

**TOSHIBA****TA7522F**

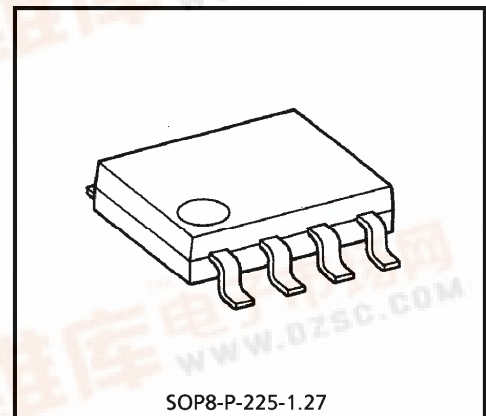
TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

**TA7522F****DUAL VOLTAGE COMPARATOR**

The TA7522F is an easy-to-use small 8-pin mini-flat package IC incorporating two voltage comparator circuits. Because of its very small size, it is useful for hybrid IC and other devices which must be very small or thin. In addition, the IC has so wide an operating temperature range that it can be used in wide application fields.

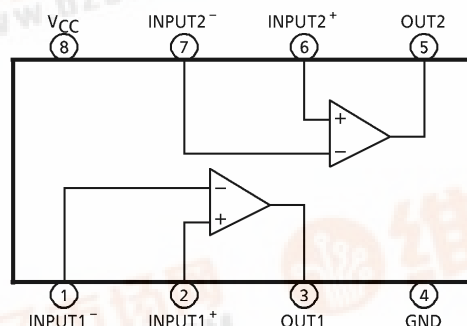
**FEATURES**

- Two-circuit package
- High gain
- Single 3V power supply for operation
- A 0V input causes action in the IC with a single power supply.
- Wide common-mode input range
- No latch-up
- Operating temperature range : from  $-40$  to  $85^{\circ}\text{C}$
- Open-collector output
- Small SOP-8 pin



SOP8-P-225-1.27

Weight : 0.08g (Typ.)

**BLOCK DIAGRAM AND PIN LAYOUT**

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## PIN DESCRIPTION

PIN No.	SYMBOL	DESCRIPTION
1	INPUT1 <sup>-</sup>	Inverted-input pin
2	INPUT1 <sup>+</sup>	Non-inverted-input pin
3	OUT1	Output pin corresponding to INPUT1
4	GND	Grounded
5	OUT2	Output pin corresponding to INPUT2
6	INPUT2 <sup>+</sup>	Non-inverted-input pin
7	INPUT2 <sup>-</sup>	Inverted-input pin
8	V <sub>CC</sub>	Power supply pin

## MAXIMUM RATINGS (Ta = 25°C)

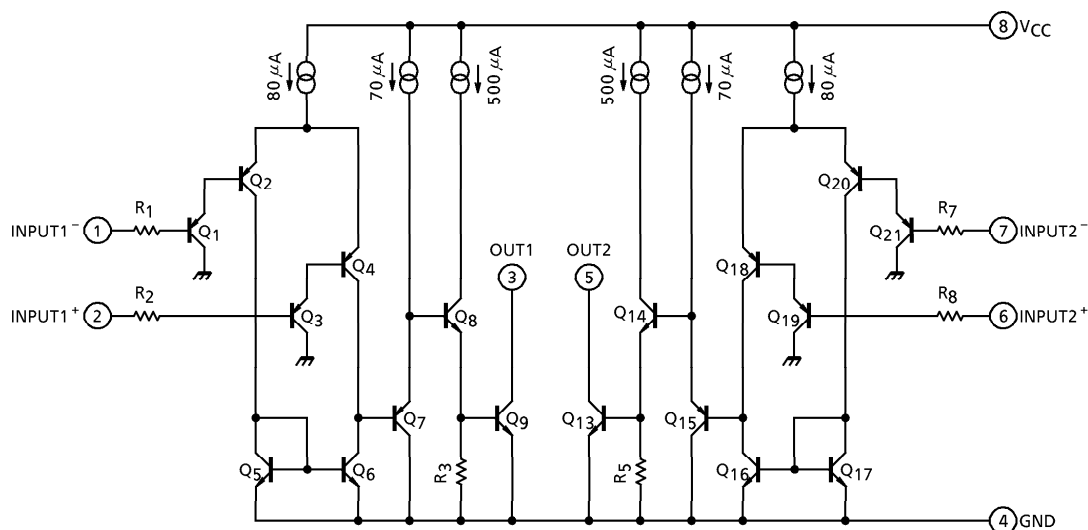
CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V <sub>CC</sub>	- 0.3 to + 18	V
Supply Voltage Surge	V <sub>CC SURGE</sub>	30 (within 1 second)	V
Power Dissipation	P <sub>D</sub>	440	mW
Differential Input Voltage	DV <sub>IN</sub>	± 18	V
Input Voltage	V <sub>IN</sub>	- 0.3 to 18	V
Output Current	I <sub>SINK</sub>	30	mA
Operating Temperature	T <sub>opr</sub>	- 40 to 85	°C
Storage Temperature	T <sub>stg</sub>	- 55 to 150	°C

ELECTRICAL CHARACTERISTICS ( $T_a = -40$  to  $+85^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	(Note) TYP.	MAX.	UNIT
Voltage Gain	$G_V$	—	$V_{CC} = 6\text{V}$ , $R_L = 1\text{k}\Omega$ $f = 10\text{Hz}$	60	95	—	dB
Input Offset Voltage	$V_{IO}$	—	$V_{CC} = 6\text{V}$ , $R_L = 1\text{k}\Omega$ $CMV_{IN} = 3$	—	2	10	mV
Input Bias Current	$I_I$	—	$V_{CC} = 6\text{V}$ , $CMV_{IN} = 3\text{V}$	—	-0.2	-2	$\mu\text{A}$
Input Offset Current	$I_{IO}$	—	Same as above	—	0.02	0.3	$\mu\text{A}$
Common-mode Input Voltage	$CMV_{IL}$	—	$V_{CC} = 6.5\text{V}$ , $R_L = 1\text{k}\Omega$ $V_{IO} = 20\text{mV}$	—	-0.5	0	V
	$CMV_{IH}$	—	Same as above	5.0	5.3	—	V
Output Voltage	$V_{OL}$	OUT1 OUT2	$V_{CC} = 5.5\text{V}$ , $V_{IN} = 0.1\text{V}$ $I_{OL} = 10\text{mA}$	—	0.18	0.4	V
Output Leakage Current	$I_{LEAK}$	OUT1 OUT2	$V_{CC} = 6\text{V}$ , $V_{OUT} = 30\text{V}$	—	—	10	$\mu\text{A}$
		OUT1	$V_{CC} = 6\text{V}$ , $V_{OUT} = 0.4\text{V}$	—	-1.5	-10	$\mu\text{A}$
Current Consumption	$I_{CC}$	—	$V_{CC} = 6.5\text{V}$ , $R_L = \infty$	—	3	7	mA

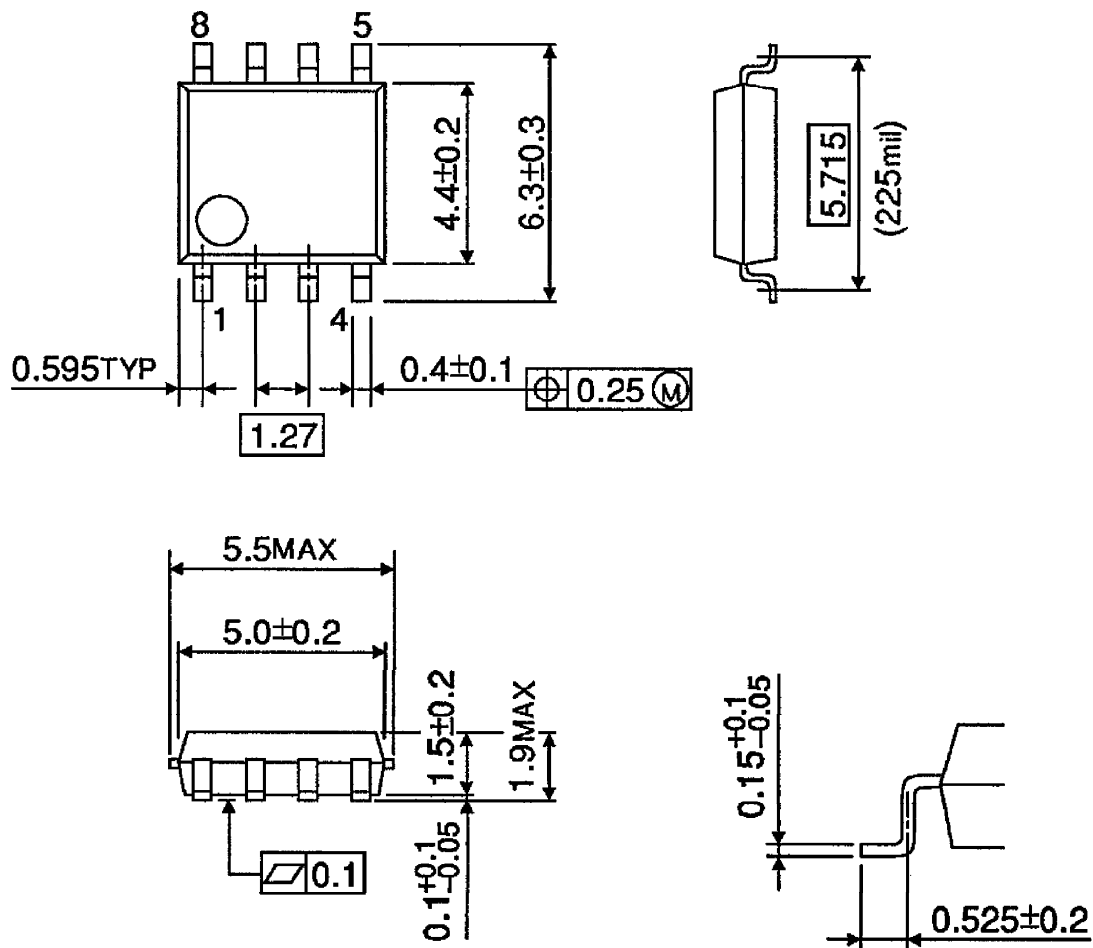
Note : An ambient temperature of  $25^\circ\text{C}$  is assumed for the typical values.

## EQUIVALENT CIRCUIT



OUTLINE DRAWING  
SOP8-P-225-1.27

Unit : mm



Weight : 0.08g (Typ.)