## Absolute Maximum Ratings

$V_{CC}$, RS+, RS- to GND .....-0.3V to +30V
OUT to GND .....-0.3V to +15V
Differential Input Voltage ($V_{RS+}$ - $V_{RS-}$) .....±0.3V
Current into Any Pin .....±10mA
Continuous Power Dissipation ($T_A$ = +70°C)
5-Pin SOT23 (derate 3.9mW/°C above +70°C) .....312.6mW
8-Pin SO (derate 7.4mW/°C above +70°C).....588.2mW
3 x 2 UCSP (derate 3.4mW/°C above +70°C) .....273.2mW

Operating Temperature Range ..... -40°C to +85°C
Storage Temperature Range ..... -65°C to +150°C
Lead Temperature (soldering, 10s) .....+300°C
Soldering Temperature (reflow) .....+260°C

*Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.*

## Electrical Characteristics

($V_{RS+}$ = 0 to 28V, $V_{CC}$ = 2.7V to 28V, $V_{SENSE}$ = 0V, $R_{LOAD}$ = 1MΩ, $T_A$ = $T_{MIN}$ to $T_{MAX}$, unless otherwise noted. Typical values are at $T_A$ = +25°C.) (Note 1)

| PARAMETER | SYMBOL | CONDITIONS | | MIN | TYP | MAX | UNITS |
|---|---|---|---|---|---|---|---|
| Operating Voltage Range (Note 2) | $V_{CC}$ | | | 2.7 | | 28 | V |
| Common-Mode Input Range (Note 3) | $V_{CMR}$ | | | 0 | | 28 | V |
| Common-Mode Rejection | CMR | $V_{RS+}$ > 2V | | | 85 | | dB |
| Supply Current | $I_{CC}$ | $V_{RS+}$ > 2V, $V_{SENSE}$ = 5mV | | | 30 | 60 | µA |
| Leakage Current | $I_{RS+}$, $I_{RS-}$ | $V_{CC}$ = 0V, $V_{RS+}$ = 28V | | | 0.05 | 1.2 | µA |
| Input Bias Current | $I_{RS+}$ | $V_{RS+}$ > 2V | | 0 | | 1 | µA |
| | | $V_{RS+}$ ≤ 2V | | -25 | | +2 | |
| | $I_{RS-}$ | $V_{RS+}$ > 2V | | 0 | | 2 | |
| | | $V_{RS+}$ ≤ 2V | | -50 | | +2 | |
| Full-Scale Sense Voltage (Note 4) | $V_{SENSE}$ | Gain = 20V/V or 50V/V | | | 150 | | mV |
| | | Gain = 100V/V | | | 100 | | |
| Input Offset Voltage (Note 5) | $V_{OS}$ | $T_A$ = +25°C, $V_{CC}$ = $V_{RS+}$ = 12V | MAX4372_ESA | | 0.3 | ±0.8 | mV |
| | | | MAX4372_EUK, _EBT | | 0.3 | ±1.3 | |
| | | $T_A$ = $T_{MIN}$ to $T_{MAX}$, $V_{CC}$ = $V_{RS+}$ = 12V | MAX4372_ESA | | | ±1.1 | |
| | | | MAX4372_EUK, _EBT | | | ±1.9 | |
| Full-Scale Accuracy (Note 5) | | $V_{SENSE}$ = 100mV, $V_{CC}$ = 12V, $V_{RS+}$ = 12V, $T_A$ = +25°C (Note 7) | | | ±0.18 | ±3 | % |
| Total OUT Voltage Error (Note 6) | | $V_{SENSE}$ = 100mV, $V_{CC}$ = 12V, $V_{RS+}$ = 12V (Note 7) | | | | ±6 | |
| | | $V_{SENSE}$ = 100mV, $V_{CC}$ = 28V, $V_{RS+}$ = 28V (Note 7) | | | ±0.15 | ±7 | |
| | | $V_{SENSE}$ = 100mV, $V_{CC}$ = 12V, $V_{RS+}$ = 0.1V (Note 7) | | | ±1 | ±28 | |
| | | $V_{SENSE}$ = 6.25mV, $V_{CC}$ = 12V, $V_{RS+}$ = 12V (Note 8) | | | ±0.15 | | |

## Electrical Characteristics (continued)

($V_{RS+}$ = 0 to 28V, $V_{CC}$ = 2.7V to 28V, $V_{SENSE}$ = 0V, $R_{LOAD}$ = 1MΩ, $T_A$ = $T_{MIN}$ to $T_{MAX}$, unless otherwise noted. Typical values are at $T_A$ = +25°C.) (Note 1)

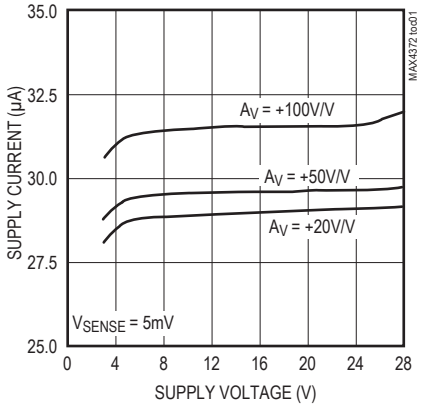
| PARAMETER | SYMBOL | CONDITIONS | | MIN | TYP | MAX | UNITS |
|---|---|---|---|---|---|---|---|
| OUT Low Voltage (MAX4372T, MAX4372F) | $V_{OL}$ | $V_{CC}$ = 2.7V, $V_{SENSE}$ = -10mV, $V_{RS+}$ = 28V | $I_{OUT}$ = 10µA | | 2.6 | | mV |
| | | | $I_{OUT}$ = 100µA | | 9 | 65 | |
| OUT Low Voltage (MAX4372H) | $V_{OL}$ | $V_{CC}$ = 2.7V, $V_{SENSE}$ = -10mV, $V_{RS+}$ = 12V | $I_{OUT}$ = 10µA | | 2.6 | | mV |
| | | | $I_{OUT}$ = 100µA | | 9 | 65 | |
| OUT High Voltage | $V_{CC}$ - $V_{OH}$ | $V_{CC}$ = 2.7V, $I_{OUT}$ = -500µA, $V_{SENSE}$ = 250mV, $V_{RS+}$ = 28V | | | 0.1 | 0.25 | V |
| -3dB Bandwidth | BW | $V_{RS+}$ = 12V, $V_{CC}$ = 12V, $C_{LOAD}$ = 10pF | $V_{SENSE}$ = 20mV, gain = 20V/V | | 275 | | kHz |
| | | | $V_{SENSE}$ = 20mV, gain = 50V/V | | 200 | | |
| | | | $V_{SENSE}$ = 20mV, gain = 100V/V | | 110 | | |
| | | | $V_{SENSE}$ = 6.25mV | | 50 | | |
| Gain | | MAX4372T | | | 20 | | V/V |
| | | MAX4372F | | | 50 | | |
| | | MAX4372H | | | 100 | | |
| Gain Accuracy | | $V_{SENSE}$ = 20mV to 100mV, $V_{RS+}$ = 12V | $T_A$ = +25°C | | ±0.25 | ±2.5 | % |
| | | | $T_A$ = -40°C to +85°C | | | ±5.5 | |
| OUT Settling Time to 1% of Final Value | | Gain = 20V/V, $V_{CC}$ = 12V, $V_{RS+}$ = 12V, $C_{LOAD}$ = 10pF | $V_{SENSE}$ = 6.25mV to 100mV | | 20 | | µs |
| | | | $V_{SENSE}$ = 100mV to 6.25mV | | 20 | | |
| Capacitive-Load Stability | | No sustained oscillations | | | 1000 | | pF |
| OUT Output Resistance | $R_{OUT}$ | $V_{SENSE}$ = 100mV | | | 1.5 | | Ω |
| Power-Supply Rejection | PSR | $V_{OUT}$ = 2V, $V_{RS+}$ > 2V | | 75 | 85 | | dB |
| Power-Up Time to 1% of Final Value | | $V_{CC}$ = 12V, $V_{RS+}$ = 12V, $V_{SENSE}$ = 100mV, $C_{LOAD}$ = 10pF | | | 0.5 | | ms |
| Saturation Recovery Time (Note 9) | | $V_{CC}$ = 12V, $V_{RS+}$ = 12V, $C_{LOAD}$ = 10pF | | | 0.1 | | ms |

**Note 1:** All devices are 100% production tested at $T_A$ = +25°C. All temperature limits are guaranteed by design.
**Note 2:** Guaranteed by PSR test.
**Note 3:** Guaranteed by OUT voltage error test.
**Note 4:** Output voltage is internally clamped not to exceed 12V.
**Note 5:** $V_{OS}$ is extrapolated from the gain accuracy tests.
**Note 6:** Total OUT voltage error is the sum of gain and offset voltage errors.
**Note 7:** Measured at $I_{OUT}$ = -500µA ($R_{LOAD}$ = 4kΩ for gain = 20V/V, $R_{LOAD}$ = 10kΩ for gain = 50V/V, $R_{LOAD}$ = 20kΩ for gain = 100V/V).
**Note 8:** 6.25mV = 1/16 of 100mV full-scale voltage (C/16).
**Note 9:** The device does not reverse phase when overdriven.

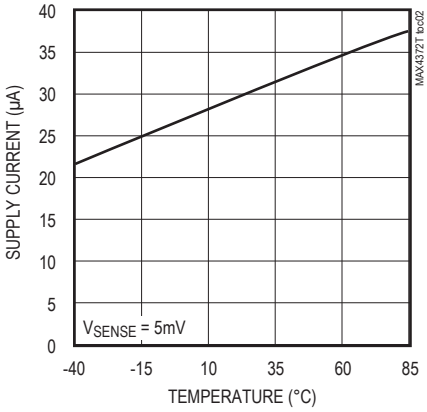
## Typical Operating Characteristics

($V_{CC}$ = 12V, $V_{RS+}$ = 12V, $V_{SENSE}$ = 100mV, $T_A$ = +25°C, unless otherwise noted.)

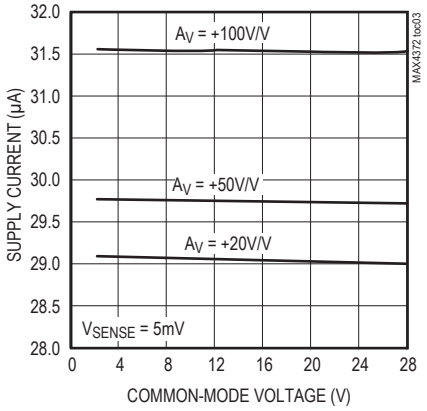
**SUPPLY CURRENT vs. SUPPLY VOLTAGE**



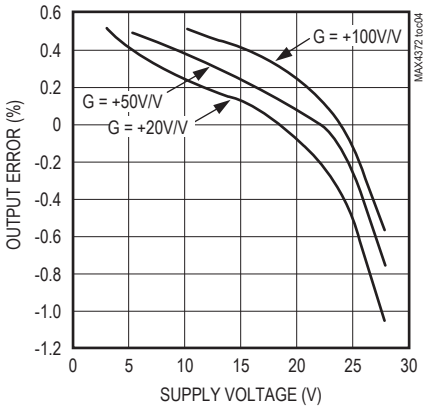

**SUPPLY CURRENT vs. TEMPERATURE**



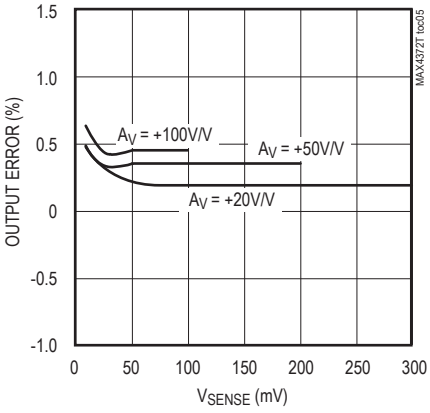

**SUPPLY CURRENT vs. COMMON-MODE VOLTAGE**



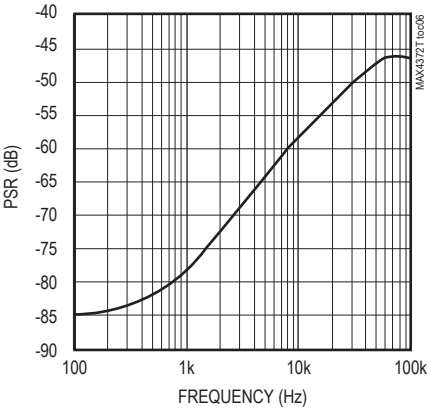

**TOTAL OUTPUT ERROR vs. SUPPLY VOLTAGE**



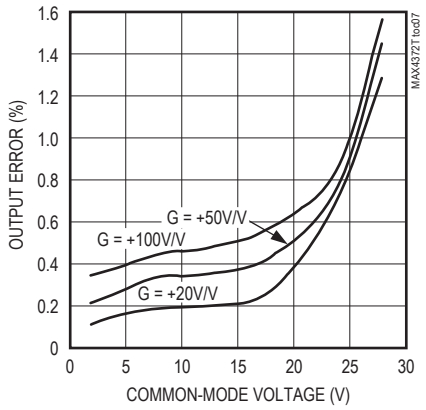

**TOTAL OUTPUT ERROR vs. $V_{SENSE}$**



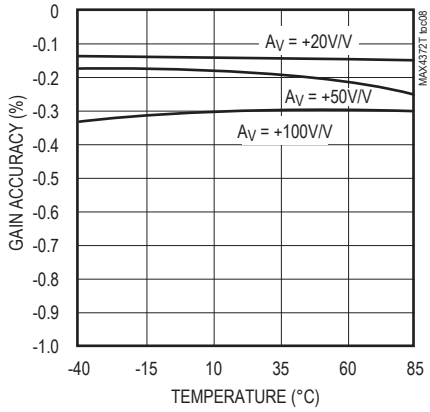

**POWER-SUPPLY REJECTION vs. FREQUENCY**



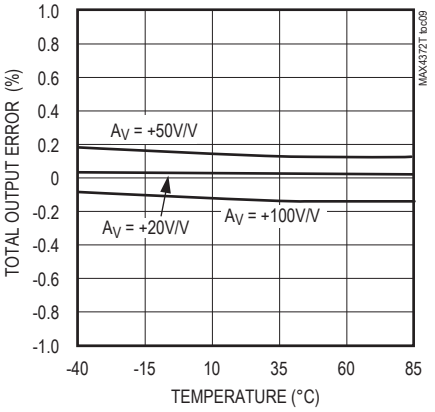

**TOTAL OUTPUT ERROR vs. COMMON-MODE VOLTAGE**




**GAIN ACCURACY vs. TEMPERATURE**



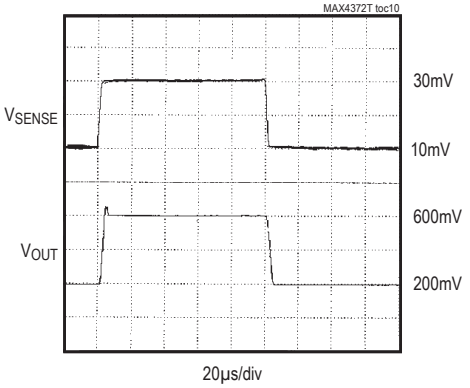

**TOTAL OUTPUT ERROR vs. TEMPERATURE**



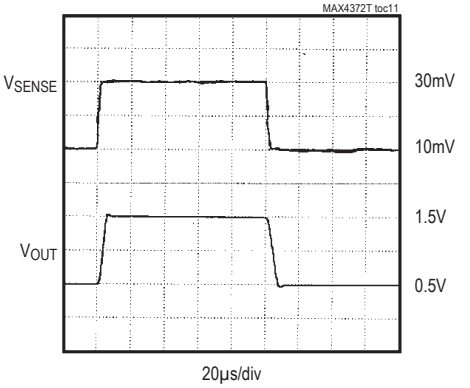
## Typical Operating Characteristics (continued)

($V_{CC}$ = 12V, $V_{RS+}$ = 12V, $V_{SENSE}$ = 100mV, $T_A$ = +25°C, unless otherwise noted.)

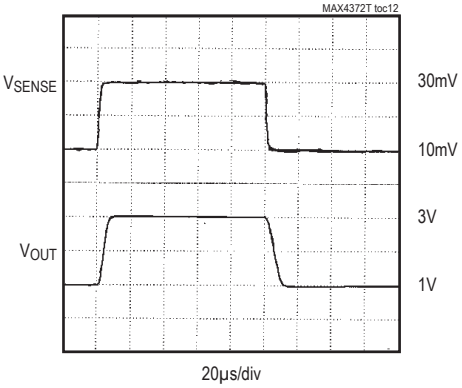
**MAX4372T**
**SMALL-SIGNAL TRANSIENT RESPONSE**



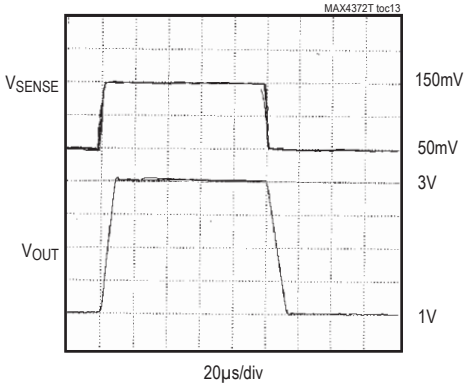

**MAX4372F**
**SMALL-SIGNAL TRANSIENT RESPONSE**



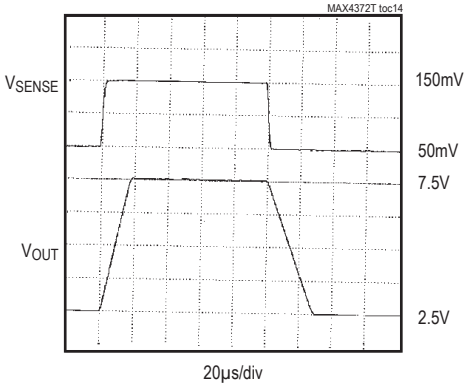

**MAX4372H**
**SMALL-SIGNAL TRANSIENT RESPONSE**



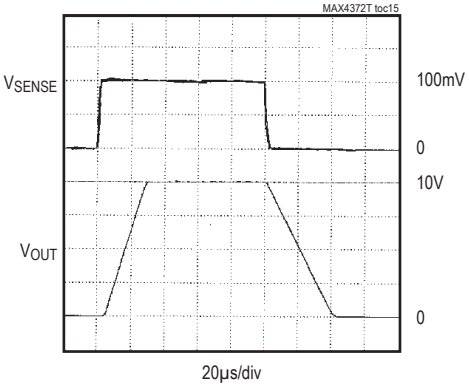

**MAX4372T**
**LARGE-SIGNAL TRANSIENT RESPONSE**



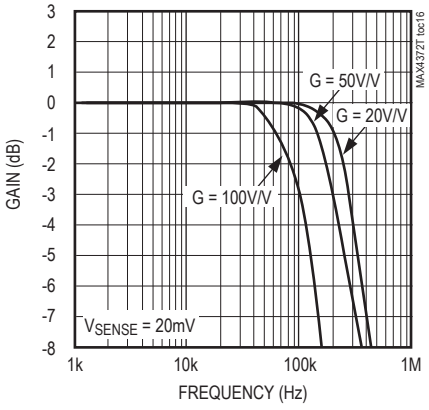

**MAX4372F**
**LARGE-SIGNAL TRANSIENT RESPONSE**




**MAX4372H**
**LARGE-SIGNAL TRANSIENT RESPONSE**




**SMALL-SIGNAL GAIN vs. FREQUENCY**



## Pin/Bump Description

| PIN | | BUMP | NAME | FUNCTION |
|---|---|---|---|---|
| SOT23 | SO | UCSP | | |
| 1 | 3 | A2 | GND | Ground |
| 2 | 4 | A3 | OUT | Output Voltage. $V_{OUT}$ is proportional to the magnitude of $V_{SENSE}$ ($V_{RS+}$ - $V_{RS-}$). |
| 3 | 1 | A1 | $V_{CC}$ | Supply Voltage. Use at least a 0.1µF capacitor to decouple $V_{CC}$ from fast transients. |
| 4 | 8 | B1 | RS+ | Power Connection to the External Sense Resistor |
| 5 | 6 | B3 | RS- | Load-Side Connection to the External Sense Resistor |
| — | 2, 5, 7 | — | N.C. | No Connection. Not internally connected. |

## Detailed Description

The MAX4372 high-side current-sense amplifier features a 0 to 28V input common-mode range that is independent of supply voltage. This feature allows the monitoring of current flow out of a battery in deep discharge, and also enables high-side current sensing at voltages far in excess of the supply voltage ($V_{CC}$).

Current flows through the sense resistor, generating a sense voltage (Figure 1. Functional Diagram). Since A1's inverting input is high impedance, the voltage on the negative terminal equals $V_{IN}$ - $V_{SENSE}$. A1 forces its positive terminal to match its negative terminal; therefore, the voltage across $R_{G1}$ ($V_{IN}$ - V1-) equals $V_{SENSE}$. This creates a current to flow through $R_{G1}$ equal to $V_{SENSE}/R_{G1}$. The transistor and current mirror amplify the current by a factor of β. This makes the current flowing out of the current mirror equal to:

$$I_M = \beta\ V_{SENSE}/R_{G1}$$

A2's positive terminal presents high impedance, so this current flows through $R_{GD}$, with the following result:

$$V2+ = R_{GD}\ \beta\ x\ V_{SENSE}/R_{G1}$$

R1 and R2 set the closed-loop gain for A2, which amplifies V2+, yielding:

$$V_{OUT} = R_{GD}\ x\ \beta\ x\ V_{SENSE}/R_{G1}\ (1 + R2/R1)$$

The gain of the device equals:

$$\frac{V_{OUT}}{V_{SENSE}} = RGD\ x\ \beta(1 + R2/R1)/R_{G1}$$

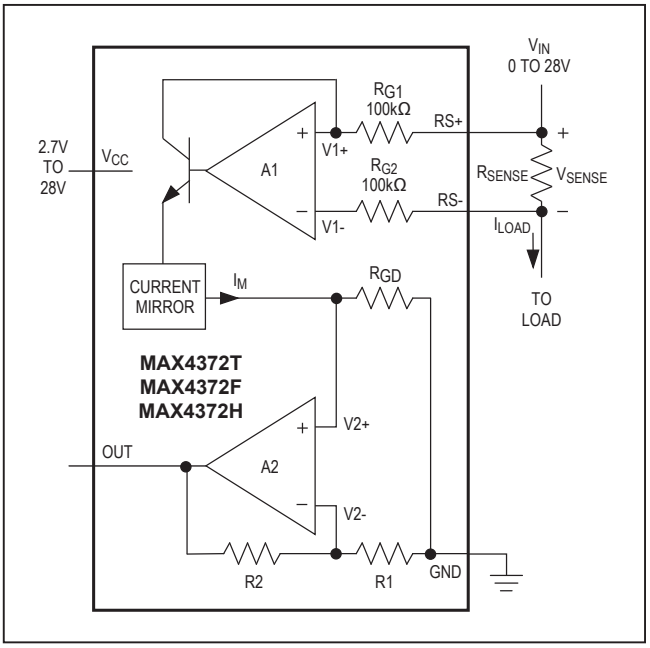



*Figure 1. Functional Diagram*

## Applications Information

### Recommended Component Values

The MAX4372 operates over a wide variety of current ranges with different sense resistors. Table 1 lists common resistor values for typical operation of the MAX4372.

### Choosing $R_{SENSE}$

Given the gain and maximum load current, select $R_{SENSE}$ such that $V_{OUT}$ does not exceed $V_{CC}$ - 0.25V or 10V. To measure lower currents more accurately, use a high value for $R_{SENSE}$. A higher value develops a higher sense voltage, which overcomes offset voltage errors of the internal current amplifier.

In applications monitoring very high current, ensure $R_{SENSE}$ is able to dissipate its own $I^2R$ losses. If the resistor's rated power dissipation is exceeded, its value may drift or it may fail altogether, causing a differential voltage across the terminals in excess of the absolute maximum ratings.

## Table 1. Recommended Component Values

| FULL-SCALE LOAD CURRENT, $I_{LOAD}$ (A) | CURRENT-SENSE RESISTOR, $R_{SENSE}$ (mΩ) | GAIN (V/V) | FULL-SCALE OUTPUT VOLTAGE (FULL-SCALE $V_{SENSE}$ = 100mV), $V_{OUT}$ (V) |
|---|---|---|---|
| 0.1 | 1000 | 20 | 2.0 |
| | | 50 | 5.0 |
| | | 100 | 10.0 |
| 1 | 100 | 20 | 2.0 |
| | | 50 | 5.0 |
| | | 100 | 10.0 |
| 5 | 20 | 20 | 2.0 |
| | | 50 | 5.0 |
| | | 100 | 10.0 |
| 10 | 10 | 20 | 2.0 |
| | | 50 | 5.0 |
| | | 100 | 10.0 |

### Using a PC Board Trace as $R_{SENSE}$

If the cost of $R_{SENSE}$ is an issue and accuracy is not critical, use the alternative solution shown in Figure 2. This solution uses copper PC board traces to create a sense resistor. The resistivity of a 0.1in wide trace of 2oz copper is about 30mΩ/ft. The resistance temperature coefficient of copper is fairly high (approximately 0.4%/°C), so systems that experience a wide temperature variance must compensate for this effect. In addition, self-heating introduces a nonlinearity error. Do not exceed the maximum power dissipation of the copper trace.

For example, the MAX4372T (with a maximum load current of 10A and an $R_{SENSE}$ of 5mΩ) creates a full-scale $V_{SENSE}$ of 50mV that yields a maximum $V_{OUT}$ of 1V. $R_{SENSE}$, in this case, requires about 2in of 0.1in wide copper trace.

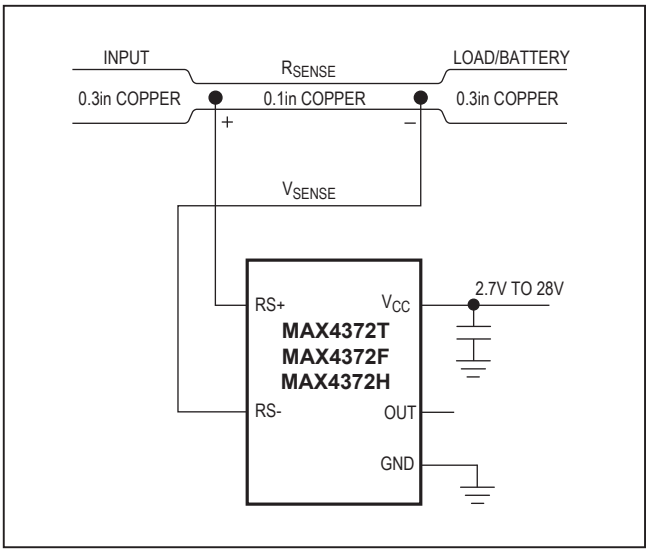



*Figure 2. Connections Showing Use of PC Board*

## UCSP Applications Information

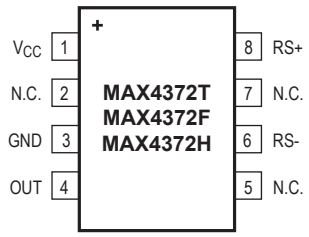
For the latest application details on UCSP construction, dimensions, tape carrier information, printed circuit board techniques, bump-pad layout, and recommended reflow temperature profile, as well as the latest information on reliability testing results, go to the Maxim's website at www.maxim-ic.com/ucsp to find the Application Note: *UCSP—A Wafer-Level Chip-Scale Package*.

## Ordering Information (continued)

| PART | TEMP RANGE | PIN-PACKAGE | TOP MARK |
|---|---|---|---|
| **MAX4372F**EUK+T | -40°C to +85°C | 5 SOT23 | ADIV |
| MAX4372FESA+ | -40°C to +85°C | 8 SO | — |
| MAX4372FEBT+T | -40°C to +85°C | 3 x 2 UCSP | ACX |
| **MAX4372H**EUK+T | -40°C to +85°C | 5 SOT23 | ADIW |
| MAX4372HESA+ | -40°C to +85°C | 8 SO | — |
| MAX4372HEBT+T | -40°C to +85°C | 3 x 2 UCSP | ACZ |

*+Denotes lead(Pb)-free/RoHS-compliant package.*
*T = Tape and reel.*

## Pin Configurations (continued)




**SO**

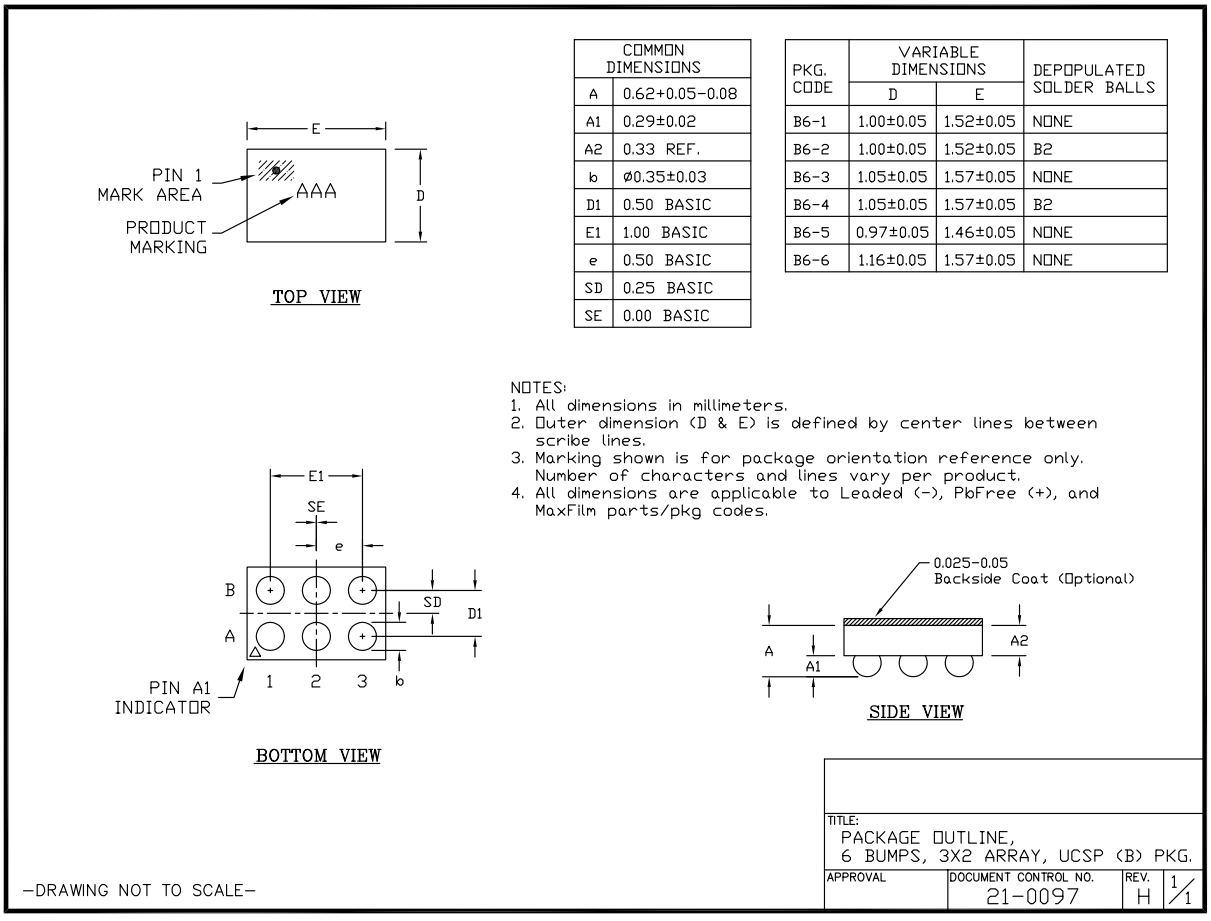
## Chip Information

PROCESS: BiCMOS

## Package Information

For the latest package outline information and land patterns (footprints), go to **www.maximintegrated.com/packages**. Note that a "+", "#", or "-" in the package code indicates RoHS status only. Package drawings may show a different suffix character, but the drawing pertains to the package regardless of RoHS status.

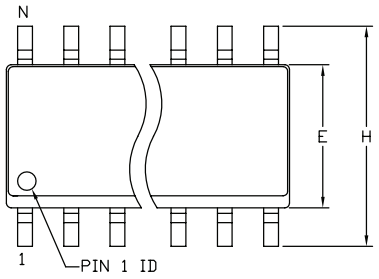
| PACKAGE TYPE | PACKAGE CODE | OUTLINE NO. | LAND PATTERN NO. |
|---|---|---|---|
| 5 SOT23 | U5+1 | 21-0057 | 90-0174 |
| 8 SO | S8+2 | 21-0041 | 90-0096 |
| 5 UCSP | B6+2 | 21-0097 | — |



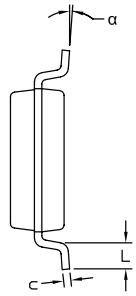

***Note:*** *MAX4372_EBT uses package code B6-2.*

## Package Information (continued)

For the latest package outline information and land patterns (footprints), go to **www.maximintegrated.com/packages**. Note that a "+", "#", or "-" in the package code indicates RoHS status only. Package drawings may show a different suffix character, but the drawing pertains to the package regardless of RoHS status.




TOP VIEW



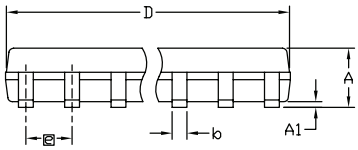

END VIEW

| COMMON DIMENSIONS | | | | |
|---|---|---|---|---|
| SYMBOL | INCHES | | MM | |
| | MIN. | MAX. | MIN. | MAX. |
| A | .053 | .069 | 1.35 | 1.75 |
| A1 | .004 | .010 | 0.10 | 0.25 |
| b | .014 | .019 | 0.35 | 0.49 |
| c | .007 | .010 | 0.19 | 0.25 |
| E | .150 | .157 | 3.80 | 4.00 |
| e | .050 BSC | | 1.27 BSC | |
| H | .228 | .244 | 5.80 | 6.20 |
| L | .016 | .050 | 0.40 | 1.27 |
| α | 0° | 8° | 0° | 8° |

| VARIATION A | | | | |
|---|---|---|---|---|
| SYMBOL | INCHES | | MM | |
| | MIN. | MAX. | MIN. | MAX. |
| D | .189 | .197 | 4.80 | 5.00 |
| N | 8 | | | |
| MS012 | AA | | | |
| PKG. CODE | S8-2, S8-4, S8-5, S8-6F, S8-7F, S8-8F, S8-10F, S8-11F, S8-16F | | | |

| VARIATION B | | | | |
|---|---|---|---|---|
| SYMBOL | INCHES | | MM | |
| | MIN. | MAX. | MIN. | MAX. |
| D | .337 | .344 | 8.55 | 8.75 |
| N | 14 | | | |
| MS012 | AB | | | |
| PKG. CODE | S14-1, S14-4, S14-5, S14-6; S14M-4, S14M-5, S14M-6, S14M-7 | | | |

| VARIATION C | | | | |
|---|---|---|---|---|
| SYMBOL | INCHES | | MM | |
| | MIN. | MAX. | MIN. | MAX. |
| D | .386 | .394 | 9.80 | 10.00 |
| N | 16 | | | |
| MS012 | AC | | | |
| PKG. CODE | S16-1, S16-3, S16-5, S16-6, S16-8, S16-7F, S16-9F, S16-10F; S16M-3, S16M-6 | | | |




SIDE VIEW

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. MATERIAL MUST COMPLY WITH BANNED AND RESTRICTED SUBSTANCES SPEC # 10-0131.
3. DIMENSIONS D AND E DO NOT INCLUDE MOLD PROTRUSION. ALLOWABLE MOLD PROTRUSION IS 0.15 MM (.006") PER SIDE.
4. LEADS TO BE COPLANAR WITHIN 0.10mm (.004").
5. MEETS JEDEC MS012
6. ALL DIMENSIONS APPLY TO BOTH LEADED (-) AND PbFREE (+) PKG. CODES.

-DRAWING NOT TO SCALE-

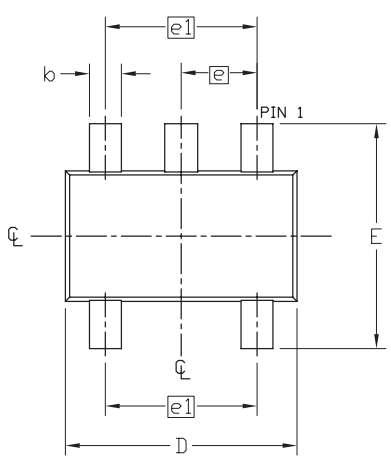
maxim integrated

TITLE:
PACKAGE OUTLINE,
8L, 14L, 16L SOIC .150 INCH

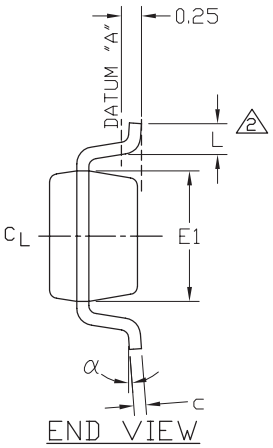
| APPROVAL | DOCUMENT CONTROL NO. | REV. | |
|---|---|---|---|
| | 21-0041 | C | 1/1 |

## Package Information (continued)

For the latest package outline information and land patterns (footprints), go to **www.maximintegrated.com/packages**. Note that a "+", "#", or "-" in the package code indicates RoHS status only. Package drawings may show a different suffix character, but the drawing pertains to the package regardless of RoHS status.

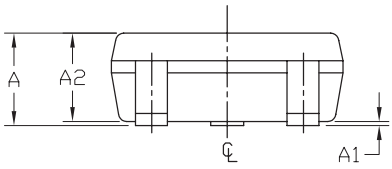



TOP VIEW




END VIEW

| SYMBOL | MIN | NOM | MAX |
|---|---|---|---|
| A | 0.90 | 1.25 | 1.45 |
| A1 | 0.00 | 0.05 | 0.15 |
| A2 | 0.90 | 1.10 | 1.30 |
| b | 0.35 | 0.40 | 0.50 |
| c | 0.08 | 0.15 | 0.20 |
| D | 2.80 | 2.90 | 3.00 |
| E | 2.60 | 2.80 | 3.00 |
| E1 | 1.50 | 1.625 | 1.75 |
| L | 0.35 | 0.45 | 0.60 |
| L1 | 0.60 REF | | |
| e | 0.95 BSC. | | |
| e1 | 1.90 BSC. | | |
| α | 0° | 2.5° | 8° |




SIDE VIEW

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. FOOT LENGTH MEASURED AT INTERCEPT POINT BETWEEN DATUM A & LEAD SURFACE.
3. PACKAGE OUTLINE EXCLUSIVE OF MOLD FLASH & METAL BURR. MOLD FLASH, PROTRUSION OR METAL BURR SHOULD NOT EXCEED 0.25 MM.
4. MEETS JEDEC MO178, VARIATION AA.
5. LEADS TO BE COPLANAR WITHIN 0.10 mm.
6. SOLDER THICKNESS MEASURED AT FLAT SECTION OF LEAD BETWEEN 0.08mm AND 0.15mm FROM LEAD TIP.
7. MATERIAL MUST COMPLY WITH BANNED AND RESTRICTED SUBSTANCES SPEC # 10-0131.
8. ALL DIMENSIONS APPLY TO BOTH LEADED (-) AND LEAD FREE (+) PACKAGE CODES.
9. PKG CODES: U5-1, U5-2

| | | | |
|---|---|---|---|
| TITLE: PACKAGE OUTLINE, 5L SOT23 | | | |
| APPROVAL | DOCUMENT CONTROL NO. 21-0057 | REV. G | 1/1 |

-DRAWING NOT TO SCALE-

## Revision History

| REVISION NUMBER | REVISION DATE | DESCRIPTION | PAGES CHANGED |
|---|---|---|---|
| 4 | 7/09 | Updated feature in accordance with actual performance of the product | 1 |
| 5 | 5/11 | Updated $V_{RST}$ conditions to synchronize with tested material and added lead-free designation | 1–3, 8 |

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Maxim Integrated:

MAX4372FEUK+T MAX4372TEUK+T MAX4372FESA MAX4372FESA+ MAX4372FESA+T MAX4372FEUK-T MAX4372HESA MAX4372HESA+ MAX4372HESA+T MAX4372HEUK+T MAX4372TEBT+T MAX4372TESA+ MAX4372TESA+T MAX4372TEUK-T MAX4372FEBT+T MAX4372FESA-T MAX4372HESA-T MAX4372HEBT+TG45 MAX4372HEUK-TG05 MAX4372TEBT+TG45 MAX4372HEBT+T MAX4372HEUK-T MAX4372TEUK MAX4372HEBT+ MAX4372HEUK