

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

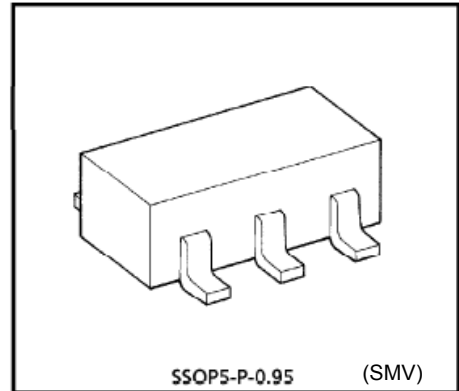
# TA75S558F

Single Low-Noise Operational Amplifier

TA75S558F is a low-noise monolithic precision operational amplifier.

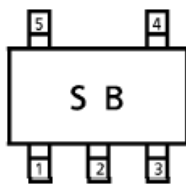
**Features**

- Internal Frequency Compensation Type.
- Pin Compatible with TA75S01F.
- Wide Band Range :  $f_T = 3\text{MHz}$  (Typ.)
- Noise Voltage Range :  $V_{NI} = 2.5\mu\text{V}_{\text{rms}}$  (Typ.)
- Power Supply Range :  $\pm 4\text{V}_{\text{DC}}$  to  $\pm 18\text{V}_{\text{DC}}$
- Suitable Application for Active Filter Equalizer Amplifier and Headphone Amplifier.

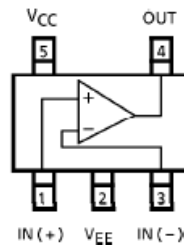


Weight : 0.014g (Typ.)

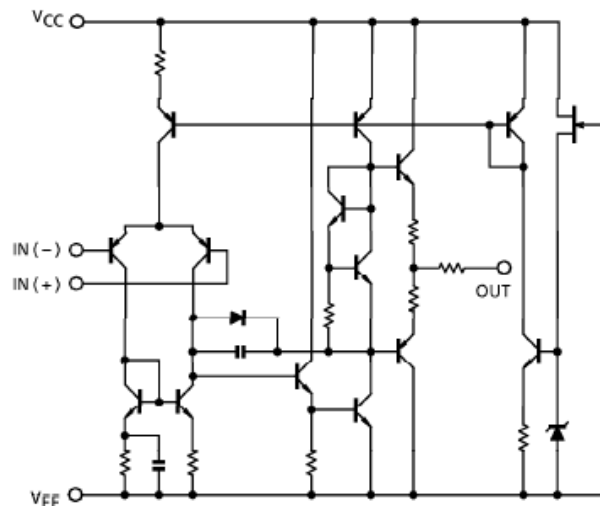
**Marking (TOP VIEW)**



**Pin Assignment (TOP VIEW)**



**Equivalent Circuit**



## Absolute Maximum Ratings (Ta=25°C)

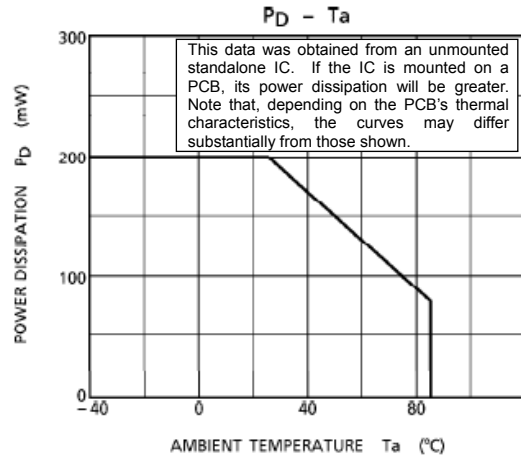
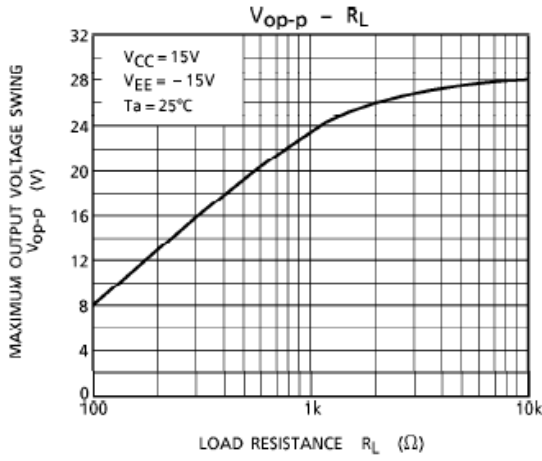
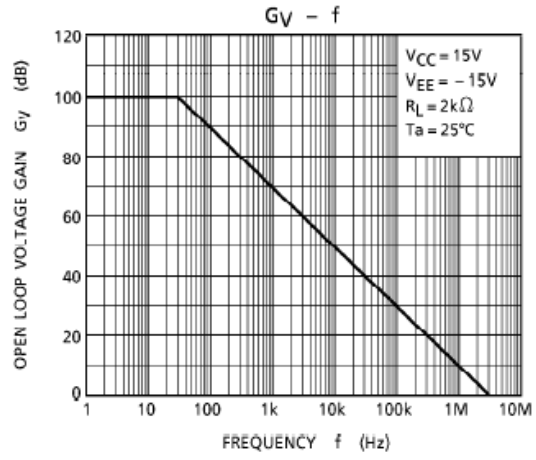
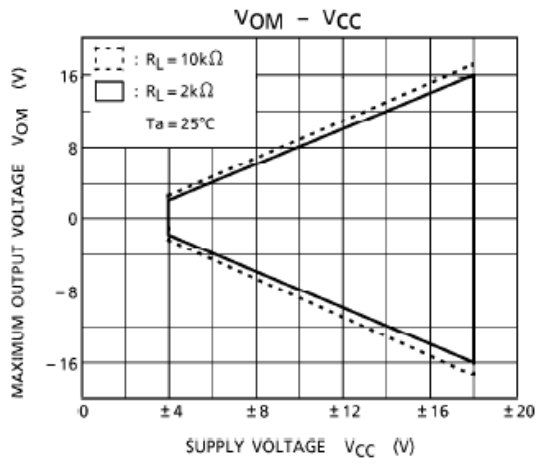
CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V <sub>CC</sub> , V <sub>EE</sub>	± 18	V
Differential Input Voltage	DV <sub>IN</sub>	± 30	V
Input Voltage	V <sub>IN</sub>	V <sub>EE</sub> ~V <sub>CC</sub>	V
Power Dissipation	P <sub>D</sub>	200	mW
Operating Temperature	T <sub>opr</sub>	- 40~85	°C
Storage Temperature	T <sub>stg</sub>	- 55~125	°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 (V<sub>CC</sub> = 15 V, V<sub>EE</sub> = -15V, Ta=25°C)

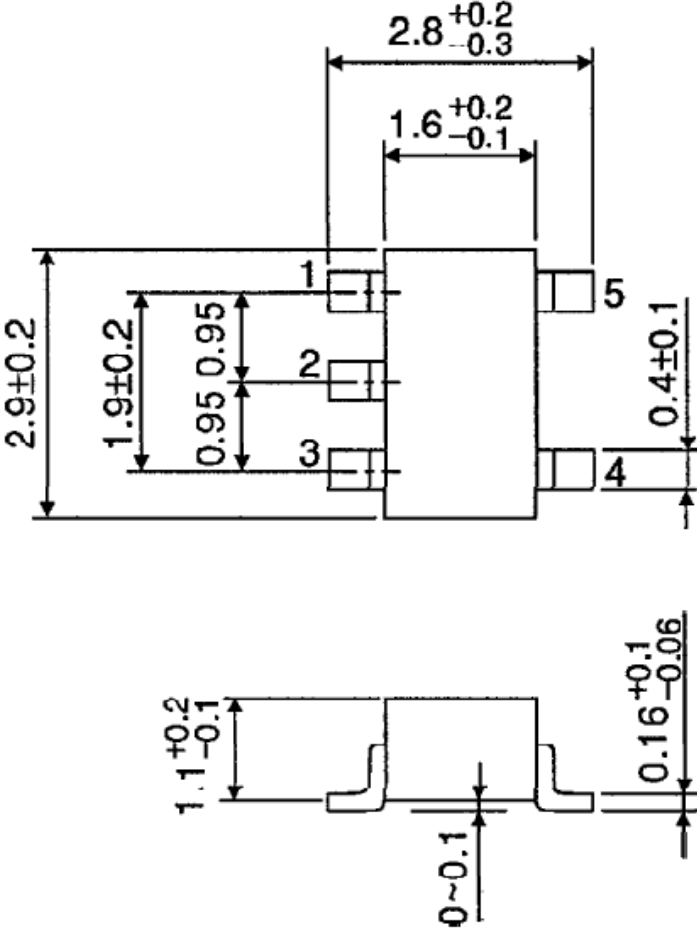
CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V <sub>IO</sub>	—	R <sub>g</sub> ≤ 10kΩ	—	0.5	6	mV
Input Offset Current	I <sub>IO</sub>	—	—	—	5	200	nA
Input Bias Current	I <sub>I</sub>	—	—	—	60	500	nA
Common Mode Input Voltage	CMV <sub>IN</sub>	—	—	± 12	± 14	—	V
Maximum Output Voltage	V <sub>OM</sub>	—	R <sub>L</sub> = 10kΩ	± 12	± 14	—	V
	V <sub>OMR</sub>	—	R <sub>L</sub> = 2kΩ	± 10	± 13	—	
Source Current	I <sub>source</sub>	—	—	—	40	—	mA
Sink Current	I <sub>sink</sub>	—	—	—	40	—	mA
Voltage Gain (Open Loop)	G <sub>v</sub>	—	V <sub>OUT</sub> = ± 10V, R <sub>L</sub> = 2kΩ	86	100	—	dB
Common Mode Input Signal Rejection Ratio	CMRR	—	R <sub>g</sub> ≤ 10kΩ	70	90	—	dB
Supply Voltage Rejection Ratio	SVRR	—	R <sub>g</sub> ≤ 10kΩ	—	30	150	μV/V
Slew Rate	SR	—	G <sub>v</sub> = 1, R <sub>L</sub> = 2kΩ	—	1.0	—	V/μs
Unity Gain Cross Frequency	f <sub>T</sub>	—	—	—	3.0	—	MHz
Supply Current	I <sub>CC</sub>	—	—	—	2.5	4.0	mA
Equivalent Input Noise Voltage	V <sub>NI</sub>	—	R <sub>s</sub> = 1kΩ, f = 30Hz~30kHz	—	2.5	—	μV <sub>rms</sub>



Package Dimension

SSOP5-P-0.95

Unit : mm



Weight : 0.014g (Typ.)

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