



# TS462

## HIGH OUTPUT SWING DUAL OPERATIONAL AMPLIFIER

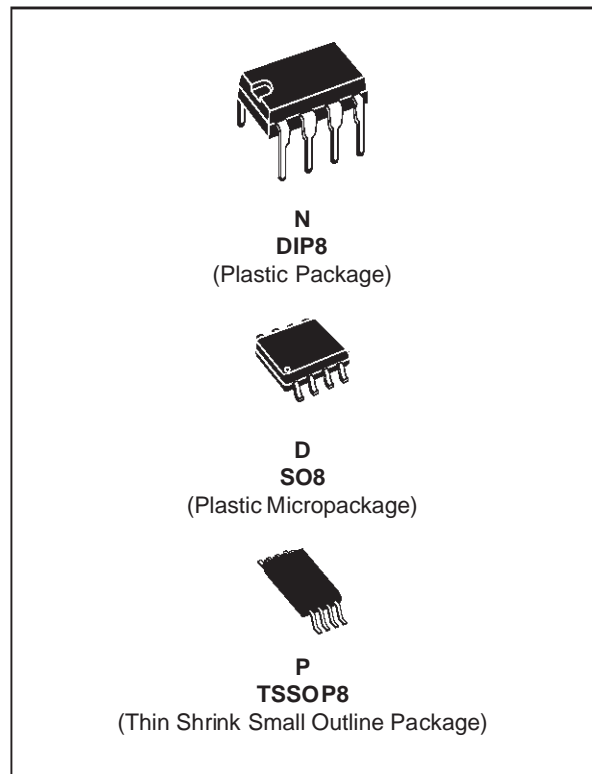
- HIGH DYNAMIC PERFORMANCE
- LOW NOISE LEVEL :  $4\text{nV}/\sqrt{\text{Hz}}$
- LOW DISTORTION : **0.003%**
- LARGE OUTPUT SWING  
( $\pm 2.4\text{V}$  @  $V_{CC} = \pm 2.5\text{V}$ )

### DESCRIPTION

The TS462 is a dual operational amplifier able to operate with voltages as low as  $\pm 1.35\text{V}$ . It can deliver a minimum of  $\pm 2\text{V}_{pp}$  of output swing (when supplied with  $\pm 2.5\text{V}$ ).

This device is well-suited to applications in portable and battery supplied equipment in which low noise and low distortion are critical.

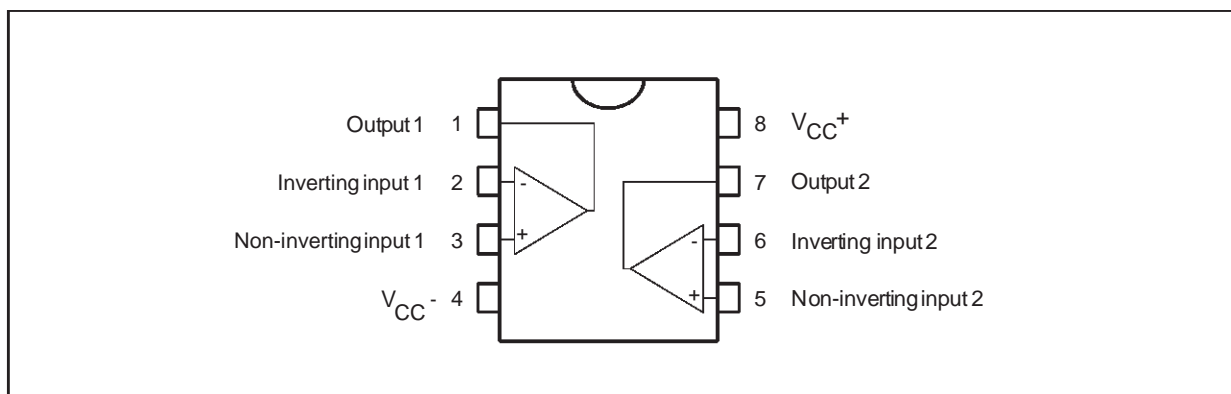
The TS462 is a cost attractive access to the range of high performance Rail to Rail op-amps from STMicroelectronics (TS9xx series).



### ORDER CODES

Part Number	Temperature Range	Package		
		N	D	P
TS462C	-20, +70°C	•	•	•

### PIN CONNECTIONS (top view)



**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
V <sub>CC</sub>	Supply Voltage	±6	V
V <sub>id</sub>	Differential Input Voltage - note 1	±V <sub>CC</sub>	V
T <sub>oper</sub>	Operating Free Air Temperature Range	-20 to 70	°C
T <sub>stg</sub>	Storage Temperature	-65 to +150	°C

Note : 1. Either or both input voltages must not exceed the magnitude of V<sub>CC</sub><sup>+</sup> or V<sub>CC</sub><sup>-</sup>

**OPERATING CONDITIONS**

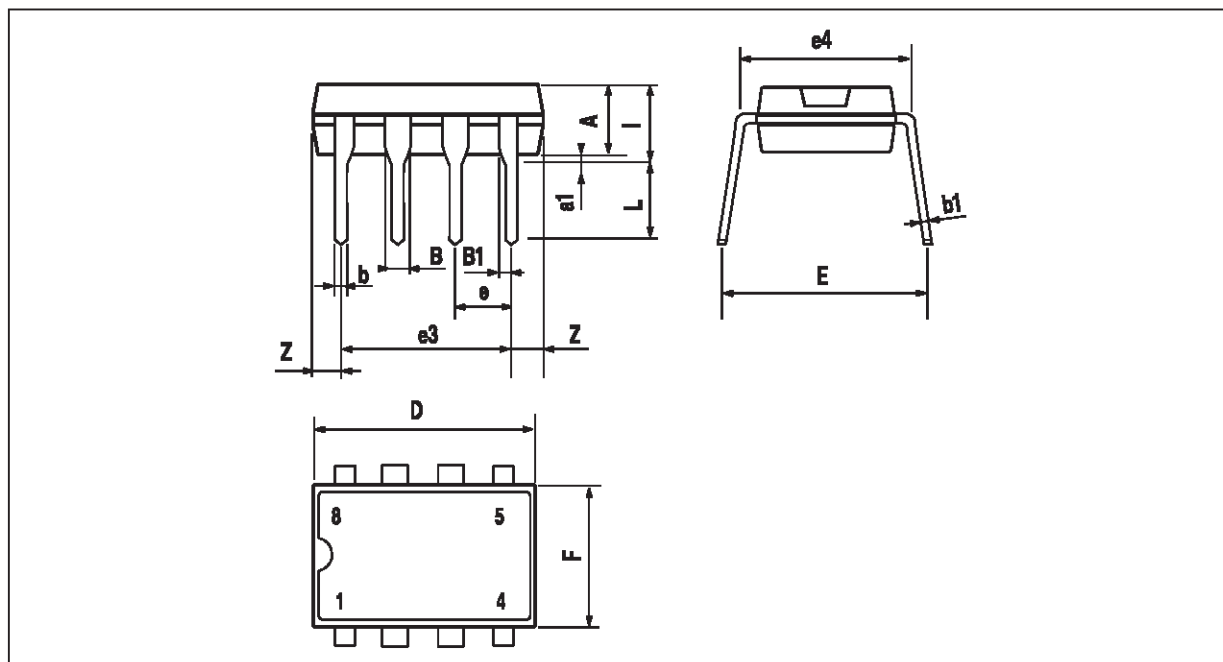
Symbol	Parameter	Value	Unit
V <sub>CC</sub>	Supply Voltage	±1.35 to ±5	V

**ELECTRICAL CHARACTERISTICS**

V<sub>CC</sub><sup>+</sup> = +2.5V, V<sub>CC</sub><sup>-</sup> = -2.5V, T<sub>amb</sub> = 25°C (unless otherwise specified)

Symbol	Parameter	Min.	Typ.	Max.	Unit
V <sub>io</sub>	Input Offset Voltage V <sub>ic</sub> = 0V, V <sub>o</sub> = 0V		1	5	mV
DV <sub>io</sub>	Input Offset Voltage Drift V <sub>ic</sub> = 0V, V <sub>o</sub> = 0V		5		µV/°C
I <sub>io</sub>	Input Offset Current V <sub>ic</sub> = 0V, V <sub>o</sub> = 0V		10	150	nA
I <sub>ib</sub>	Input Bias Current V <sub>ic</sub> = 0V, V <sub>o</sub> = 0V		250	750	nA
V <sub>icm</sub>	Common Mode Input Voltage Range	+1.35		+1.35	V
CMR	Common Mode Rejection Ratio V <sub>ic</sub> = ±1.35V	60	85		dB
SVR	Supply Voltage Rejection Ratio V <sub>CC</sub> = ±2V to ±3V	60	70		dB
V <sub>oh</sub>	High Level Output Voltage V <sub>id</sub> = 100mV R <sub>L</sub> = 2k	2	2.4		V
V <sub>ol</sub>	Low Level Output Voltage V <sub>id</sub> = -100mV R <sub>L</sub> = 2k		-2.4	-2	V
A <sub>vd</sub>	Large Signal Voltage Gain R <sub>L</sub> = 2k	70	80		dB
GBP	Gain Bandwidth Product f = 100kHz, R <sub>L</sub> = 2kΩ, C <sub>L</sub> = 100pF	8.5	12		MHz
SR	Slew Rate A <sub>v</sub> = 1, V <sub>in</sub> = ±1V	2.8	4		V/µs
I <sub>CC</sub>	Supply Current per Amplifier Unity gain - no load		2	2.8	mA
e <sub>n</sub>	Equivalent Input Noise Voltage f = 100kHz		4		$\frac{nV}{\sqrt{Hz}}$
THD	Total Harmonic Distortion f = 1kHz, A <sub>v</sub> = -1, R <sub>L</sub> = 10kΩ		0.003		%

**PACKAGE MECHANICAL DATA**  
8 PINS - PLASTIC DIP

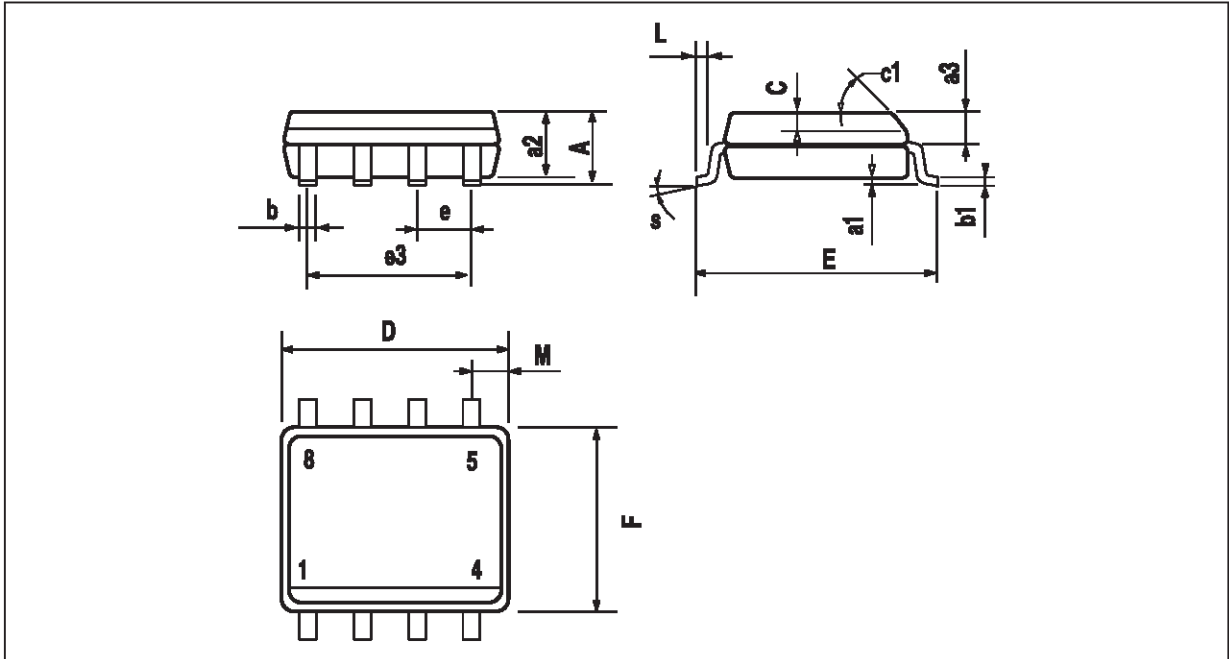


PM-DIP8.EPS

Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A		3.32			0.131	
a1	0.51			0.020		
B	1.15		1.65	0.045		0.065
b	0.356		0.55	0.014		0.022
b1	0.204		0.304	0.008		0.012
D			10.92			0.430
E	7.95		9.75	0.313		0.384
e		2.54			0.100	
e3		7.62			0.300	
e4		7.62			0.300	
F			6.6			0.260
i			5.08			0.200
L	3.18		3.81	0.125		0.150
Z			1.52			0.060

DIP8.TBL

**PACKAGE MECHANICAL DATA**  
 8 PINS - PLASTIC MICROPACKAGE (SO)

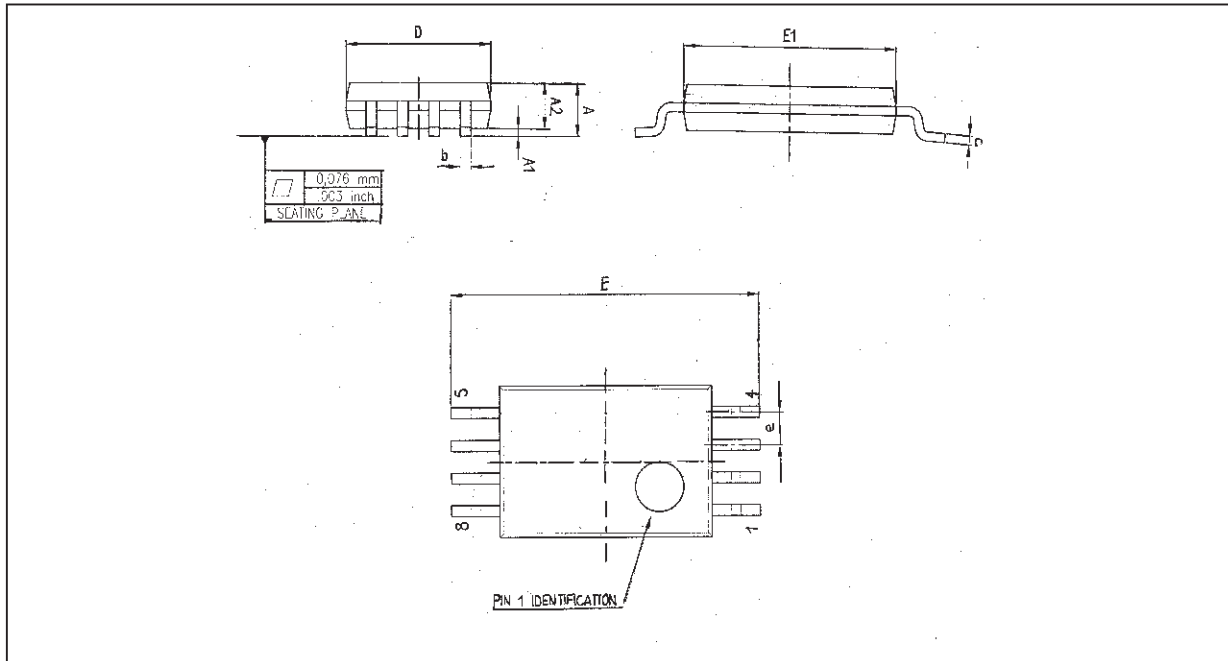


PWA-S08.EPS

Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			1.75			0.069
a1	0.1		0.25	0.004		0.010
a2			1.65			0.065
a3	0.65		0.85	0.026		0.033
b	0.35		0.48	0.014		0.019
b1	0.19		0.25	0.007		0.010
C	0.25		0.5	0.010		0.020
c1	45° (typ.)					
D	4.8		5.0	0.189		0.197
E	5.8		6.2	0.228		0.244
e		1.27			0.050	
e3		3.81			0.150	
F	3.8		4.0	0.150		0.157
L	0.4		1.27	0.016		0.050
M			0.6			0.024
S	8° (max.)					

SO8.TBL

**PACKAGE MECHANICAL DATA**  
**8 PINS - THIN SHRINK SMALL OUTLINE PACKAGE**



Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			1.20			0.05
A1	0.05		0.15	0.01		0.006
A2	0.80	1.00	1.05	0.031	0.039	0.041
b	0.19		0.30	0.007		0.15
c	0.09		0.20	0.003		0.012
D	2.90	3.00	3.10	0.114	0.118	0.122
E		6.40			0.252	
E1	4.30	4.40	4.50	0.169	0.173	0.177
e		0.65			0.025	
k	0°		8°	0°		8°
l	0.50	0.60	0.75	0.09	0.0236	0.030

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