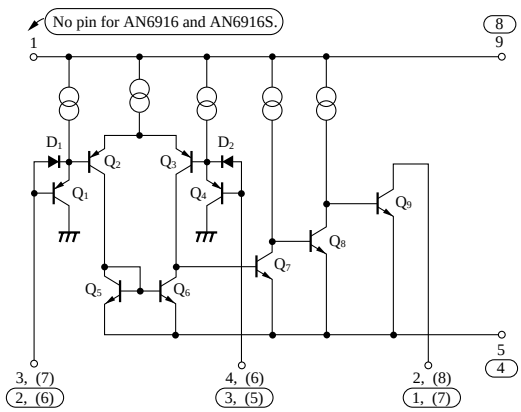
Transfer Characteristics (1)



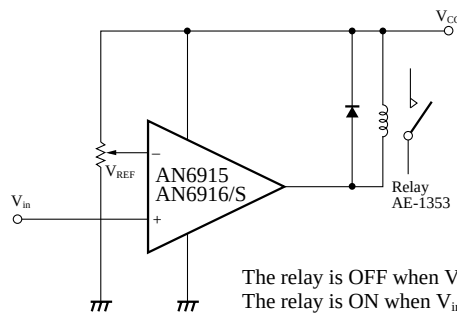
Transfer Characteristics (2)



■ Schematic Diagram (1/2)



■ Application Circuit



The relay is OFF when V_{in}>V_{REF}.
The relay is ON when V_{in}<V_{REF}.

Note 1) The No. in ( ) are pin No. of AN6916 and AN6916S.
Note 2) The pin No. in ( ) are for Ch.2.