TOSHIBA Bipolar Linear Integrated Circuit Silicon Monolithic

# **TA75W393FU**

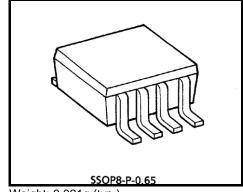
### **Dual Voltage Comparator**

This device consist of two independent voltage comparators that designed to operate from a single power supply over a wide range of voltage.

Normal operation from dual supplies is also to be guaranteed on voltage range from  $\pm$  1V to  $\pm$  18V.

 $\ensuremath{V_{\mathrm{CC}}}$  is necessary at least more 1.5V volts than the input common mode voltage.

The output can be connected to other open collector outputs to achieve Wired-OR relation ship.



Weight: 0.021g (typ.)

#### **Features**

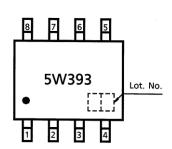
• Compatible to TA75393F.

• Single supply voltage range or dual supplies 2V to 36V or  $\pm 1V$  to  $\pm 18V$ 

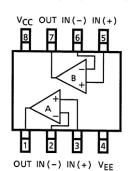
• Low supply current : 0.8 mA (typ.)• Low input offset voltage  $: \pm 2 \text{mV (typ.)}$ • Wide input common mode voltage range  $: 0 \text{V to V}_{\text{CC}} - 1.5 \text{V}$ • Output compatible with TTL, DTL, MOS and CMOS logic system.

• The output can be connected to achieve Wired-OR relation..

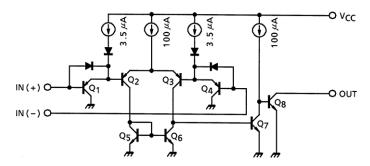
### Marking (Top View)



### **Pin Connection (Top View)**



### **Equivalent Circuit**



### Absolute Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit	
Supply voltage	VCC, VEE	±18 or 36	V	
Differential input voltage	DVIN	±36	٧	
Input voltage	VIN	-0.3 to V <sub>CC</sub>	٧	
Power dissipation	PD	250	mW	
Operating temperature	T <sub>opr</sub>	-40 to 85	°C	
Storage temperature	T <sub>stg</sub>	-55 to 125	°C	

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings and the operating ranges.

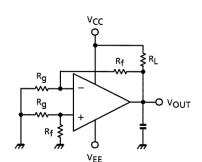
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

### Electrical Characteristics (Unless otherwise specified Vcc = 5V, VEE = GND, Ta = 25°C)

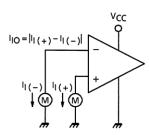
Characteristic	Symbol	Test Circuit	Test Condition	Min	Тур.	Max	Unit
Input offset voltage	Vio	1	_	_	2	5	mV
Input offset current	lio	2	_	_	5	50	nA
Input bias current	IJ	2	_	_	25	250	nA
Common mode input voltage	CMVIN	_	_	0	_	V <sub>CC</sub> -1.5	V
Supply current	Icc	3	No load	_	0.8	2	mA
Voltage gain	GV	_	R <sub>L</sub> = 15kΩ	_	200	_	V/mV
Sink current	Isink	4	IN (+) = 0V, IN (-) = 1V V <sub>OL</sub> = 1.5V	6	16	_	mA
Output Voltage ("L" Level)	V <sub>OL</sub>	5	IN (+) = 0V, IN (-) = 1V I <sub>sink</sub> = 3mA	_	0.2	0.4	V
Output Leak Current	ILEAK	_	IN (+) = 1V, IN (-) = 0V V <sub>O</sub> = 5V	_	0.1	_	nA
Response Time	trsp	6	$R_L = 5.1k\Omega$ , $C_L = 15pF$	_	1.3	_	μS

## **Test Circuit**

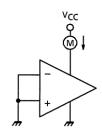
(1) Vio



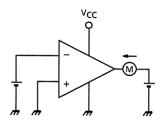
(2) II, IIO



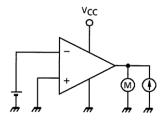
(3) ICC



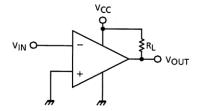
(4) Isink

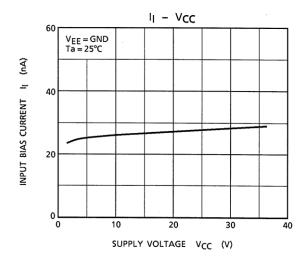


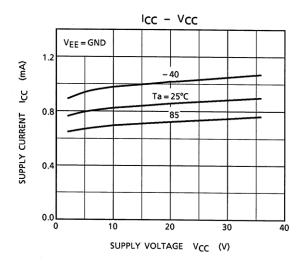
(5) VoL

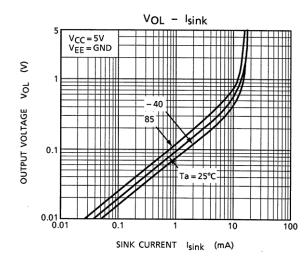


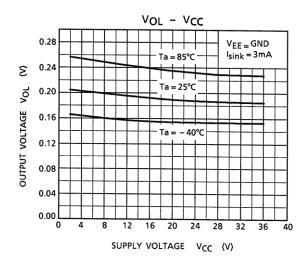
(6) trsp

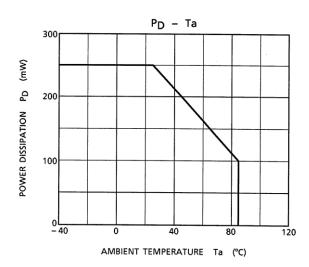








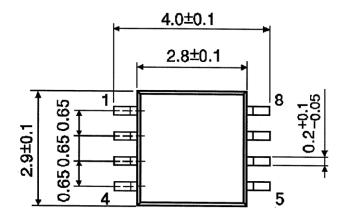


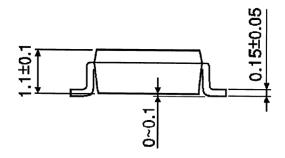




## **Package Dimensions**

SSOP8-P-0.65





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Weight: 0.021g (typ.)

2017-12-05

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