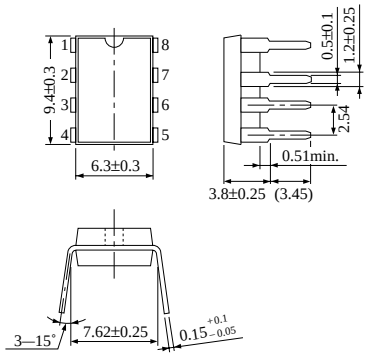
AN1393 (AN6914), AN1393S (AN6914S)

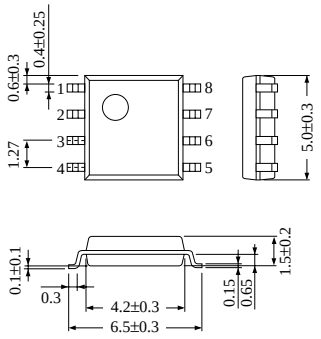
Dual Comparators

AN1393 (AN6914) Unit:mm



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

AN1393S (AN6914S) Unit:mm



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

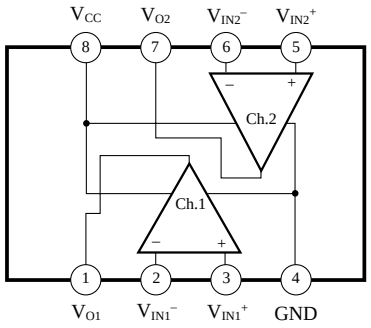
■ Overview

The AN1393 (AN6914) and the AN1393S (AN6914S) are dual (voltage) comparators with wide range of operating supply valtage.

■ Features

- Wide range of operating voltages
  Single supply:2 to 36V
  Dual supply:±1 to ±18V
- Low circuit current:0.6mA typ.
- Wide range of common-mode input voltages
  :0V to V_{CC}–1.5V (single supply)
- Open collector output

■ Block Diagram



■ Pin Descriptions

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
Voltage	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 applied voltage	V_1, V_7	24	V
Power dissipation	AN1393 (AN6914)	P_D	500	mW
	AN1393S(AN6914S)		360	
Operating ambient temperature		T_{opr}	– 30 to +85	˚C
Storage temperature	AN1393(AN6914)	T_{stg}	– 55 to +150	˚C
	AN1393S(AN6914S)		– 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.

■ Recommended Operating Range (Ta=25˚C)

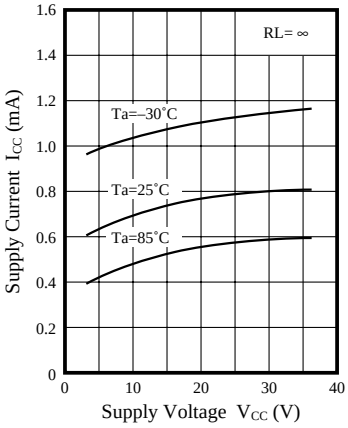
Parameter	Symbol	Range
Operating supply voltage range	V_{CC}	Single power supply 2V to 36V
		Double power supply ±1V to ±18V

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

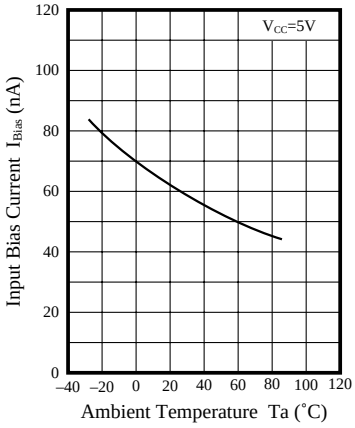
Parameter	Symbol	Condition	min	typ	max	Unit
Input offset voltage	$V_{I\,(offset)}$		—	1	5	mV
Input offset current	I_{IO}		—	—	50	nA
Input bias current	I_{Bias}		—	—	250	nA
Voltage gain	G_V	R_L=15kΩ	—	200	—	V/mV
Common-mode input voltage range	V_{CM}		0	—	V_{CC}–1.5	V
Supply current	I_{CC}	R_L= ∞	—	0.6	1.5	mA
Response time	t_r	R_L=5.1kΩ, V_{RL}=5V	—	1.3	—	µs
Output sink current	I_{SINK}	V_{REF}= 0V, V_{IN}=1V, V_O≦1.5V	10	—	—	mA
Low level output voltage	V_{OL}	V_{REF}= 0V, V_{IN}=1V, I_{SINK}=3mA	—	0.2	0.4	V
Output terminal leakage current	$I_{O\,(Leak)}$	V_{IN}= 0V, V_{REF}=1V, V_O=5V	—	0.1	—	nA

■ Characteristics Curve

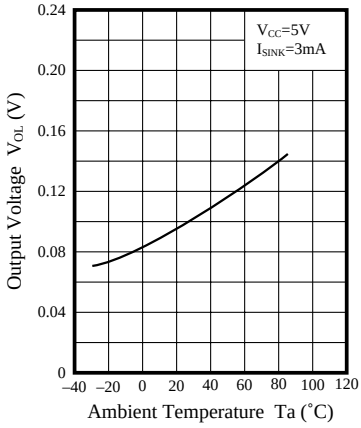
I_{CC}–V_{CC}



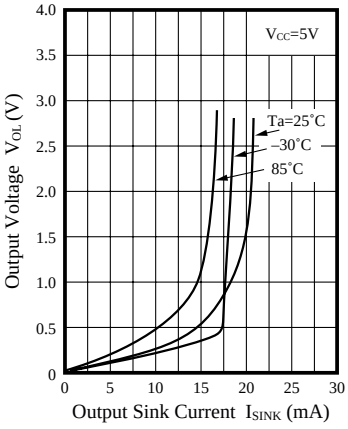
I_{Bias}–Ta



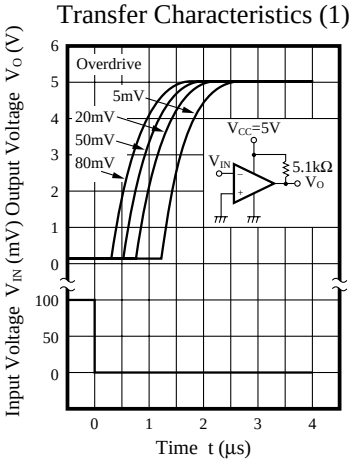
V_{OL}–Ta



V_{OL}–I_{SINK}



Transfer Characteristics (1)



Transfer Characteristics (2)