

# EL2232D Die

## Dual 60 MHz Current Feedback Amplifiers

EL2232D

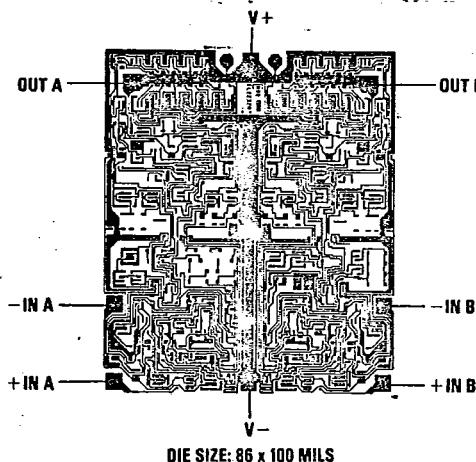
### Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$ )

|                 |                                        |                                            |
|-----------------|----------------------------------------|--------------------------------------------|
| $V_S$           | Supply Voltage                         | $\pm 18\text{V}$ or $+36\text{V}$          |
| $V_{IN}$        | Input Voltage                          | $\pm 15\text{V}$ or $V_S$                  |
| $\Delta V_{IN}$ | Differential Input Voltage             | $\pm 6\text{V}$                            |
| $I_{IN}$        | Input Current (Pins 2 or 3)            | $\pm 10\text{ mA}$                         |
| $I_{OP}$        | Peak Output Current                    | Short Circuit Protected                    |
|                 | Output Short Circuit Duration (Note 1) | Continuous                                 |
| $T_A$           | Operating Temperature Range            | $-55^\circ\text{C}$ to $125^\circ\text{C}$ |
| $T_J$           | Maximum Junction Temperature           | $175^\circ\text{C}$                        |

#### Important Note:

For AC electrical characteristics, refer to the typical electrical table and performance curves in the package data sheet. These characteristics are guaranteed but not tested in die form. Unless otherwise noted, all tests are pulsed tests, therefore  $T_J = T_C = T_A$ .

| Test Level | Test Procedure                                                                                            |
|------------|-----------------------------------------------------------------------------------------------------------|
| I          | 100% production tested in wafer form.<br>See remarks under Electrical Testing in the General Die section. |



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### Open Loop Characteristics $V_S = \pm 15\text{V}$ , $T_A = 25^\circ\text{C}$ , $R_L = 500\Omega$ , unless otherwise specified

| Parameter         | Description                                         | Conditions                            | Min  | Typ  | Max  | Test Level | Units            |
|-------------------|-----------------------------------------------------|---------------------------------------|------|------|------|------------|------------------|
| $V_{OS}$          | Input Offset Voltage                                | $V_S = \pm 5\text{V}, \pm 15\text{V}$ |      | 2    | 7    | I          | mV               |
| $+I_N$            | + Input Current                                     | $V_S = \pm 5\text{V}, \pm 15\text{V}$ |      | 1.2  | 3    | I          | $\mu\text{A}$    |
| $-I_N$            | - Input Current                                     | $V_S = \pm 5\text{V}, \pm 15\text{V}$ |      | 5    | 20   | I          | $\mu\text{A}$    |
| $+R_{IN}$         | + Input Resistance                                  |                                       | 2    | 20   |      | I          | $\text{M}\Omega$ |
| CMRR (Note 2)     | Common Mode Rejection Ratio                         | $V_S = \pm 5\text{V}, \pm 15\text{V}$ | 56   | 63   |      | I          | dB               |
| -ICMR (Note 2)    | - Input Common Mode Rejection                       |                                       |      | 0.25 | 0.75 | I          | $\mu\text{A/V}$  |
| PSRR (Note 3)     | Power Supply Rejection Ratio                        |                                       | 66   | 80   |      | I          | dB               |
| +IPSR (Note 3)    | + Input Current Power Supply Rejection              |                                       |      | 0.03 | 0.06 | I          | $\mu\text{A/V}$  |
| -IPSR (Note 2)    | - Input Current Power Supply Rejection              |                                       |      | 0.06 | 0.2  | I          | $\mu\text{A/V}$  |
| $R_{OL}$ (Note 4) | Transimpedance ( $\Delta V_{OUT}/\Delta(-I_{IN})$ ) | $V_S = \pm 5\text{V}, \pm 15\text{V}$ | 1.2  | 4    |      | I          | $\text{M}\Omega$ |
| $V_O$             | Output Voltage Swing                                | $V_S = \pm 15\text{V}$                | 11.5 | 12.5 |      | I          | V                |
|                   |                                                     | $V_S = \pm 5\text{V}$                 | 2    | 2.5  |      | I          | V                |
| $I_{OUT}$         | Output Current                                      | $V_S = 15\text{V}$                    | 23   | 30   |      | I          | mA               |
| $I_S$             | Quiescent Supply Current                            |                                       |      | 9.5  | 13   | I          | mA               |

Note 1: Junction temperature must be below absolute maximum rating when an output is shorted.

Note 2:  $V_{CM} = \pm 10\text{V}$  for  $V_S = \pm 15\text{V}$ . For  $V_S = \pm 5\text{V}$ ,  $V_{CM} = \pm 2\text{V}$ .

Note 3:  $V_{OS}$  is measured at  $V_S = \pm 4.5\text{V}$  and at  $V_S = \pm 18\text{V}$ . Both supplies are changed simultaneously.

Note 4:  $V_{OUT} = \pm 10\text{V}$  for  $V_S = \pm 15\text{V}$ ,  $V_{OUT} = \pm 2\text{V}$  for  $V_S = \pm 5\text{V}$ ,  $R_L = 500\Omega$ .

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