## Absolute Maximum Ratings

OUT, LX, SHDN, LBI, LBO, BATT to GND..............-0.3V to +6V
FB.......................................................-0.3V to ($V_{OUT}$ + 0.3V)
$I_{LX}$, $I_{OUT}$..........................................................±1.5A
Output Short-Circuit Duration.................................................. 5s
Continuous Power Dissipation
  8-Pin µMAX (derate 4.1mW/°C above +70°C)............330mW

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

($V_{BATT}$ = +2V, OUT = FB ($V_{OUT}$ = +3.3V), SHDN = LBI = GND, **$T_A$ = 0°C to +85°C**, unless otherwise noted. Typical values are at $T_A$ = +25°C.)

| PARAMETER | SYMBOL | CONDITIONS | | MIN | TYP | MAX | UNITS |
|---|---|---|---|---|---|---|---|
| Minimum Input Voltage | | After startup | | | 0.7 | | V |
| Operating Voltage | $V_{BATT}$ | (Note 1) | | 1.0 | | 5.5 | V |
| Startup Voltage | | $T_A$ = +25°C, $R_L$ = 3kΩ | | | 0.85 | 1.0 | V |
| Startup Voltage Tempco | | | | | -2.2 | | mV/°C |
| Output Voltage | $V_{OUT}$ | FB = OUT | | 3.17 | 3.3 | 3.43 | V |
| | | FB = GND | | 4.80 | 5.0 | 5.20 | |
| Adjustable Output Voltage Range | | | | 2.0 | | 5.5 | V |
| Steady-State Output Current | $I_{OUT}$ | BATT = +2V, FB = OUT ($V_{OUT}$ = +3.3V) | MAX1795 | 100 | 180 | | mA |
| | | | MAX1796 | 200 | 300 | | |
| | | | MAX1797 | 400 | 550 | | |
| | | BATT = +2V, FB = GND ($V_{OUT}$ = +5.0V) | MAX1795 | 50 | 120 | | |
| | | | MAX1796 | 100 | 200 | | |
| | | | MAX1797 | 250 | 370 | | |
| Feedback Set-Point Voltage (Adjustable Mode) | $V_{FB}$ | $V_{OUT}$ = +2V to +5.5V | | 1.20 | 1.24 | 1.28 | V |
| Feedback Input Current | $I_{FB}$ | $V_{FB}$ = +1.24V | | | 4 | 100 | nA |
| Internal NFET, PFET On-Resistance | $R_{DS(ON)}$ | $V_{OUT}$ = +3.3V, $I_{LX}$ = 100mA | NFET | | 0.17 | 0.3 | Ω |
| | | | PFET | | 0.27 | 0.45 | |
| LX Switch Current Limit (NFET only) | $I_{LIM}$ | MAX1795 | | 0.2 | 0.25 | 0.35 | A |
| | | MAX1796 | | 0.4 | 0.5 | 0.625 | |
| | | MAX1797 | | 0.8 | 1.0 | 1.25 | |
| LX Leakage Current | $I_{LEAK}$ | $V_{LX}$ = 0 and +5.5V, $V_{OUT}$ = +5.5V | | | 0.2 | | µA |
| Synchronous Rectifier Turn-Off Current Limit | | | | | 25 | | mA |
| Damping Switch On-Resistance | $R_{DAMP}$ | | | 100 | 200 | 400 | Ω |
| Operating Current into OUT (Note 2) | | $V_{FB}$ = +1.4V | | | 25 | 45 | µA |

## Electrical Characteristics (continued)

($V_{BATT}$ = +2V, OUT = FB ($V_{OUT}$ = +3.3V), SHDN = LBI = GND, **$T_A$ = 0°C to +85°C**, unless otherwise noted. Typical values are at $T_A$ = +25°C.)

| PARAMETER | SYMBOL | CONDITIONS | MIN | TYP | MAX | UNITS |
|---|---|---|---|---|---|---|
| Operating Current into BATT | | $V_{FB}$ = +1.4V, $V_{LBI}$ = +1V | | 2 | 4 | µA |
| Shutdown Current into BATT | | SHDN = BATT, $V_{LBI}$ = +1V | | 2 | 4 | µA |
| LX Switch MaxImum On-Time | $t_{ON}$ | $V_{FB}$ = +1V, if current limit not reached | 3 | 4 | 5 | µs |
| LX Switch Minimum Off-Time | $t_{OFF}$ | $V_{FB}$ = +1V | 0.8 | 1 | 1.2 | µs |
| LBI Threshold Voltage Falling | $V_{LBI}$ | $V_{BATT}$ = +2V | 0.8 | 0.85 | 0.90 | V |
| | | $V_{BATT}$ = LBI | 0.875 | 0.925 | 0.975 | |
| LBI Hysteresis | | | | 25 | | mV |
| LBI Input Current | $I_{LBI}$ | $V_{LBI}$ = +0.8V | | 9 | 100 | nA |
| LBO Low Output Voltage | | $V_{BATT}$ = $V_{LBI}$ = +0.975V, sinking 20µA (50Ω typ) | | | 0.1 | V |
| | | $V_{BATT}$ = $V_{LBI}$ = +1.1V, sinking 100µA (25Ω typ) | | | 0.1 | |
| LBO Off-Leakage Current | | $V_{LBO}$ = +5.5V | | 1 | 100 | nA |
| SHDN Input Voltage | $V_{IL}$ | | | | 0.2 x $V_{BATT}$ | V |
| | $V_{IH}$ | | 0.8 x $V_{BATT}$ | | | |
| Shutdown Input Current | | $V_{SHDN}$ = 0 and +5.5V | | | 100 | nA |

## Electrical Characteristics

($V_{BATT}$ = +2V, OUT = FB ($V_{OUT}$ = +3.3V), SHDN = LBI = GND, **$T_A$ = -40°C to +85°C**, unless otherwise noted.) (Note 3)

| PARAMETER | SYMBOL | CONDITIONS | | MIN | MAX | UNITS |
|---|---|---|---|---|---|---|
| Operating Voltage | $V_{BATT}$ | Note 1 | | 1.0 | 5.5 | V |
| Output Voltage | $V_{OUT}$ | FB = OUT | | 3.13 | 3.47 | V |
| | | FB = GND | | 4.75 | 5.25 | |
| Adjustable Output Voltage Range | | | | 2.0 | 5.5 | V |
| Steady-State Output Current (Note 1) | $I_{OUT}$ | FB = OUT ($V_{OUT}$ = +3.3V) | MAX1795 | 100 | | mA |
| | | | MAX1796 | 200 | | |
| | | | MAX1797 | 400 | | |
| | | FB = GND ($V_{OUT}$ = +5.0V) | MAX1795 | 60 | | |
| | | | MAX1796 | 125 | | |
| | | | MAX1797 | 250 | | |
| Feedback Set-Point Voltage (Adjustable Mode) | $V_{FB}$ | $V_{OUT}$ = +2V to +5.5V | | 1.19 | 1.29 | V |
| Feedback Input Current | $I_{FB}$ | $V_{FB}$ = +1.25V | | | 100 | nA |

## Electrical Characteristics (continued)

($V_{BATT}$ = +2V, OUT = FB ($V_{OUT}$ = +3.3V), SHDN = LBI = GND, **$T_A$ = -40°C to +85°C**, unless otherwise noted.) (Note 3)

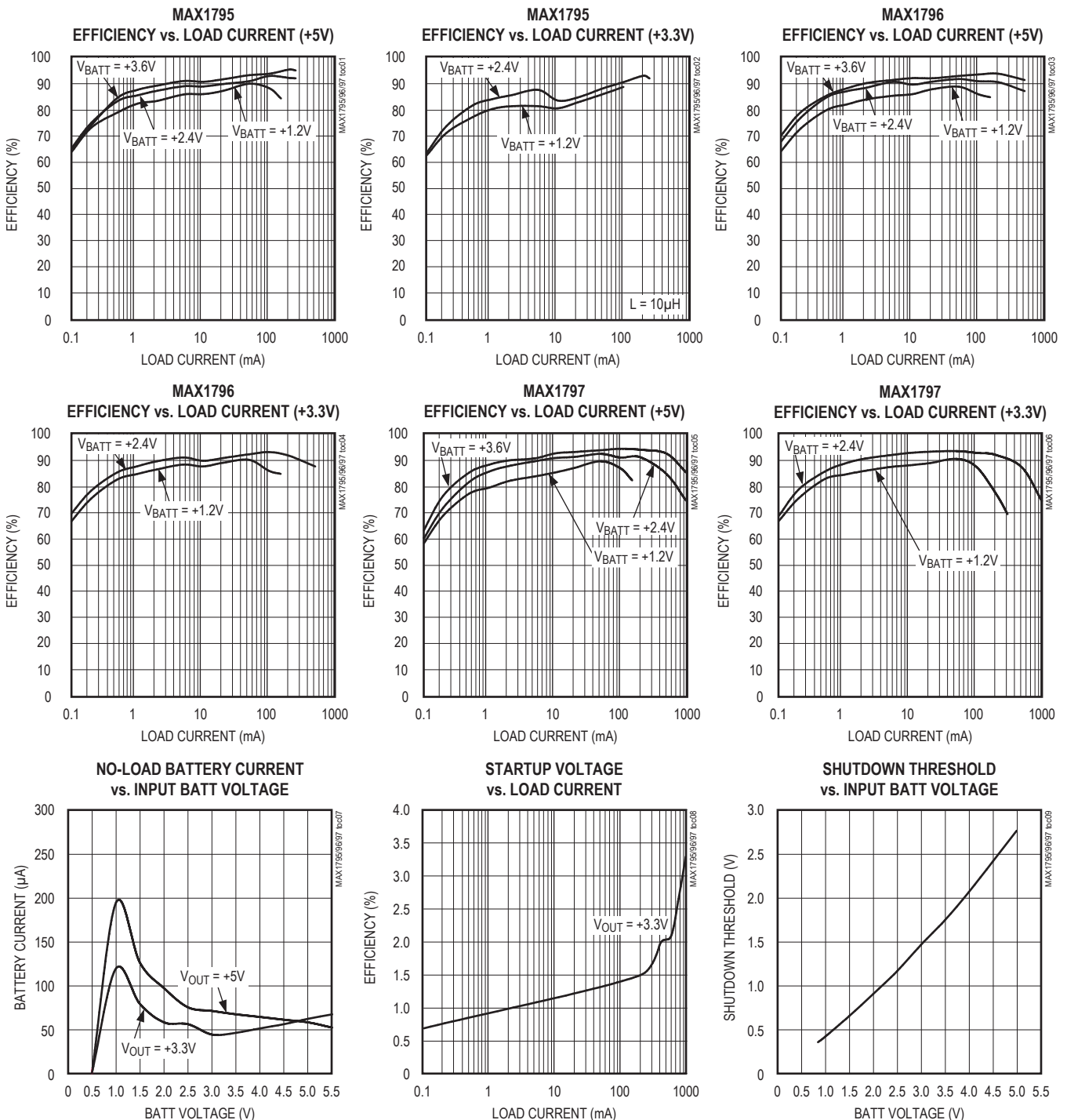| PARAMETER | SYMBOL | CONDITIONS | | MIN | MAX | UNITS |
|---|---|---|---|---|---|---|
| Internal NFET, PFET On-Resistance | $R_{DS(ON)}$ | $V_{OUT}$ = +3.3V, $I_{LX}$ = 100mA | NFET | | 0.3 | Ω |
| | | | PFET | | 0.45 | |
| LX Switch Current Limit (NFET only) | $I_{LIM}$ | MAX1795 | | 0.19 | 0.37 | A |
| | | MAX1796 | | 0.35 | 0.7 | |
| | | MAX1797 | | 0.8 | 1.32 | |
| LX Leakage Current | $I_{LEAK}$ | $V_{LX}$ = 0 and +5.5V, $V_{OUT}$ = +5.5V | | | | µA |
| Damping Switch On-Resistance | $R_{DAMP}$ | | | 100 | 400 | Ω |
| Operating Current into OUT (Note 2) | | $V_{FB}$ = +1.4V | | | 45 | µA |
| Operating Current into BATT | | $V_{FB}$ = +1.4V, $V_{LBI}$ = +1V | | | 4 | µA |
| Shutdown Current into BATT | | SHDN = BATT, $V_{LBI}$ = +1V | | | 4 | µA |
| LX Switch Maximum On-Time | $t_{ON}$ | $V_{FB}$ = +1V, if current limit not reached | | 2.75 | 5.25 | µs |
| LX Switch Minimum Off-Time | $t_{OFF}$ | $V_{FB}$ = +1V | | 0.7 | 1.3 | µs |
| LBI Threshold Voltage | $V_{LBI}$ | $V_{BATT}$ = +2V | | 0.8 | 0.90 | V |
| | | $V_{BATT}$ = LBI | | 0.875 | 0.975 | |
| LBI Input Current | $I_{LBI}$ | $V_{LBI}$ = +0.8V | | | 100 | nA |
| LBO Low Output Voltage | | $V_{BATT}$ = $V_{LBI}$ = +0.975V, sinking 20µA (50Ω typ) | | | 0.1 | V |
| | | $V_{BATT}$ = $V_{LBI}$ = +1.1V, sinking 100µA (25Ω typ) | | | 0.1 | |
| LBO Off-Leakage Current | | $V_{LBO}$ = +5.5V | | | 100 | nA |
| SHDN Input Voltage | $V_{IL}$ | | | | 0.2 x $V_{BATT}$ | V |
| | $V_{IH}$ | | | 0.8 x $V_{BATT}$ | | |
| Shutdown Input Current | | $V_{SHDN}$ = 0 and +5.5V | | | 100 | nA |

**Note 1:** Operating Voltage: Since the regulator is bootstrapped to the output, once started it will operate down to a 0.7V input.
**Note 2:** Device is bootstrapped (power to IC comes from OUT). This correlates directly with the actual battery supply current.
**Note 3:** Specifications to -40°C are guaranteed by design, not production tested.

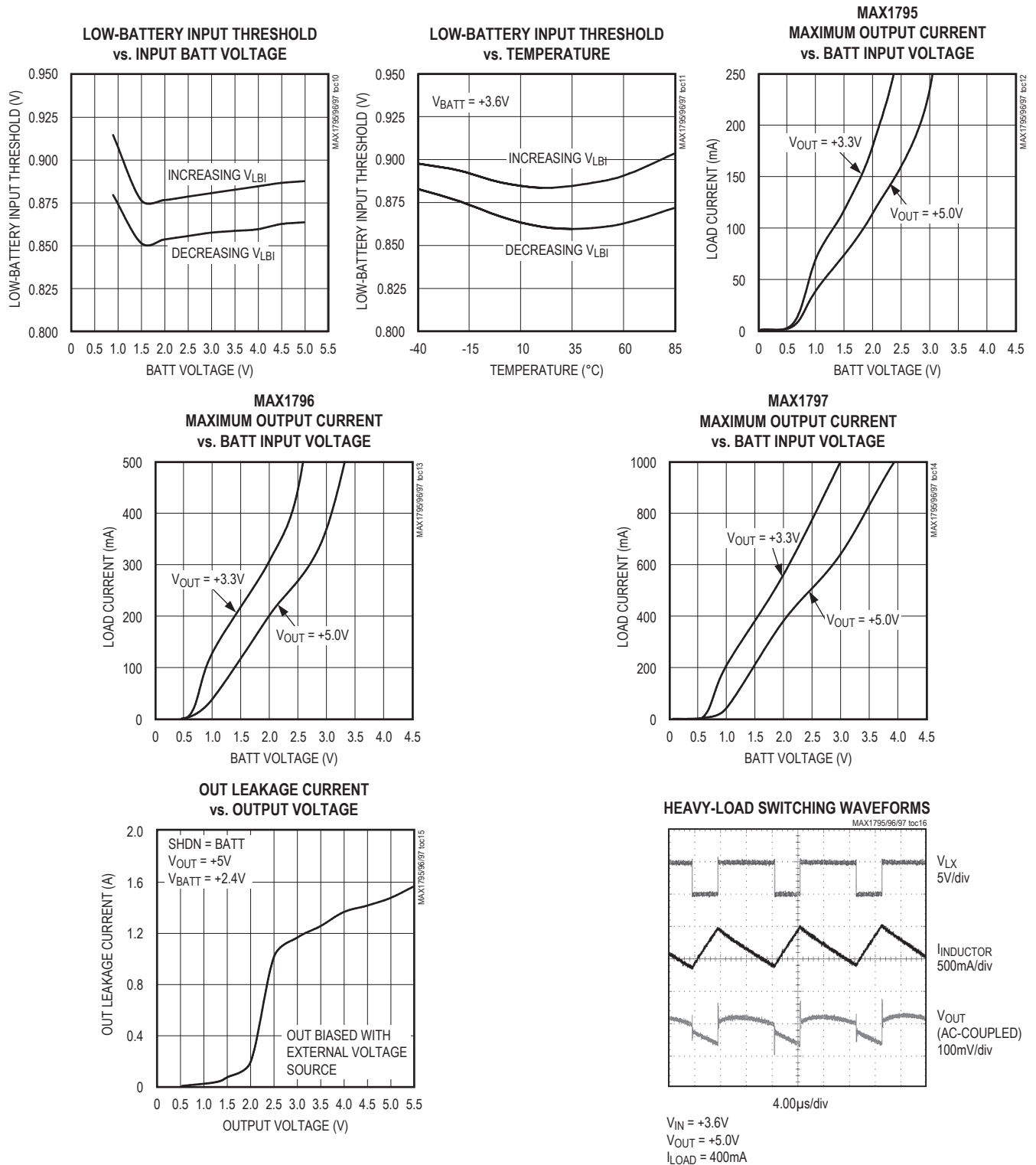Low-Supply Current, Step-Up DC-DC Converters
with True Shutdown

## Typical Operating Characteristics

(L = 22µH, $C_{IN}$ = 47µF, $C_{OUT}$ = 47µF, $T_A$ = +25°C, unless otherwise noted.)

**MAX1795**
**EFFICIENCY vs. LOAD CURRENT (+5V)**

**MAX1795**
**EFFICIENCY vs. LOAD CURRENT (+3.3V)**

**MAX1796**
**EFFICIENCY vs. LOAD CURRENT (+5V)**

**MAX1796**
**EFFICIENCY vs. LOAD CURRENT (+3.3V)**

**MAX1797**
**EFFICIENCY vs. LOAD CURRENT (+5V)**

**MAX1797**
**EFFICIENCY vs. LOAD CURRENT (+3.3V)**

**NO-LOAD BATTERY CURRENT
vs. INPUT BATT VOLTAGE**

**STARTUP VOLTAGE
vs. LOAD CURRENT**

**SHUTDOWN THRESHOLD
vs. INPUT BATT VOLTAGE**

## Typical Operating Characteristics (continued)

(L = 22µH, $C_{IN}$ = 47µF, $C_{OUT}$ = 47µF, $T_A$ = +25°C, unless otherwise noted.)

**LOW-BATTERY INPUT THRESHOLD
vs. INPUT BATT VOLTAGE**

**LOW-BATTERY INPUT THRESHOLD
vs. TEMPERATURE**

**MAX1795
MAXIMUM OUTPUT CURRENT
vs. BATT INPUT VOLTAGE**

**MAX1796
MAXIMUM OUTPUT CURRENT
vs. BATT INPUT VOLTAGE**

**MAX1797
MAXIMUM OUTPUT CURRENT
vs. BATT INPUT VOLTAGE**

**OUT LEAKAGE CURRENT
vs. OUTPUT VOLTAGE**

**HEAVY-LOAD SWITCHING WAVEFORMS**

$V_{IN}$ = +3.6V
$V_{OUT}$ = +5.0V
$I_{LOAD}$ = 400mA

## Typical Operating Characteristics (continued)

(L = 22µH, $C_{IN}$ = 47µF, $C_{OUT}$ = 47µF, $T_A$ = +25°C, unless otherwise noted.)

**LIGHT-LOAD SWITCHING WAVEFORMS**

MAX1795/96/97 toc17

$V_{LX}$
5V/div

$I_{INDUCTOR}$
500mA/div

$V_{OUT}$
(AC-COUPLED)
100mV/div
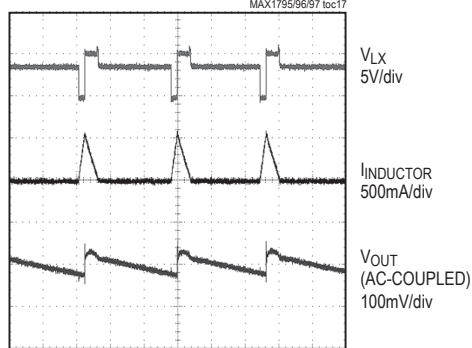
20µs/div

$V_{BATT}$ = +3.6V
$V_{OUT}$ = +5.0V
$I_{LOAD}$ = 40mA

**LINE-TRANSIENT RESPONSE**

MAX1795/96/97 toc18

$V_{BATT}$
+2.7V TO +3V

$V_{OUT}$
(AC-COUPLED)
20mV/div
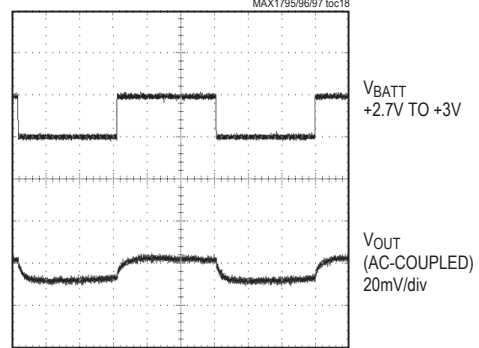
10µs/div

$V_{BATT}$ = +2.7V TO +3V
$V_{OUT}$ = +5.0V
NO LOAD

**LOAD-TRANSIENT RESPONSE**

MAX1795/96/97 toc19

$I_{OUT}$
100mA/div
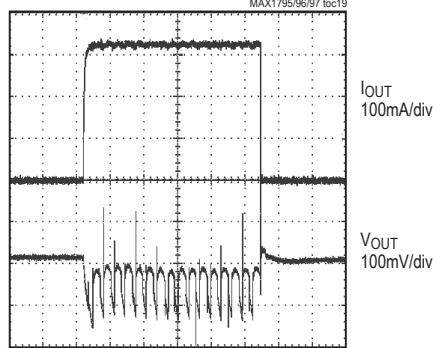
$V_{OUT}$
100mV/div

40µs/div

$V_{BATT}$ = +2.4V
$V_{OUT}$ = +3.3V
$I_{LOAD}$ = 0 TO 325mA

**STARTUP-SHUTDOWN WAVEFORMS**

MAX1795/96/97 toc20

$V_{SHDN}$
5V/div

$V_{OUT}$
2V/div

$I_{INDUCTOR}$
500mA/div
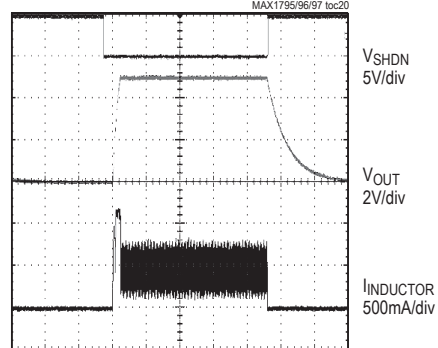
2ms/div

$V_{BATT}$ = +2.4V
$V_{OUT}$ = +5.0V
$I_{LOAD}$ = 200mA

## Pin Description

| PIN | NAME | FUNCTION |
|---|---|---|
| 1 | LBI | Low-Battery Comparator Input. Internally set to trip at +0.85V. This function remains operational in shutdown. |
| 2 | FB | Dual-Mode™ Feedback Input. Connect to GND for preset 5.0V output. Connect to OUT for preset 3.3V output. Connect a resistive voltage-divider from OUT to GND to adjust the output voltage from 2V to 5.5V. |
| 3 | LBO | Low-Battery Comparator Output, Open-Drain Output. LBO is high impedance when $V_{LBI}$ < 0.85V. This function remains operational in shutdown. |
| 4 | SHDN | Shutdown Input. If SHDN is high, the device is in shutdown mode, OUT is high impedance, and LBI/LBO are still operational. Connect shutdown to GND for normal operation. |
| 5 | GND | Ground |
| 6 | LX | Inductor Connection |
| 7 | OUT | Power Output. OUT provides bootstrap power to the IC. |
| 8 | BATT | Battery Input and Damping Switch Connection |

## Detailed Description

The MAX1795/MAX1796/MAX1797 compact step-up DC-DC converters start up with voltages as low as 0.85V and operate with an input voltage down to +0.7V. Consuming only 25µA of quiescent current, these devices have an internal synchronous rectifier that reduces cost by eliminating the need for an external diode and improves overall efficiency by minimizing losses in the circuit (see *Synchronous Rectification* section for details). The internal N-channel MOSFET power switch resistance is typically 0.17Ω, which minimizes losses. The LX switch current limits of the MAX1795/MAX1796/MAX1797 are 0.25A, 0.5A, and 1A, respectively.

All three devices offer Maxim's proprietary True Shutdown circuitry, which disconnects the output from the input in shutdown and puts the output in a high impedance state. These devices also feature Maxim's proprietary LX-damping circuitry, which reduces EMI in noise-sensitive applications. For additional in-system flexibility, the LBI/LBO comparator remains active in shutdown. [Figure 1](#) is a typical application circuit.

## Control Scheme

A unique minimum-off-time, current-limited control scheme is the key to the MAX1795/MAX1796/MAX1797s' low operating current and high efficiency over a wide load range. The architecture combines the high output power and efficiency of a pulse-width-modulation (PWM) device with the ultra-low quiescent current of a traditional

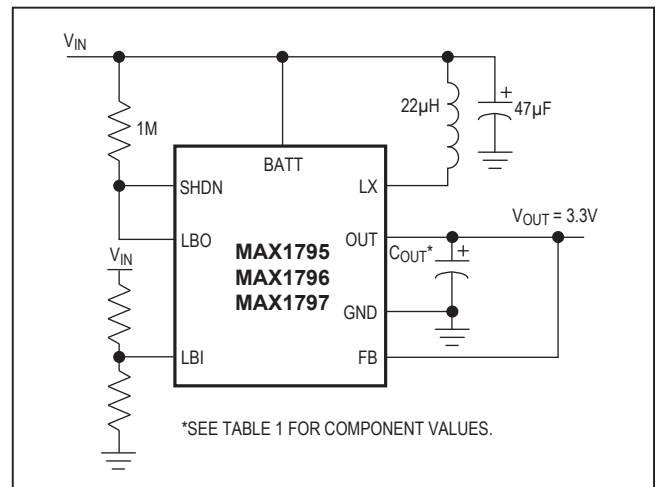*Dual Mode is a trademark of Maxim Integrated Products.*



Figure 1. Typical Application Circuit

pulse-skipping controller ([Figure 2](#)). Switching frequency depends upon the load current and input voltage, and can range up to 500kHz. Unlike conventional pulse-skipping DC-DC converters (where ripple amplitude varies with input voltage), ripple in these devices does not exceed the product of the switch current limit and the filter-capacitor equivalent series resistance (ESR).
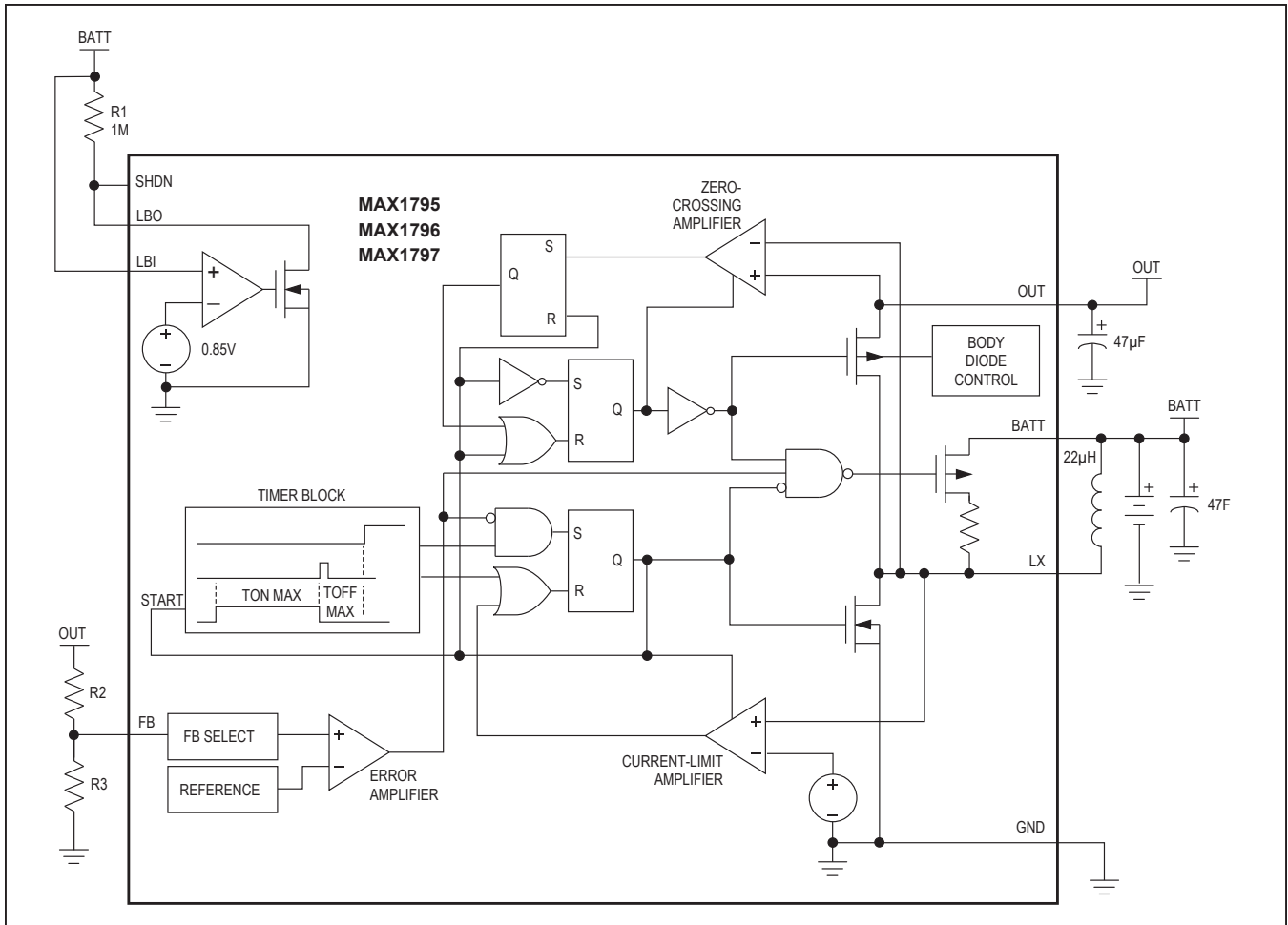
*Figure 2. Functional Diagram*

## Synchronous Rectification

The internal synchronous rectifier eliminates the need for an external Schottky diode, reducing cost and board space. During the cycle off-time, the P-channel MOSFET turns on and shunts the MOSFET body diode. As a result, the synchronous rectifier significantly improves efficiency without the addition of an external component. Conversion efficiency can be as high as 95%, as shown in the *Typical Operating Characteristics* section.

## Shutdown

The device enters shutdown when $V_{SHDN}$ is high, reducing supply current to less than 2µA. During shutdown, the synchronous rectifier disconnects the output from the input, eliminating the DC conduction path that normally exists with traditional boost converters in shutdown mode. In shutdown, OUT becomes a high-impedance node. The LBI/LBO comparator remains active in shutdown.

As shown in Figure 1, the MAX1795/MAX1796/MAX1797 can be automatically shut down when the input voltage drops below a preset threshold by connecting LBO to SHDN (see the *Low-Battery Detection* section).

## BATT/Damping Switch

The MAX1795/MAX1796/MAX1797 each contain an internal damping switch to minimize ringing at LX. The damping switch connects a resistor across the inductor when the inductor's energy is depleted (Figure 3). Normally, when the energy in the inductor is insufficient to supply current to the output, the capacitance and inductance at LX form a resonant circuit that causes ringing. The ringing continues until the energy is dissipated through the series resistance of the inductor. The damping switch supplies a
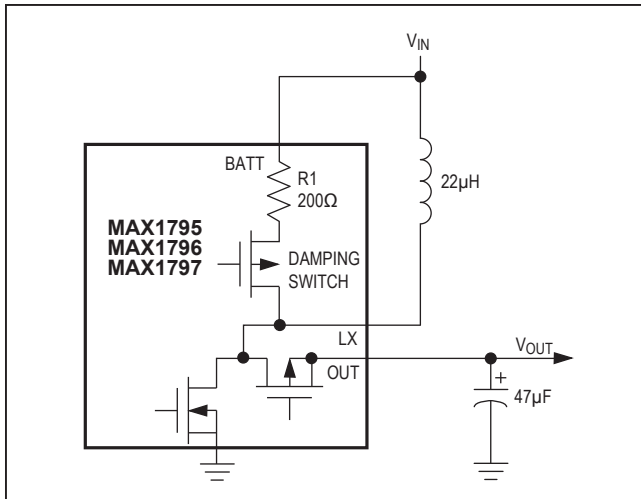
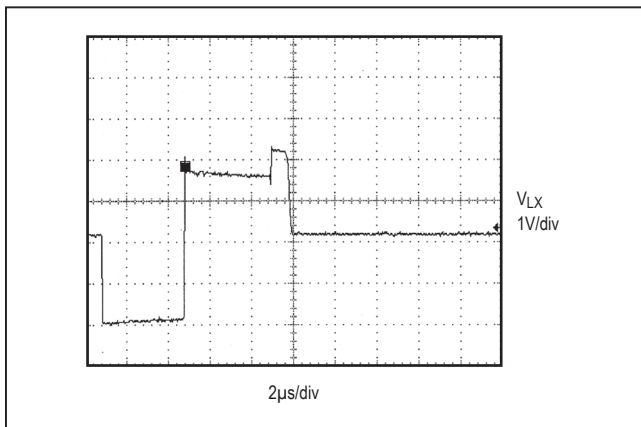*Figure 3. Simplified Diagram of Inductor Damping Switch*



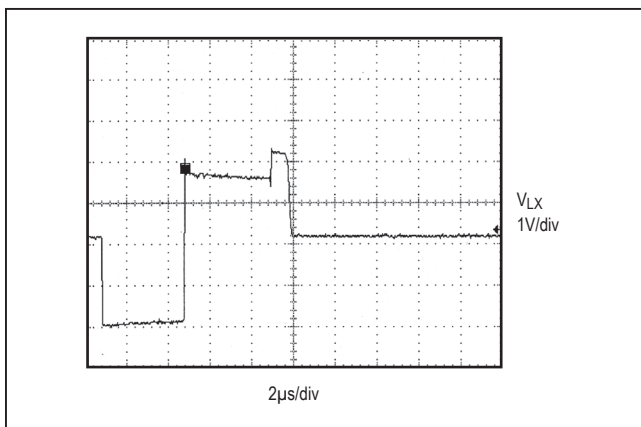*Figure 4. LX Ringing for Conventional Step-Up Converter (without Damping Switch)*



*Figure 5. LX Waveform with Damping Switch*

path to quickly dissipate this energy, minimizing the ringing at LX. Damping LX ringing does not reduce $V_{OUT}$ ripple, but does reduce EMI (Figure 3, Figure 4, and Figure 5).

## Setting the Output Voltage

$V_{OUT}$ can be set to 3.3V or 5.0V by connecting the FB pin to GND (5V) or OUT (3.3V). To adjust the output voltage, connect a resistive voltage-divider from OUT to FB to GND (Figure 6). Choose a value less than 250kΩ for R2.
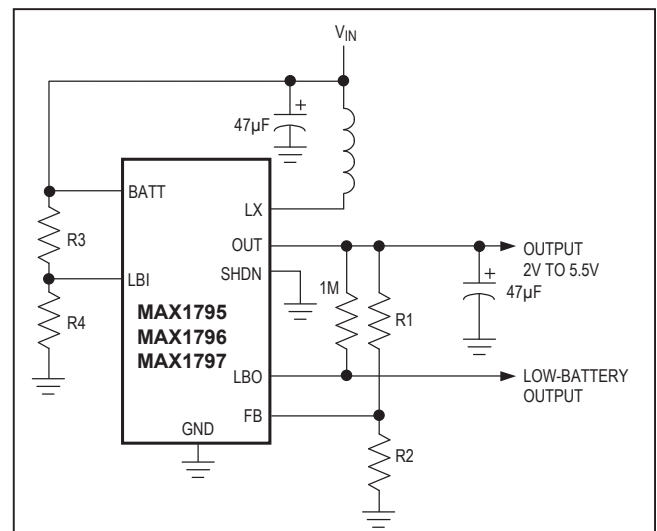


*Figure 6. Setting an Adjustable Output*

Use the following equation to calculate R1:

$$R1 = R2 [(V_{OUT}/V_{FB}) - 1]$$

where $V_{FB}$ = +1.245V, and $V_{OUT}$ can range from +2V to +5.5V.

## Low-Battery Detection

The MAX1795/MAX1796/MAX1797 each contain an on-chip comparator for low-battery detection. If the voltage at LBI is above 0.85V, LBO (an open-drain output) sinks current to GND. If the voltage at LBI is below 0.85V, LBO goes high impedance. The LBI/LBO function remains active even when the part is in shutdown.

Connect a resistive voltage-divider to LBI from BATT to GND. The low-battery monitor threshold is set by two resistors, R3 and R4 (Figure 6). Since the LBI bias current is typically 2nA, large resistor values (R4 up to 250kΩ) can be used to minimize loading of the input supply.

Calculate R3 using the following equation:

$$R3 = R4[(V_{TRIP}/0.85V) - 1]$$

$V_{TRIP}$ is the input voltage where the low-battery detector output goes high impedance.

For single-cell applications, LBI may be connected to the battery. When $V_{BATT}$ <1.0V>, the LBI threshold increases to 0.925V (see the *Typical Operating Characteristics* section).

Connect a pullup resistor of 100kΩ or greater from LBO to OUT for a logic output. LBO is an open-drain output and can be pulled as high as 6V regardless of the voltage at OUT. When LBI is below the threshold, the LBO output is high impedance. If the low-battery comparator is not used, ground LBI and LBO.

## Applications Information

### Inductor Selection

An inductor value of 22µH performs well in most applications. The MAX1795/MAX1796/MAX1797 will also work with inductors in the 10µH to 47µH range. Smaller inductance values typically offer a smaller physical size for a given series resistance, allowing the smallest overall circuit dimensions, but have lower output current capability. Circuits using larger inductance values exhibit higher output current capability, but are physically larger for the same series resistance and current rating.

The inductor's incremental saturation current rating should be greater than the peak switch-current limit, which is 0.25A for the MAX1795, 0.5A for the MAX1796, and 1A for the MAX1797. However, it is generally acceptable to bias the inductor into saturation by as much as 20% although this will slightly reduce efficiency. Table 1 lists some suggested components for typical applications.

The inductor's DC resistance significantly affects efficiency. Calculate the maximum output current ($I_{OUT(MAX)}$) as follows, using inductor ripple current ($I_{RIP}$) and duty cycle (D):

$$I_{RIP} = \frac{V_{OUT} + I_{LIM} \times (R_{PFET} + L_{ESR}) - V_{BATT}}{\left[\dfrac{L}{t_{OFF}} + \dfrac{(R_{PFET} + L_{ESR})}{2}\right]}$$

$$D = \frac{V_{OUT} + \left(I_{LIM} - \dfrac{I_{RIP}}{2}\right) \times (R_{PFET} + L_{ESR}) - V_{BATT}}{V_{OUT} + \left(I_{LIM} - \dfrac{I_{RIP}}{2}\right) \times (R_{PFET} - R_{NFET} + L_{ESR})}$$

and

$$I_{OUT(MAX)} = \left(I_{LIM} + \frac{I_{RIP}}{2}\right)$$

where: $I_{RIP}$ = Inductor ripple current (A)

$V_{OUT}$ = Output voltage (V)

$I_{LIM}$ = Device current limit (0.25A, 0.5A, or 1A)

$R_{PFET}$ = On-resistance of P-channel MOSFET (Ω) (typ 0.27Ω)

$L_{ESR}$ = ESR of Inductor (Ω) (typ 0.095Ω)

$V_{BATT}$ = Input voltage (V)

L = Inductor value in µH

$t_{OFF}$ = LX switch's off-time (µs) (typ 1µs)

D = Duty cycle

$R_{NFET}$ = On-resistance of N-channel MOSFET (Ω) (typ 0.17Ω)

$I_{OUT(MAX)}$ = Maximum output current (A)

### Capacitor Selection

Table 1 lists suggested tantalum or polymer capacitor values for typical applications. The ESR of both input bypass and output filter capacitors affects efficiency and output ripple. Output voltage ripple is the product of the peak inductor current and the output capacitor ESR. High-frequency output noise can be reduced by connecting a 0.1µF ceramic capacitor in parallel with the output filter capacitor. See Table 2 for a list of suggested component suppliers.

### PC Board Layout and Grounding

Careful printed circuit layout is important for minimizing ground bounce and noise. Keep the IC's GND pin and the ground leads of the input and output filter capacitors less than 0.2in (5mm) apart. In addition, keep all connections to the FB and LX pins as short as possible. In particular, when using external feedback resistors, locate them as close to FB as possible. To maximize output power and efficiency and minimize output ripple voltage, use a ground plane and solder the IC's GND pin directly to the ground plane.

## Table 1. Suggested Components for Typical Applications

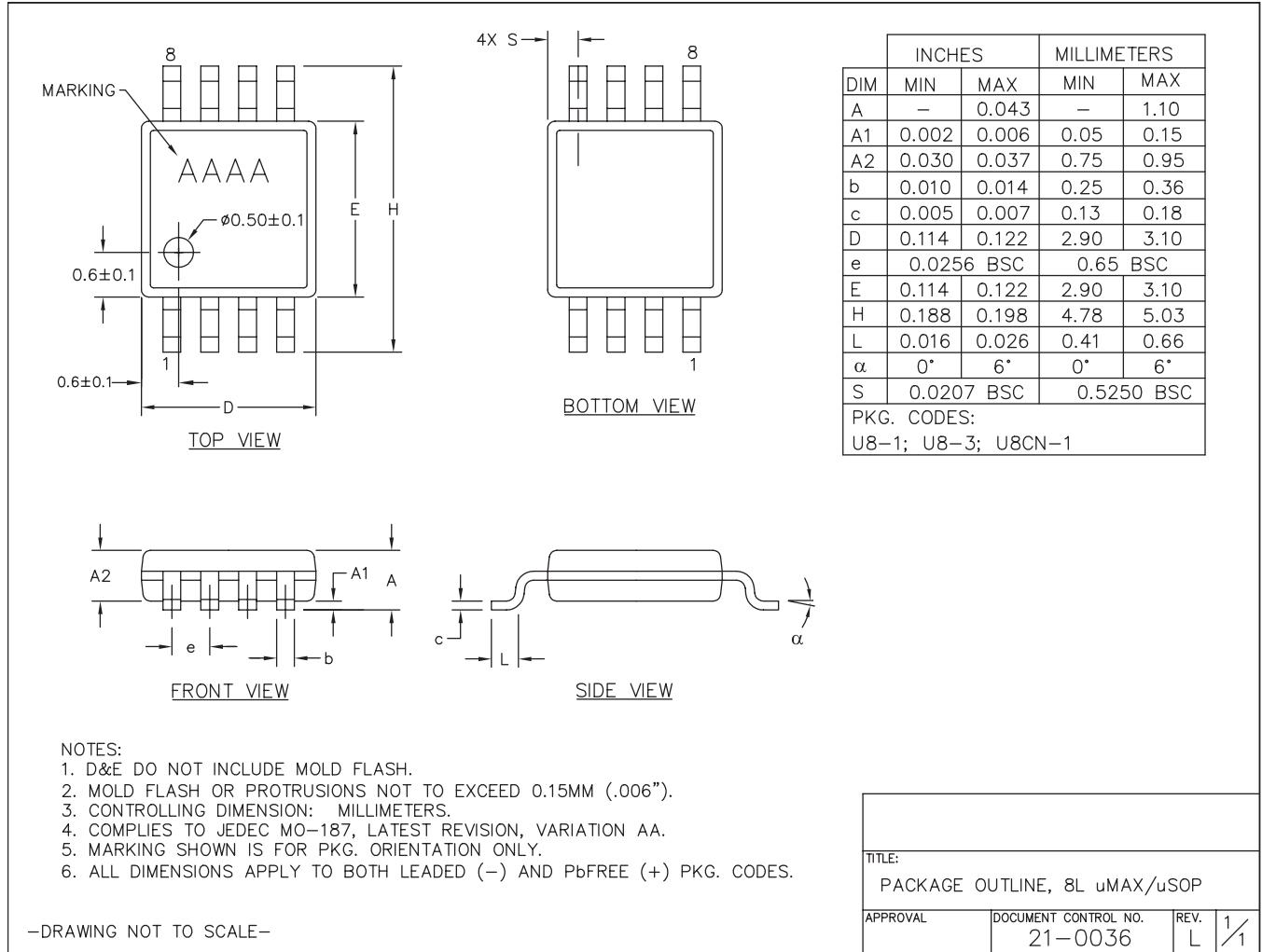| COMPONENT | COMPONENT VALUE (MAX1797, 1A CURRENT LIMIT) | COMPONENT VALUE (MAX1796, 0.5A CURRENT LIMIT) | COMPONENT VALUE (MAX1795, 0.25A CURRENT LIMIT) |
|---|---|---|---|
| Inductor | Sumida CDRH6D28-220, 22µH | Sumida CDRH4D28-220, 22µH | Sumida CR32-220, 22µH |
| | | | Sumida CR32-100, 10µH |
| | | | Murata CQH3C100K34, 10µH |
| | Coilcraft DS3316P-223, 22µH | Coilcraft DS1608C-223, 22µH | Murata CQH4N100K(J)04, 10µH |
| | | | Coilcraft DS1608C-223, 22µH |
| | | | Coilcraft DS1608C-103, 10µH |
| Input Capacitor | Sanyo POSCAP 6TPA47M, 47µF | Sanyo POSCAP 6TPA47M, 47µF | Sanyo POSCAP 6TPA47M, 47µF |
| Output Capacitor | AVX TPSD476M016R0150, 47µF | AVX TPSD226M016R0150, 22µF | AVX TPSD106M016R0150, 10µF |
| | Taiyo Yuden UMK316BI150KH, 0.1µF | Taiyo Yuden UMK316BI150KH, 0.1µF | Taiyo Yuden UMK316BI150KH, 0.1µF |

## Table 2. Component Suppliers

| COMPANY | PHONE | FAX |
|---|---|---|
| AVX | USA 803-946-0690 | USA 803-626-3123 |
| Coilcraft | USA 847-639-6400 | USA 847-639-1238-469 |
| Coiltronics | USA 561-241-7876 | USA 561-241-9339 |
| Murata | USA 814-237-1431 1-800-831-9172 | USA 814-238-0490 |
| Nihon | USA 805-867-2555 Japan 81-3-3494-7411 | USA 805-867-2556 Japan 81-3-3494-7414 |
| Sanyo | USA 619-661-6835 Japan 81-7-2070-6306 | USA 619-661-1055 Japan 81-7-2070-1174 |
| Sprague | USA 603-224-1961 | USA 603-224-1430 |
| Sumida | USA 647-956-0666 Japan 81-3-3607-5111 | USA 647-956-0702 Japan 81-3-3607-5144 |
| Taiyo Yuden | USA 408-573-4150 | USA 408-573-4159 |

## Chip Information

TRANSISTOR COUNT: 1100
PROCESS: BiCMOS

## Package Information



| DIM | INCHES | | MILLIMETERS | |
|-----|--------|------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A | – | 0.043 | – | 1.10 |
| A1 | 0.002 | 0.006 | 0.05 | 0.15 |
| A2 | 0.030 | 0.037 | 0.75 | 0.95 |
| b | 0.010 | 0.014 | 0.25 | 0.36 |
| c | 0.005 | 0.007 | 0.13 | 0.18 |
| D | 0.114 | 0.122 | 2.90 | 3.10 |
| e | 0.0256 BSC | | 0.65 BSC | |
| E | 0.114 | 0.122 | 2.90 | 3.10 |
| H | 0.188 | 0.198 | 4.78 | 5.03 |
| L | 0.016 | 0.026 | 0.41 | 0.66 |
| α | 0° | 6° | 0° | 6° |
| S | 0.0207 BSC | | 0.5250 BSC | |

PKG. CODES:
U8-1; U8-3; U8CN-1

NOTES:
1. D&E DO NOT INCLUDE MOLD FLASH.
2. MOLD FLASH OR PROTRUSIONS NOT TO EXCEED 0.15MM (.006").
3. CONTROLLING DIMENSION:  MILLIMETERS.
4. COMPLIES TO JEDEC MO-187, LATEST REVISION, VARIATION AA.
5. MARKING SHOWN IS FOR PKG. ORIENTATION ONLY.
6. ALL DIMENSIONS APPLY TO BOTH LEADED (-) AND PbFREE (+) PKG. CODES.

-DRAWING NOT TO SCALE-

| TITLE: PACKAGE OUTLINE, 8L uMAX/uSOP | | |
|---|---|---|
| APPROVAL | DOCUMENT CONTROL NO. 21-0036 | REV. L | 1/1 |

# Mouser Electronics

Authorized Distributor


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[Maxim Integrated](#):

MAX1796EUA+  MAX1797EUA+  MAX1795EUA+  MAX1795EUA+T  MAX1796EUA+T  MAX1797EUA+T
MAX1795EUA-T  MAX1795EUA  MAX1797EUA  MAX1797EUA-T  MAX1796EUA-T  MAX1796EUA