

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

**TA75393P, TA75393F****DUAL COMPARATOR**

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

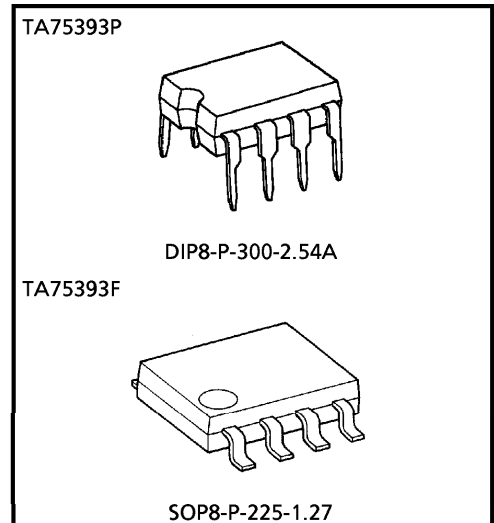
Normal Operation from dual supplies is also to be guaranteed on voltage range from 2 V to 36 V.

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

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

**FEATURES**

- Be possible to operate at the wide range single or two supply voltage.  
2~36 V or  $\pm 1\sim 18$  V
- Low supply current : 0.8 mA (Typ.)
- Low input offset voltage :  $\pm 2$  mV (Typ.)
- Wide common mode input voltage :  $0\sim V_{CC} - 1.5$  V
- Output is compatible with TTL, DTL, MOS and C-MOS.
- Output is open collector and wired-OR possible.



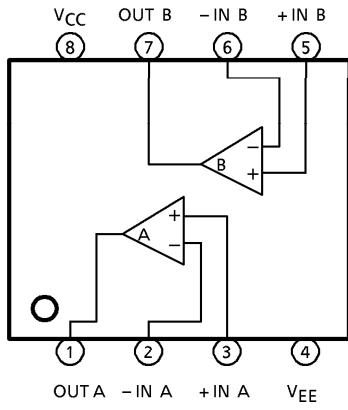
Weight

DIP8-P-300-2.54A : 0.5 g (Typ.)

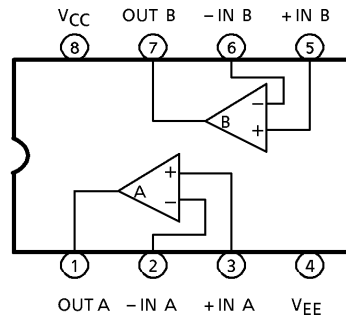
SOP8-P-225-1.27 : 0.1 g (Typ.)

**PIN CONNECTION (TOP VIEW)**

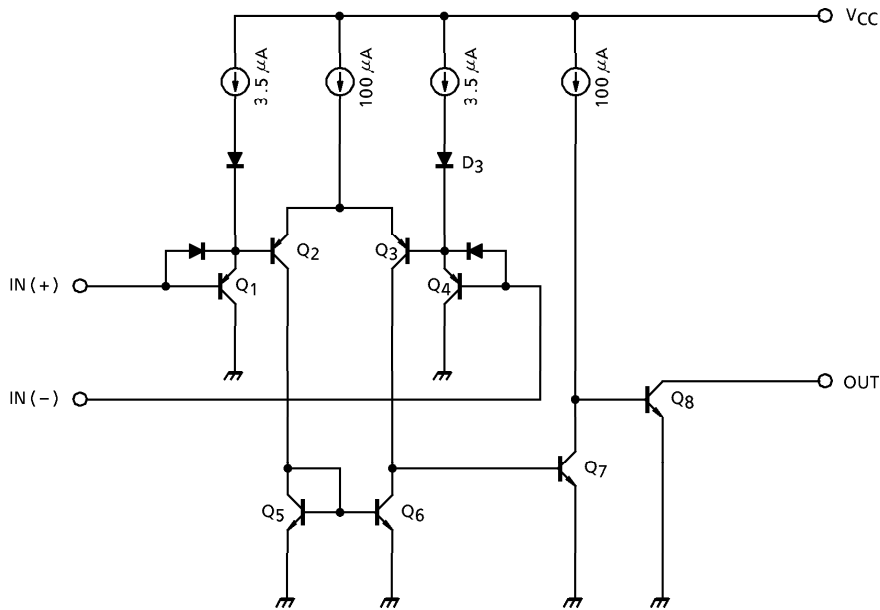
TA75393F



TA75393P



**EQUIVALENT CIRCUIT**



## MAXIMUM RATINGS (Ta = 25°C)

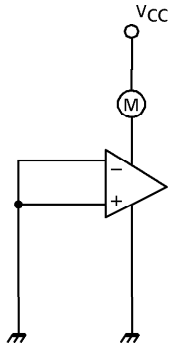
CHARACTERISTIC	SYMBOL	TA75393P	TA75393F	UNIT
Supply Voltage	V <sub>CC</sub>	± 18 OR 36	± 18 OR 36	V
Differential Input Voltage	DV <sub>IN</sub>	± 36	± 36	V
Common Mode Input Voltage	CMV <sub>IN</sub>	- 0.3~V <sub>CC</sub>	- 0.3~V <sub>CC</sub>	V
Power Dissipation	P <sub>D</sub>	500	240	mW
Operating Temperature	T <sub>opr</sub>	- 40~85	- 40~85	°C
Storage Temperature	T <sub>stg</sub>	- 55~125	- 55~125	°C

ELECTRICAL CHARACTERISTICS (V<sub>CC</sub> = 5 V, Ta = 25°C)

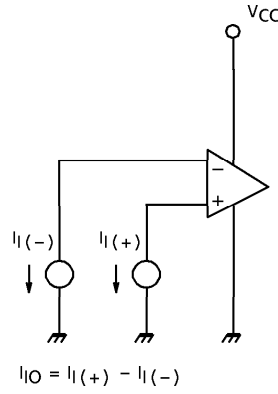
CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V <sub>IO</sub>	4	—	—	2	5	mV
Input Bias Current	I <sub>I</sub>	2	—	—	25	250	nA
Input Offset Current	I <sub>IO</sub>	2	—	—	5	50	nA
Common Mode Input Voltage	CMV <sub>IN</sub>	4	—	0	—	V <sub>CC</sub> - 1.5	V
Voltage Gain	G <sub>V</sub>	—	R <sub>L</sub> = 15 kΩ	—	200	—	V/mV
Supply Current	I <sub>CC</sub>	1	No load	—	0.8	2	mA
Sink Current	I <sub>SINK</sub>	5	IN (+) = 0 V, IN (-) = 1 V V <sub>OL</sub> = 1.5 V	6	16	—	mA
Output Voltage ("L" Level)	V <sub>OL</sub>	5	IN (+) = 0 V, IN (-) = 1 V I <sub>SINK</sub> = 3 mA	—	0.2	0.4	V
Output Leak Current	I <sub>LEAK</sub>	3	IN (+) = 1 V, IN (-) = 0 V V <sub>O</sub> = 5 V	—	0.1	—	nA
Response Time	t <sub>rsp</sub>	6	R <sub>L</sub> = 5.1 kΩ, C <sub>L</sub> = 15 pF	—	1.3	—	μs

TEST CIRCUIT

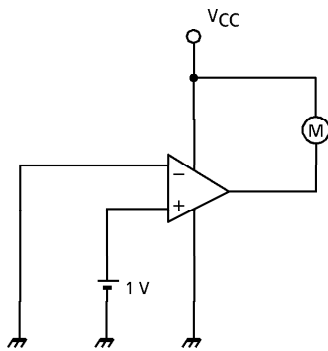
(1)  $I_{CC}$



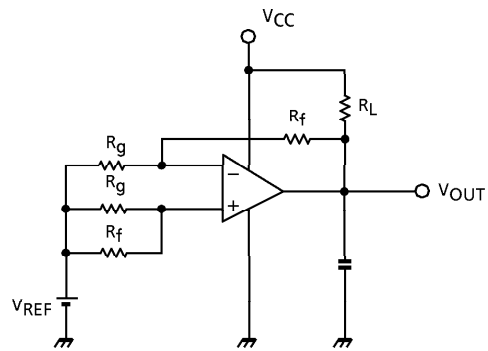
(2)  $I_I, I_{IO}$



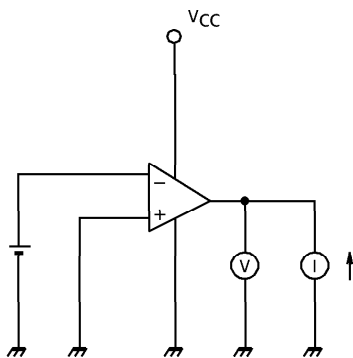
(3)  $I_{LEAK}$



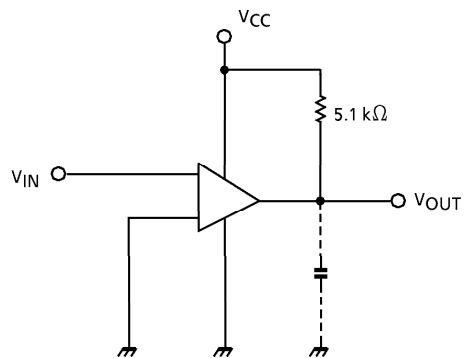
(4)  $V_{IO}, CMV_{IN}$



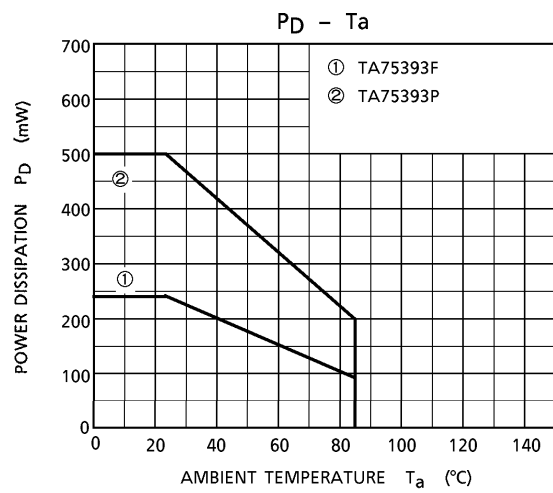
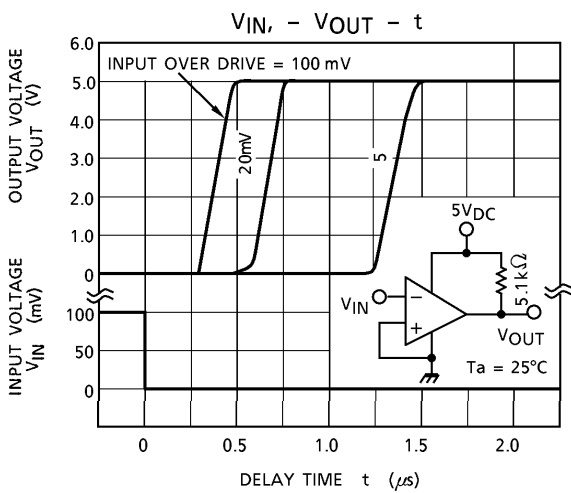
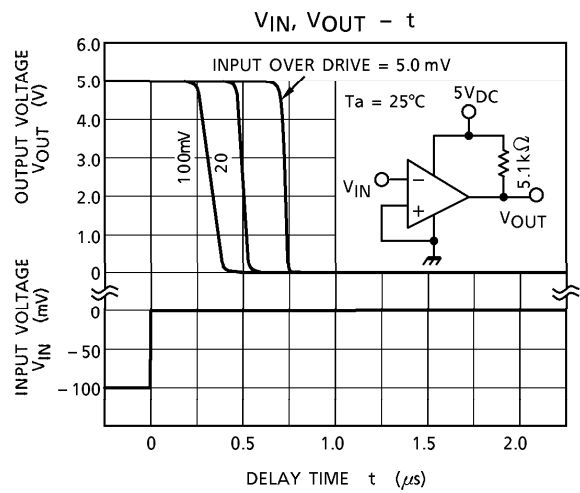
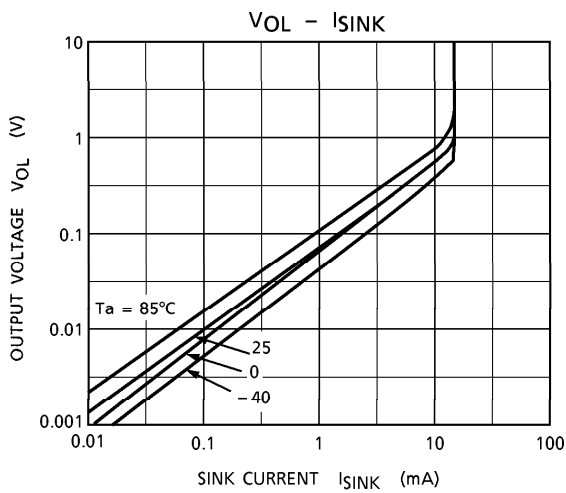
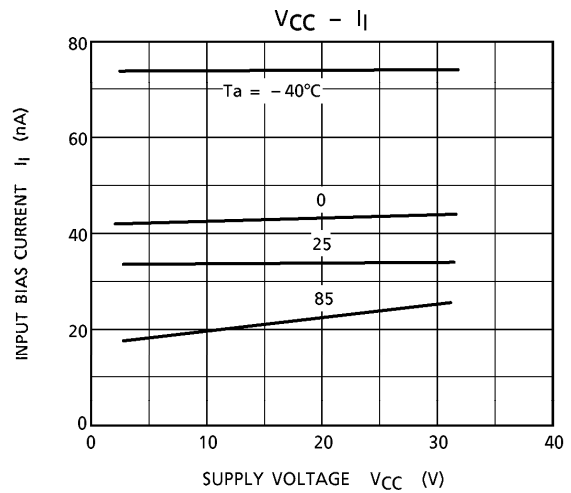
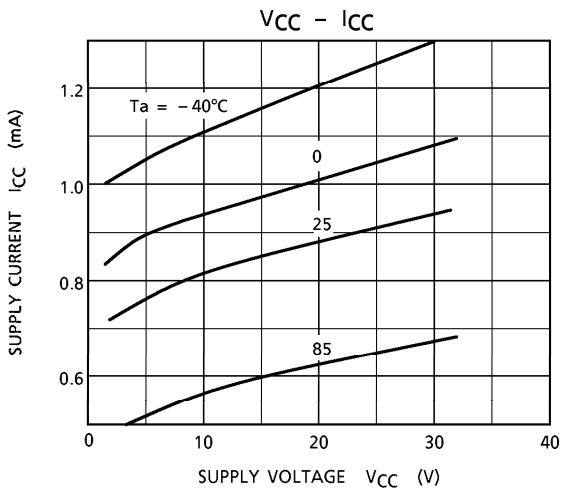
(5)  $I_{SINK}, V_{OL}$



(6)  $t_{rsp}$

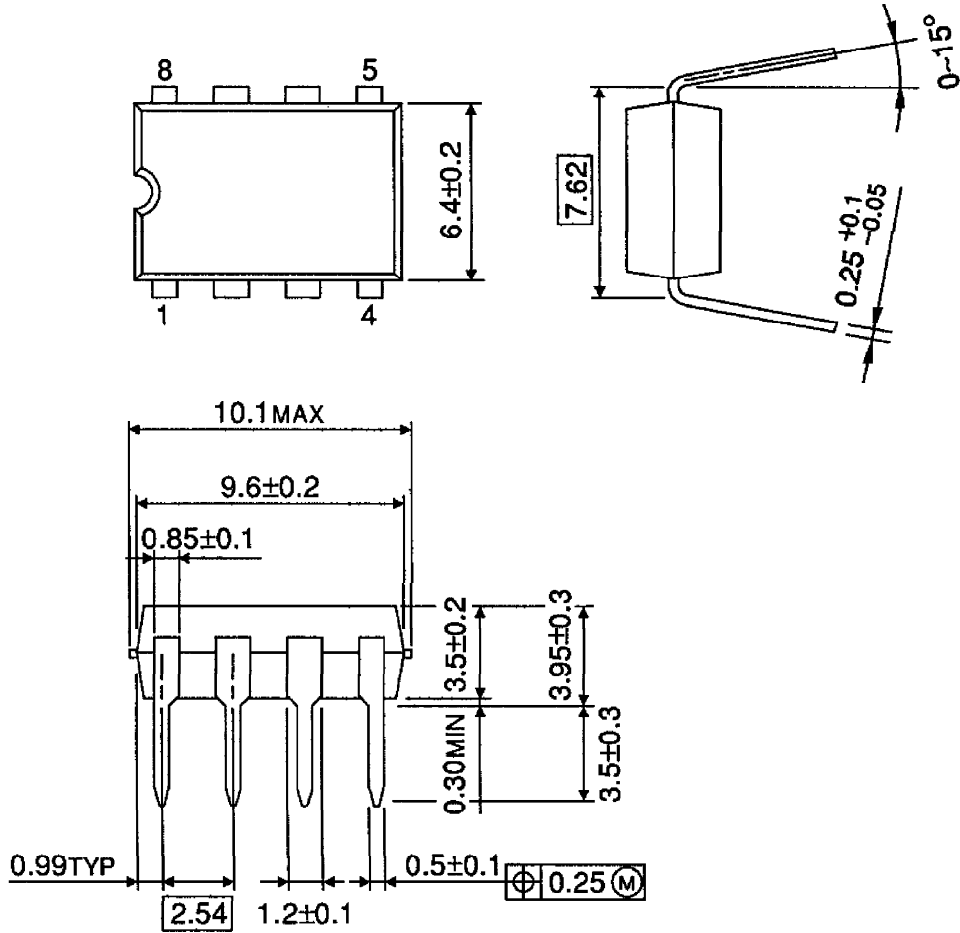


CHARACTERISTICS



**PACKAGE DIMENSIONS**  
DIP8-P-300-2.54A

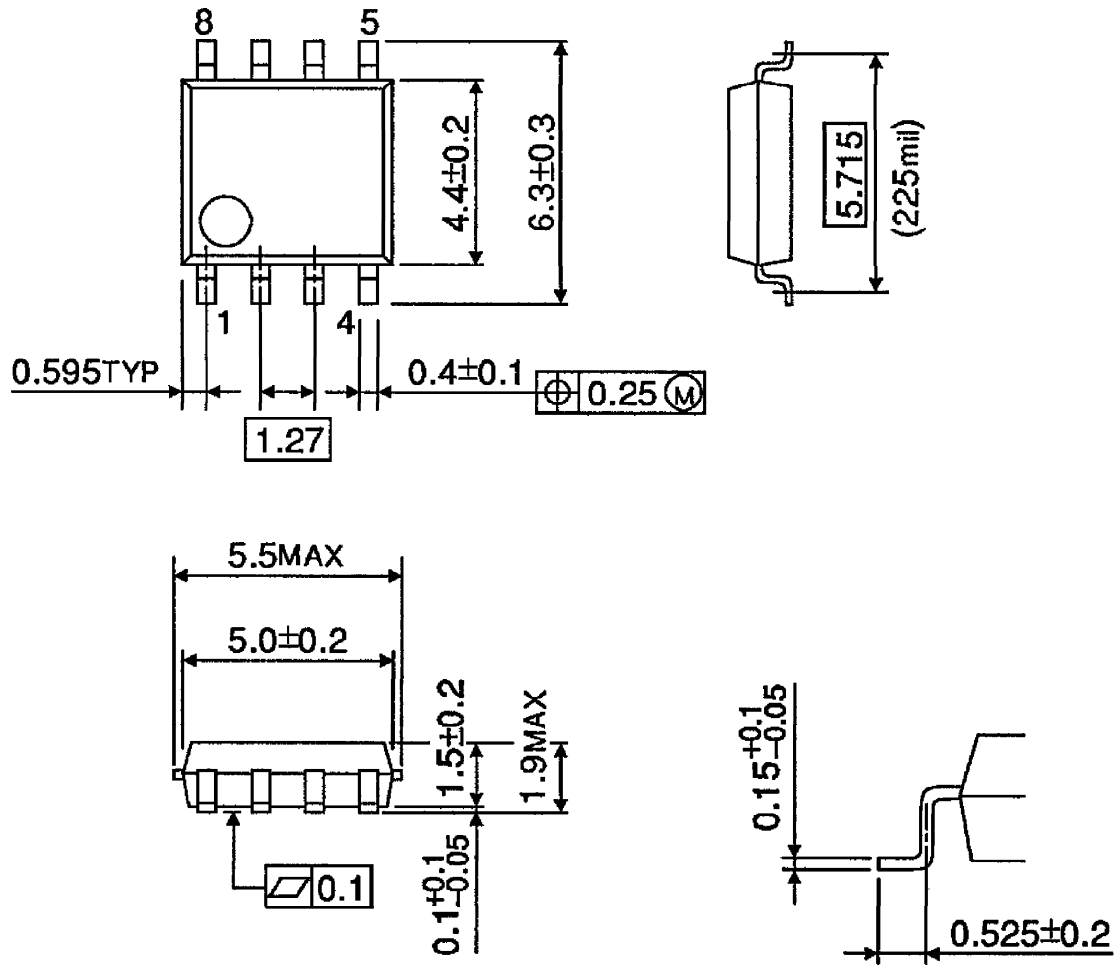
Unit : mm



Weight : 0.5 g (Typ.)

PACKAGE DIMENSIONS  
SOP8-P-225-1.27

Unit : mm



Weight : 0.1 g (Typ.)

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000707EBA

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