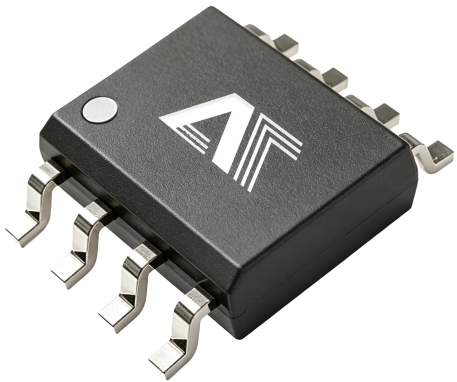




**A Peak Boost/Buck/Inverting  
Switching Regulators**

**MC34063A(AT)**

**Product Data Sheet**

**AOTE DCC  
RELEASE**

## ◆ Summary :

The MC34063 devices are easy-to-use ICs containing all the primary circuitry needed for building simple DC-DC converters. These devices primarily consist of an internal temperature-compensated reference, a comparator, an oscillator, a PWM controller with active current limiting, a driver, and a high-current output switch. Thus, the devices require minimal external components to build converters in the boost, buck, and inverting topologies.

The MC34063 device is characterized for operation from 0°C to 70°C.

## ◆ Product features

- Wide Input Voltage Range: 3V to 40V
- High Output Switch Current: Up to 1.5A
- Adjustable Output Voltage
- Oscillator Frequency Up to 100kHz
- Precision Internal Reference: 2%
- Short-Circuit Current Limiting
- Low Standby Current

## ◆ Applications

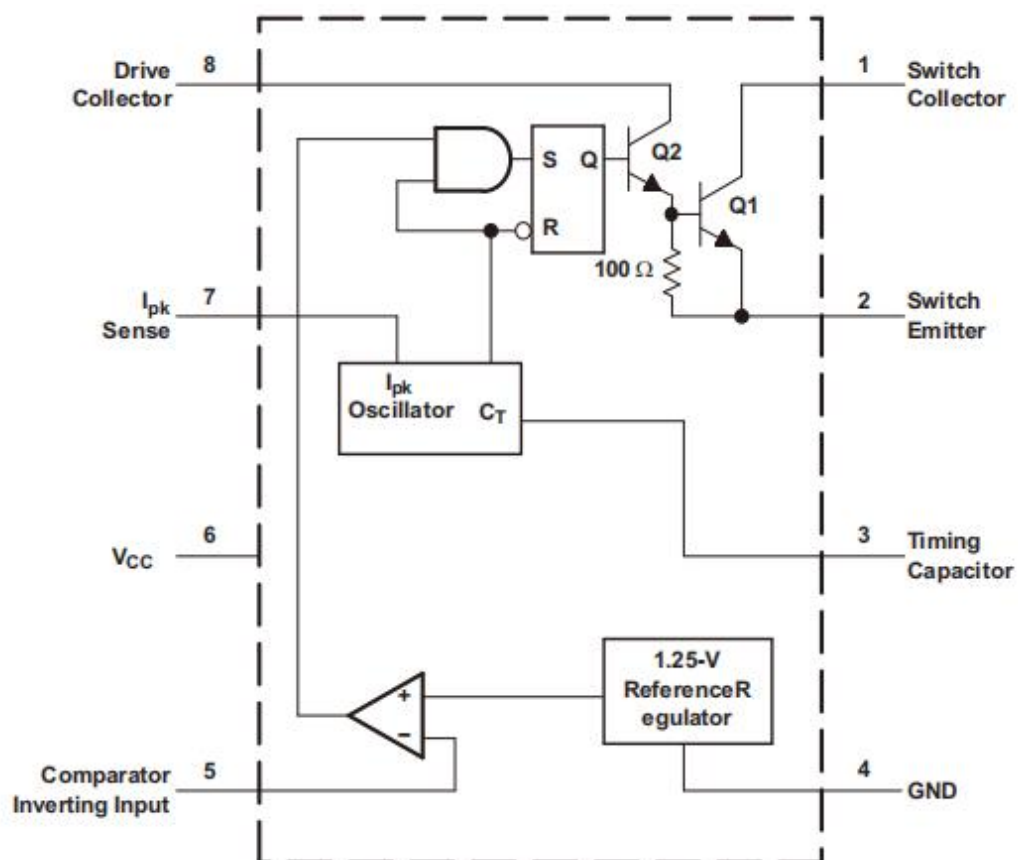
- Blood Gas Analyzers: Portable
- Cable Solutions
- HMIs (Human Machine Interfaces)
- Telecommunications
- Portable Devices
- Consumer & Computing
- Test & Measurement

## ◆ Device Information (1)

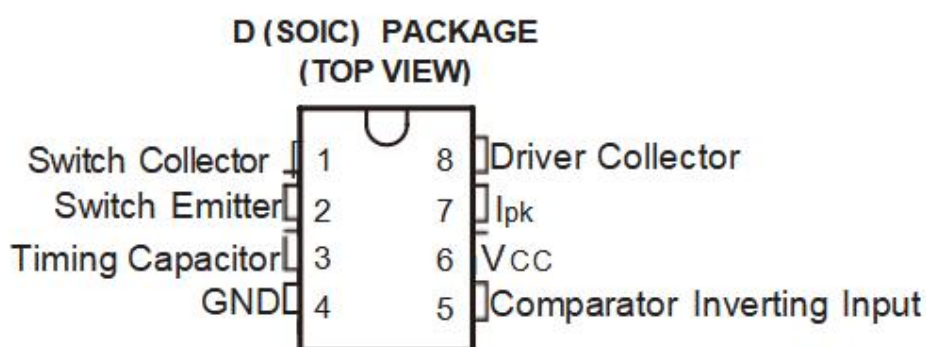
| PART NUMBER | PACKAGE(PIN) | BODY SIZE     |
|-------------|--------------|---------------|
| MC34063     | SOIC(8)      | 4.90mm×3.91mm |

(1) For all available packages, see the orderable addendum at the end of the data sheet.

## ◆ Simplified Schematic



## ◆ Pin Configuration and Functions



† The exposed thermal pad is electrically bonded internally to pin 4 (GND).

## ◆ Pin Functions

| PIN                        |     | TYPE | DESCRIPTION                                                    |
|----------------------------|-----|------|----------------------------------------------------------------|
| NAME                       | NO. |      |                                                                |
| Switch Collector           | 1   | I/O  | High-current internal switch collector input                   |
| Switch Emitter             | 2   | I/O  | High-current internal switch emitter output                    |
| Timing Capacitor           | 3   | -    | Attach a timing capacitor to change the switching frequency    |
| GND                        | 4   | -    | Ground                                                         |
| Comparator Inverting Input | 5   | I    | Attach to a resistor divider network to create a feedback loop |
| V <sub>CC</sub>            | 6   | I    | Logic supply voltage. Tie to V <sub>IN</sub>                   |
| I <sub>PK</sub>            | 7   | I    | Current-limit sense input                                      |
| Driver Collector           | 8   | I/O  | Darlington pair driving transistor collector input             |

## ◆ Specifications

Absolute Maximum Ratings Over operating free-air temperature range (unless otherwise noted) (1)

| -                       | -                                          | MIN                     | MAX | UNIT |
|-------------------------|--------------------------------------------|-------------------------|-----|------|
| V <sub>CC</sub>         | Supply voltage                             | -                       | 40  | V    |
| V <sub>IR</sub>         | Comparator inverting input voltage range   | -0.3                    | 40  | V    |
| V <sub>C(switch)</sub>  | Switch collector voltage                   | -                       | 40  | V    |
| V <sub>E(switch)</sub>  | Switch emitter voltage                     | V <sub>PIN1</sub> = 40V |     | V    |
| V <sub>CE(switch)</sub> | Switch collector to switch emitter voltage | -                       | 40  | V    |
| V <sub>C(driver)</sub>  | Driver collector voltage                   | -                       | 40  | V    |
| I <sub>C(driver)</sub>  | Driver collector current                   | -                       | 100 | mA   |
| I <sub>SW</sub>         | Switch current                             | -                       | 1.5 | A    |
| T <sub>J</sub>          | Operating virtual junction temperature     | -                       | 150 | °C   |
| T <sub>stg</sub>        | Storage temperature range                  | -65                     | 150 | °C   |

(1) 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 under

Recommended Operating Conditions are not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

### ◆ ESD Ratings

|             |                         |                                                                                       | VALUE | UNIT |
|-------------|-------------------------|---------------------------------------------------------------------------------------|-------|------|
| $V_{(ESD)}$ | Electrostatic discharge | Human body model(HBM),per ANSI/ESDA/JEDECJS-001,all pins <sup>(1)</sup>               | 2500  | V    |
|             |                         | Charged device model(CDM),per JEDEC specification JESD22-C101,all pins <sup>(2)</sup> | 1500  |      |

(1)JEDEC document EP155 states that 500-V HBM allows safe manufacturing with a standard ESD control process.

(2)JEDEC document JEP157 states that 250-VCDM allows safe manufacturing with a standard ESD control process.

### ◆ Recommended Operating Conditions

| -               | -                              |         | MIN | MAX | UNIT |
|-----------------|--------------------------------|---------|-----|-----|------|
| V <sub>CC</sub> | Supply voltage                 |         | 3   | 40  | V    |
| T <sub>A</sub>  | Operating free-air temperature | MC34063 | 0   | 70  | °C   |

### ◆ Thermal Information

| -                | -                                      | MC34063 |     |    | UNIT |
|------------------|----------------------------------------|---------|-----|----|------|
|                  |                                        | D       | DRJ | P  |      |
|                  |                                        | 8PINS   |     |    |      |
| R <sub>θJA</sub> | Junction-to-ambient thermal resistance | 97      | 41  | 85 | °C/W |

(1)For more information about traditional and new thermal metrics,see the IC Package Thermal Metrics application report(SPRA953).

### ◆ Electrical Characteristics—Oscillator

$V_{CC}=5V$ ,  $T_A$ =full operating range(unless otherwise noted)(see block diagram)

| -                    | PARAMETER                         | TEST CONDITIONS              | $T_A$ | MIN | TYP | MAX | UNIT |
|----------------------|-----------------------------------|------------------------------|-------|-----|-----|-----|------|
| $f_{osc}$            | Oscillator frequency              | $V_{PIN5}=0V$ ,<br>$C_T=1nF$ | 25°C  | 24  | 33  | 42  | kHz  |
| $I_{chg}$            | Charge current                    | $V_{CC}=5V$ to 40V           | 25°C  | 24  | 35  | 42  | μA   |
| $I_{dischg}$         | Discharge current                 | $V_{CC}=5V$ to 40V           | 25°C  | 140 | 220 | 260 | μA   |
| $I_{dischg}/I_{chg}$ | Discharge-to-charge current ratio | $V_{PIN7}=V_{CC}$            | 25°C  | 5.2 | 6.5 | 7.5 | -    |
| $V_{ipk}$            | Current-limit sense voltage       | $I_{dischg}=I_{chg}$         | 25°C  | 250 | 300 | 350 | mV   |

### ◆ Electrical Characteristics—Output Switch

$V_{CC}=5V, T_A=\text{full operating range (unless otherwise noted)}$ (see block diagram)<sup>(1)</sup>

| PARAMETER                                                                      |                             | TEST CONDITIONS                                                    | $T_A$      | MIN | TYP  | MAX | UNIT    |
|--------------------------------------------------------------------------------|-----------------------------|--------------------------------------------------------------------|------------|-----|------|-----|---------|
| $V_{CE(sat)}$<br>Saturation voltage– Darlington connection                     |                             | $I_{SW}=1A$ , pins 1 and 8 connected                               | Full range | -   | 1    | 1.3 | V       |
| $V_{CE(sat)}$<br>Saturation voltage – non-Darlington connection <sup>(2)</sup> |                             | $I_{SW}=1A$ ~, $R_{PIN8}=82\Omega$ to $V_{CC}$ , Forced $\beta 20$ | Full range | -   | 0.45 | 0.7 | V       |
| $h_{FE}$                                                                       | DC current gain             | $I_{SW}=1A, V_{CE}=5V$                                             | 25°C       | 50  | 75   | -   | -       |
| $I_{C(off)}$                                                                   | Collector off-state current | $V_{CE}=40V$                                                       | Full range | -   | 0.01 | 100 | $\mu A$ |

(1) Low duty cycle pulse testing is used to maintain junction temperature as close to ambient temperature as possible.

(2) In the non-Darlington configuration, if the output switch is driven into hard saturation at low switch currents ( $\leq 300mA$ ) and high driver currents ( $\geq 30mA$ ), it may take up to 2  $\mu s$  for the switch to come out of saturation. This condition effectively shortens the off time at frequencies  $\geq 30kHz$ , becoming magnified as temperature increases. The following output drive condition is recommended in the non-Darlington configuration: Forced  $\beta$  of output switch =  $I_{C,SW}/(I_{C,driver} - 7mA) \geq 10$ , where  $\sim 7mA$  is required by the 100- $\Omega$  resistor in the emitter of the driver to forward bias the  $V_{be}$  of the switch.

### ◆ Electrical Characteristics—Comparator

$V_{CC}=5V, T_A=\text{full operating range (unless otherwise noted)}$ (see block diagram)

| -               | PARAMETER                         | TEST               | $T_A$      | MIN   | TYP  | MAX   | UNIT |
|-----------------|-----------------------------------|--------------------|------------|-------|------|-------|------|
| $V_{th}$        | Threshold voltage                 | -                  | 25°C       | 1.225 | 1.25 | 1.275 | V    |
|                 |                                   |                    | Full range | 1.21  | -    | 1.29  |      |
| $\Delta V_{th}$ | Threshold-voltage line regulation | $V_{CC}=5V$ to 40V | Full range | -     | 1.4  | 5     | mV   |
| $I_B$           | Input bias current                | $V_{IN}=0V$        | Full range | -     | -20  | -400  | nA   |

### ◆ Electrical Characteristics—Total Device

$V_{CC}=5V, T_A=\text{full operating range (unless otherwise noted)}$ (see block diagram)

| PARAMETER |                | TEST                                                                                                            | $T_A$      | MIN | MAX | UNIT |
|-----------|----------------|-----------------------------------------------------------------------------------------------------------------|------------|-----|-----|------|
| $I_{CC}$  | Supply current | $V_{CC}=5V$ to 40V, $C_T=1nF$ ,<br>$V_{PIN7}=V_{CC}, V_{PIN5}>V_{th}$ ,<br>$V_{PIN2}=GND$ , All other pins open | Full range | -   | 4   | mA   |

## ◆ Typical Characteristics

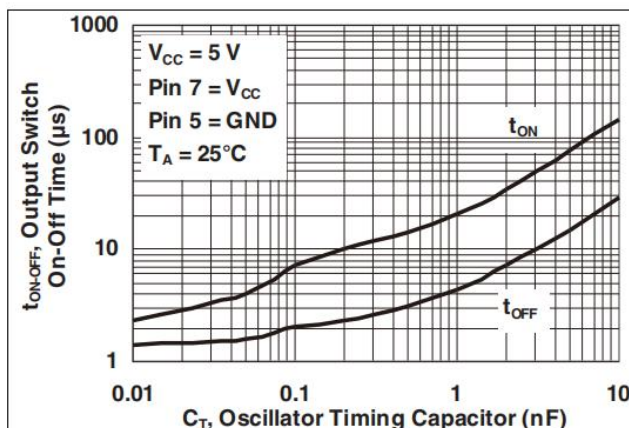


Figure 1. Output Switch On-Off Time vs Oscillator Timing Capacitor

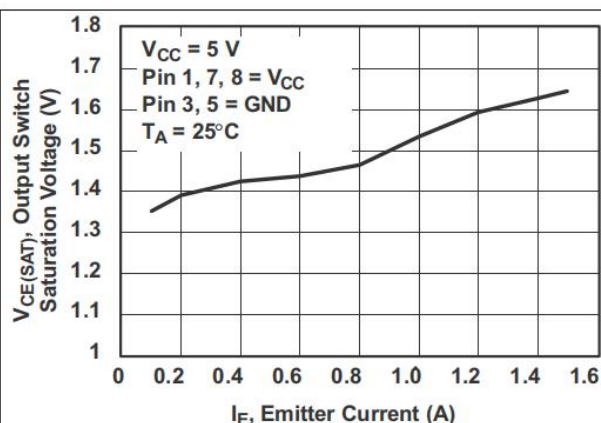


Figure 2. Output Switch Saturation Voltage vs Emitter Current (Emitter-Follower Configuration)

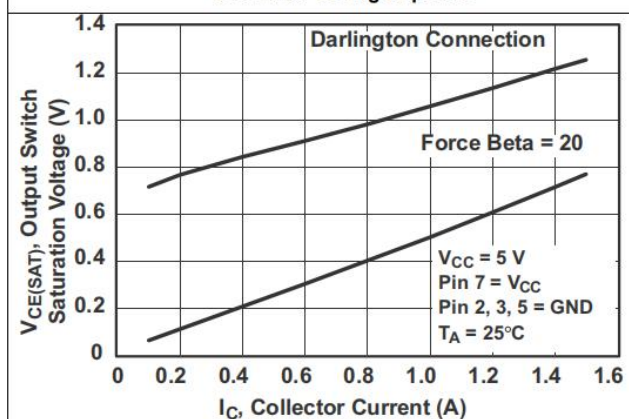


Figure 3. Output Switch Saturation Voltage vs Collector Current (Common-Emitter Configuration)

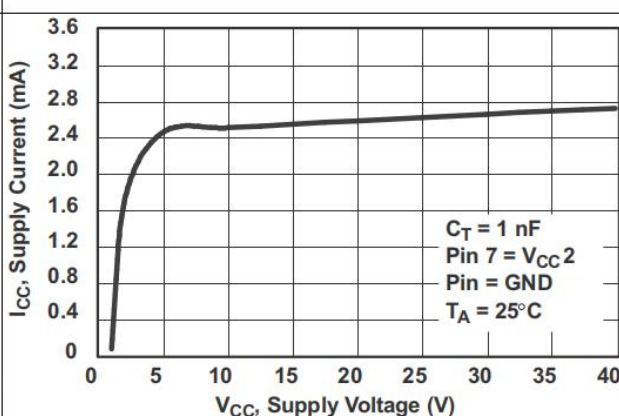


Figure 4. Standby Supply Current vs Supply Voltage

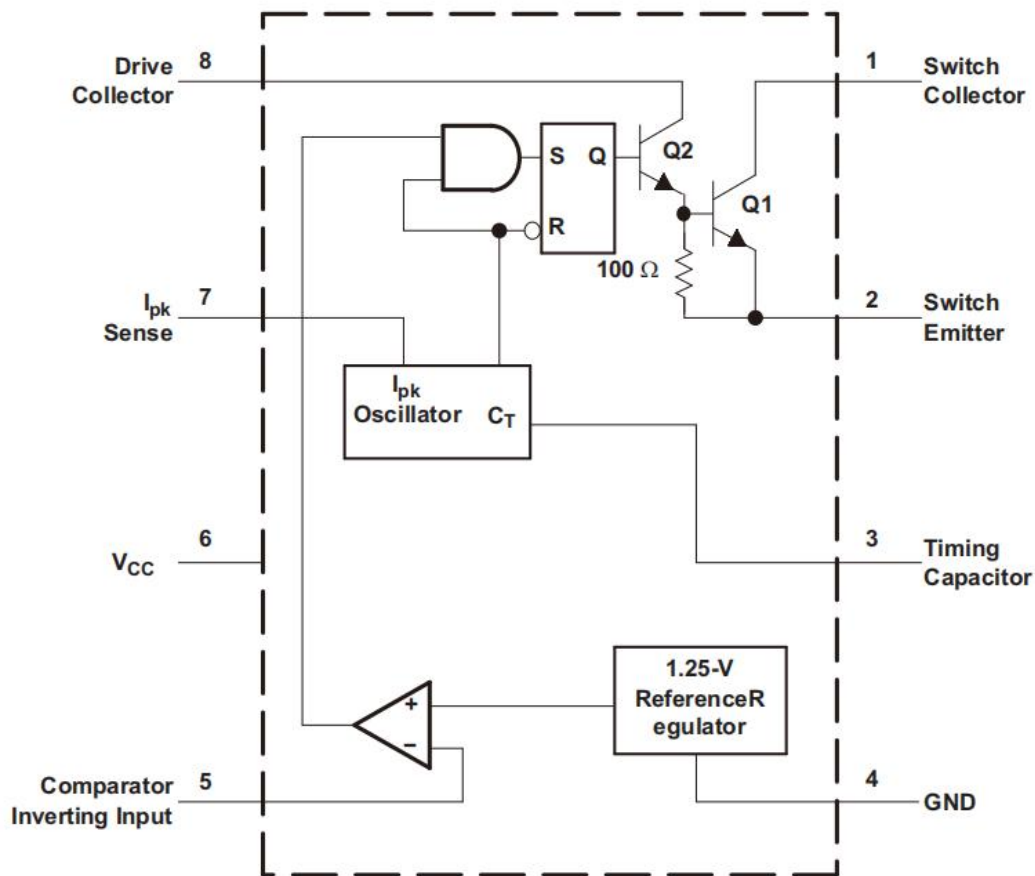
## ◆ Detailed Description

### Overview

The MC34063 devices are easy-to-use ICs containing all the primary circuitry needed for building simple DC-DC converters. These devices primarily consist of an internal temperature-compensated reference, a comparator, an oscillator, a PWM controller with active current limiting, a driver, and a high-current output switch. Thus, the devices require minimal external components to build converters in the boost, buck, and inverting topologies.

The MC34063 device is characterized for operation from 0°C to 70°C.

### ◆ Functional Block Diagram



### ◆ Feature Description

- Wide Input Voltage Range: 3V to 40V
- High Output Switch Current: Up to 1.5A
- Adjustable Output Voltage
- Oscillator Frequency Up to 100kHz
- Precision Internal Reference: 2%
- Short-Circuit Current Limiting
- Low Standby Current

### ◆ Device Functional Modes Standard operation block diagram

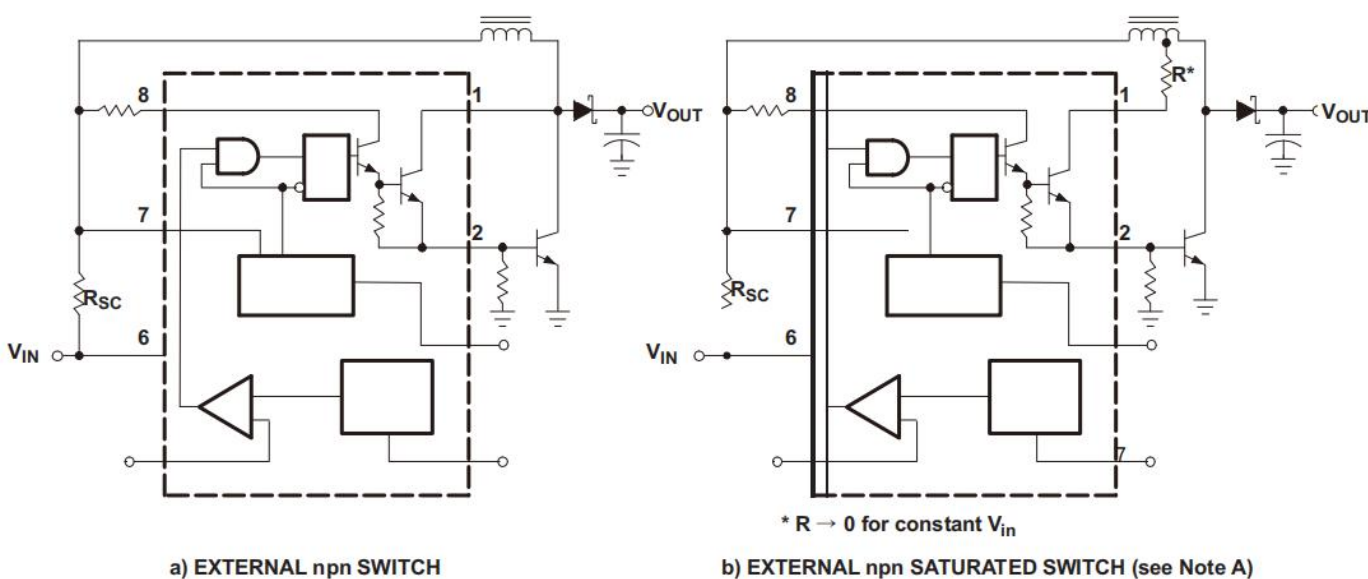
Based on the application, the device can be configured in multiple different topologies. See the Application and Implementation section for how to configure the device in several different operating modes.

## ◆ Application and Implementation

Attention:

Information in the following applications sections is not part of the AOS component specification, and AOS does not warrant its accuracy or completeness. AOS' s customers are responsible for determining suitability of components for their purposes. Customers should validate and test their design implementation to confirm system functionality.

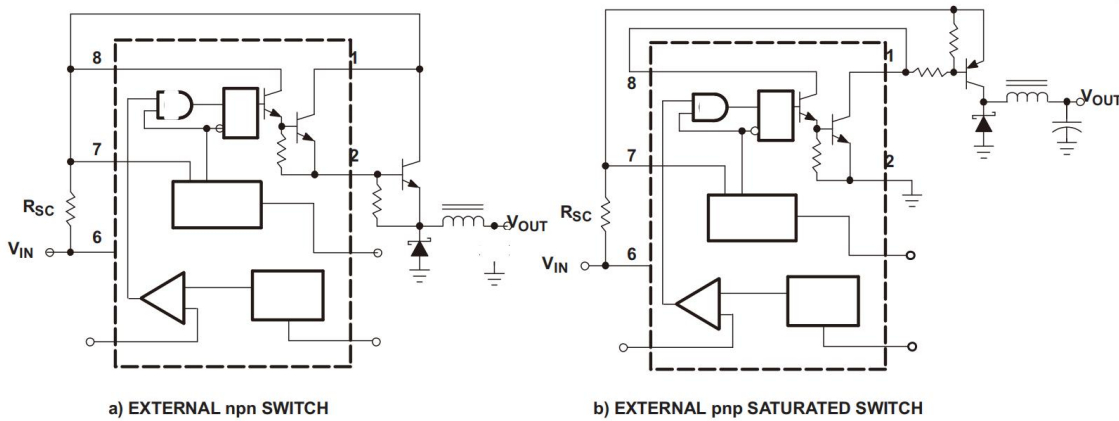
## ◆ Application Information External Switch Configurations for Higher Peak Current



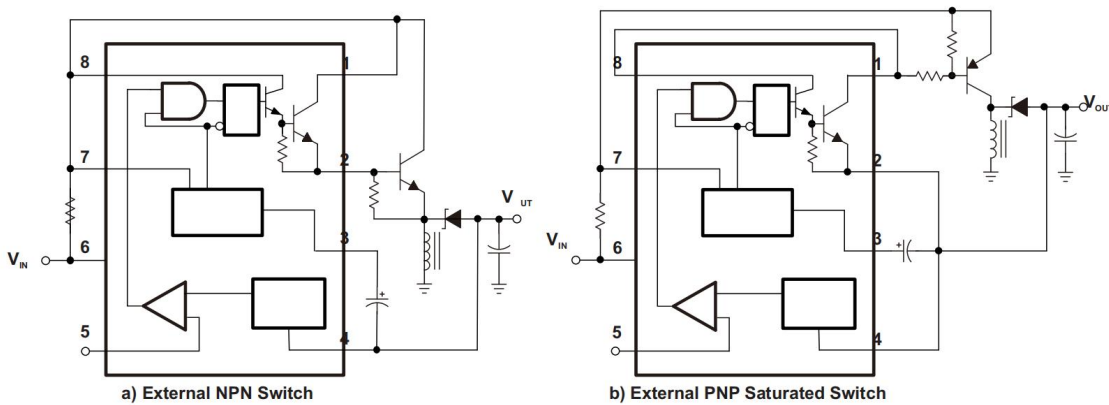
- A. If the output switch is driven into hard saturation (non-Darlington configuration) at low switch currents ( $\leq 300$  mA) and high driver currents ( $\geq 30$  mA), it may take up to  $2 \mu\text{s}$  to come out of saturation. This condition will shorten the off time at frequencies  $\geq 30$  kHz and is magnified at high temperatures. This condition does not occur with a Darlington configuration because the output switch cannot saturate. If a non-Darlington configuration is used, the output drive configuration in Figure 7b is recommended.

**Figure 5. Boost Regulator Connections for  $I_C$  Peak Greater Than 1.5 A**

◆ **Application Information(continued)**

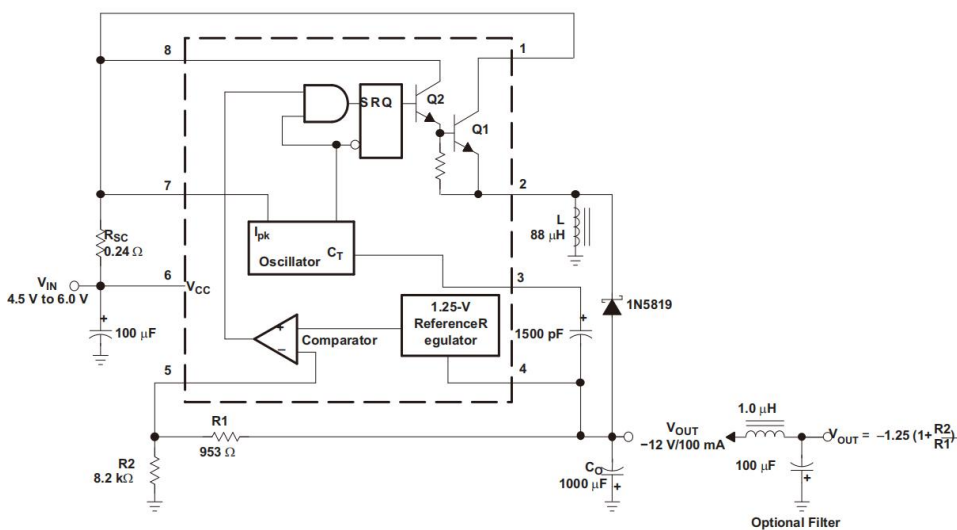


**Figure 6. Buck Regulator Connections for  $I_C$  Peak Greater Than 1.5 A**



**Figure 7. Inverting Regulator Connections for  $I_C$  Peak Greater Than 1.5 A**

◆ **Typical Application Voltage-Inverting Converter Application**



**Figure 8. Voltage-Inverting Converter**

### ◆ Typical Application(continued)

#### Design Requirements

The user must determine the following desired parameters:

$V_{sat}$ =Saturation voltage of the output switch

$V_F$ =Forward voltage drop of the chosen output rectifier

The following power-supply parameters are set by the user:

$V_{in}$ =Nominal input voltage

$V_{out}$ =Desired output voltage

$I_{out}$ =Desired output current

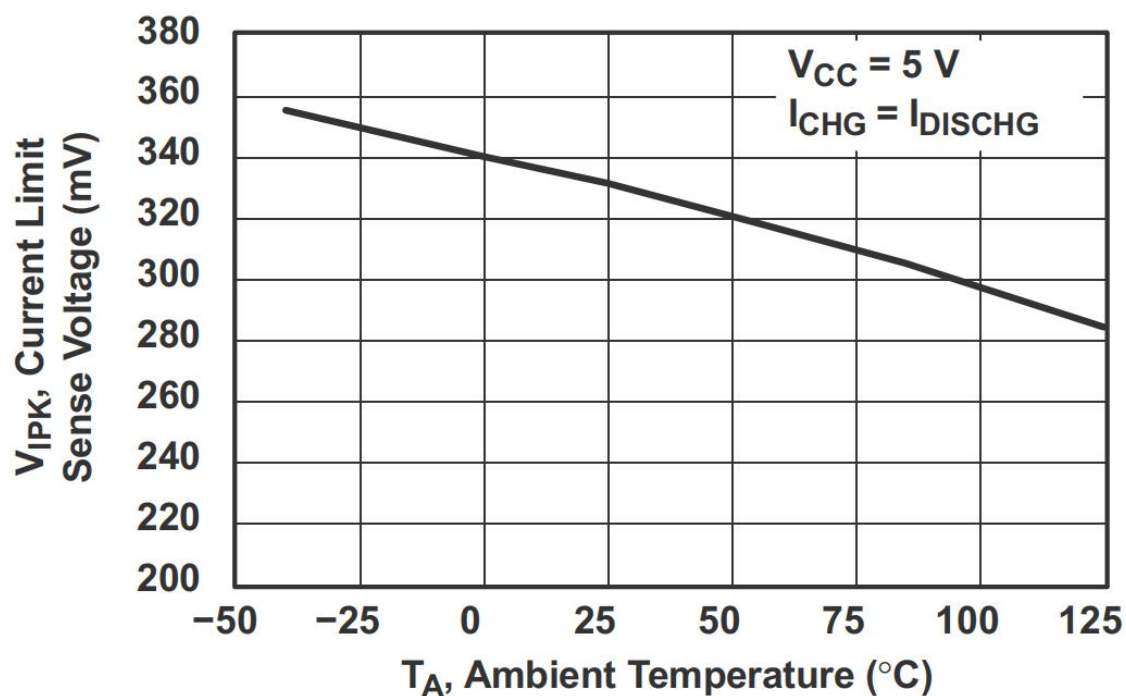
$f_{min}$ =Minimum desired output switching frequency at the selected values of  $V_{in}$  and  $I_{out}$

$V_{ripple}$ =Desired peak-to-peak output ripple voltage.The ripple voltage directly affects the line and load regulation and,thus,must be considered. In practice, the actual capacitor value should be larger than the calculated value to account for the capacitor's equivalent series resistance and board layout.

### ◆ Detailed Design Procedure

| CALCULATION          | VOLTAGE INVERTING                                                           |
|----------------------|-----------------------------------------------------------------------------|
| $t_{on}/t_{off}$     | $\frac{V_{out} + V_{F-Vin(min)}}{V_{in(min)} - V_{sat}}$                    |
| $(t_{on} + t_{off})$ | $\frac{1}{f}$                                                               |
| $t_{off}$            | $\frac{t_{on} + t_{off}}{\frac{t_{on}}{t_{off}} + 1}$                       |
| $t_{on}$             | $(t_{on} + t_{off}) - t_{off}$                                              |
| $C_T$                | $4 \times 10^{-5} t_{on}$                                                   |
| $I_{pk(switch)}$     | $2I_{out(max)} \left( \frac{t_{on}}{t_{off}} + 1 \right)$                   |
| $R_{SC}$             | $\frac{0.3}{I_{pk(switch)}}$                                                |
| $L_{(min)}$          | $\left( \frac{(V_{in(min)} - V_{sat})}{I_{pk(switch)}} \right) t_{on(max)}$ |
| $C_0$                | $9 \frac{I_{out} t_{on}}{V_{ripple(pp)}}$                                   |
| $V_{out}$            | $1.25 \left( 1 + \frac{R2}{R1} \right)$<br>See Figure 10                    |

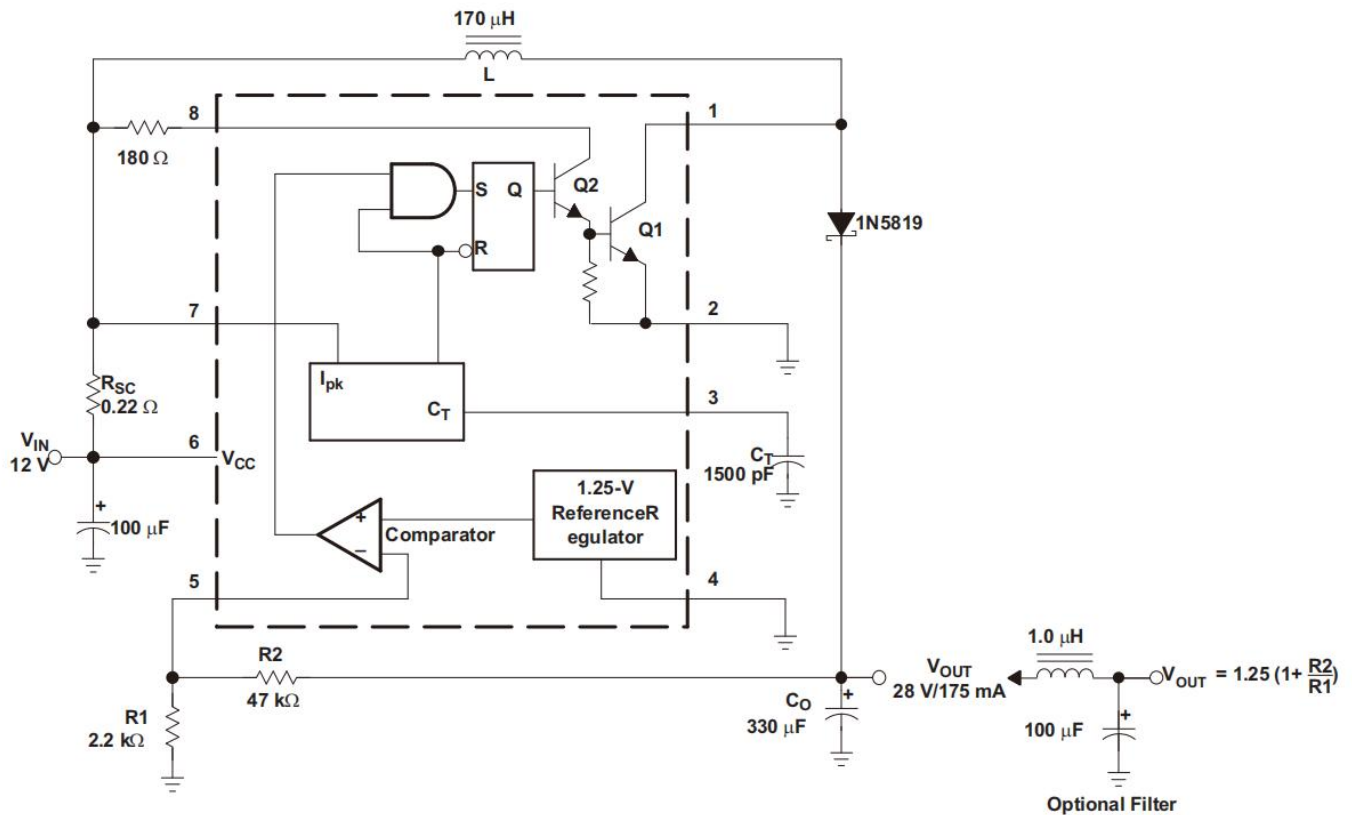
◆ Application Performance



**Figure 9. Current-Limit Sense Voltage vs Temperature**

| TEST                               | CONDITIONS                       | RESULTS             |
|------------------------------------|----------------------------------|---------------------|
| Line regulation                    | $V_{IN}=4.5V$ to $6V, I_0=100mA$ | $3mV \pm 0.12\%$    |
| Load regulation                    | $V_{IN}=5V, I_0=10mA$ to $100mA$ | $0.022V \pm 0.09\%$ |
| Output ripple                      | $V_{IN}=5V, I_0=100mA$           | $500mV_{pp}$        |
| Short-circuit current              | $V_{IN}=5V, R_L=0.1\Omega$       | $910mA$             |
| Efficiency                         | $V_{IN}=5V, I_0=100mA$           | $62.2\%$            |
| Output ripple with optional filter | $V_{IN}=5V, I_0=100mA$           | $70mV_{pp}$         |

## Step Up Converter Application



**Figure 10. Step-Up Converter**

### Design Requirements

The user must determine the following desired parameters:

$V_{sat}$  = Saturation voltage of the output switch

$V_f$  = Forward voltage drop of the chosen output rectifier

The following power-supply parameters are set by the user:

$V_{in}$  = Nominal input voltage

$V_{out}$  = Desired output voltage

$I_{out}$  = Desired output current

$f_{min}$  = Minimum desired output switching frequency at the selected values of  $V_{in}$  and  $I_{out}$   
 $V_{ripple}$  = Desired peak-to-peak output ripple voltage. The ripple voltage directly affects the line and load regulation and, thus, must be considered. In practice, the actual capacitor value should be larger than the calculated value to account for the capacitor's equivalent series resistance and board layout.

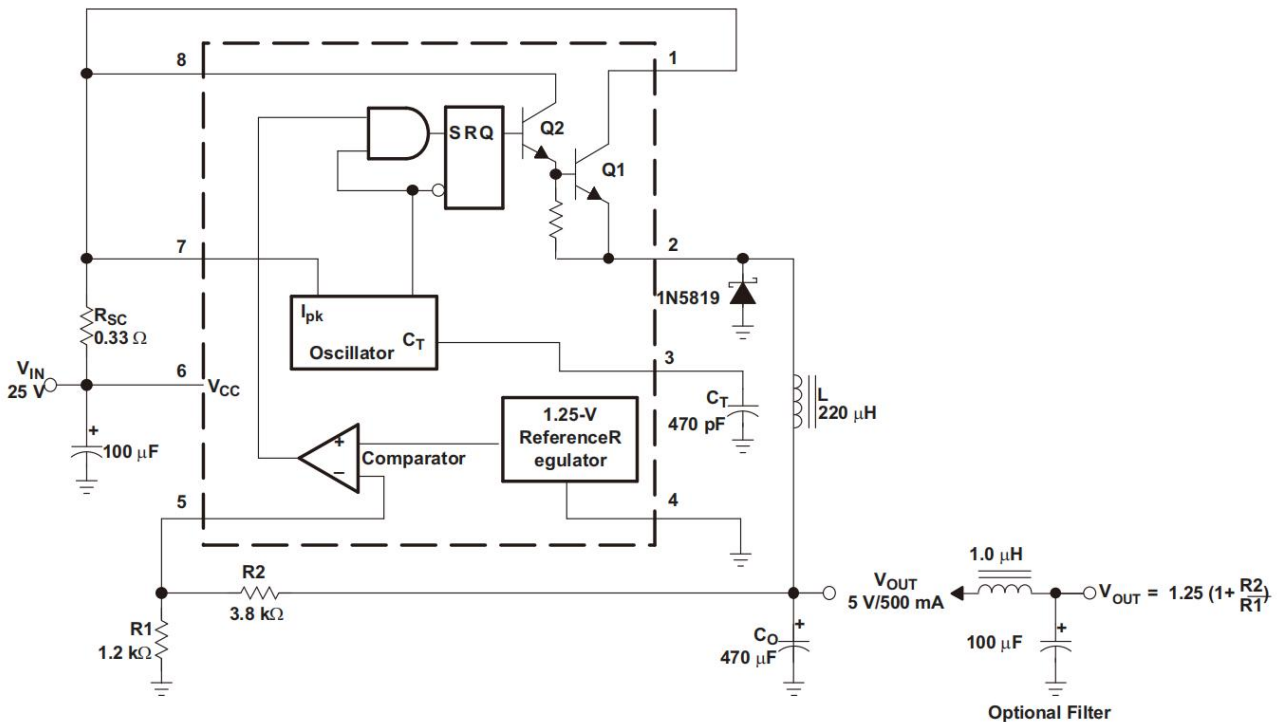
### ◆ Detailed Design Procedure

| CALCULATION          | STEP-UP                                                                     |
|----------------------|-----------------------------------------------------------------------------|
| $t_{on}/t_{off}$     | $\frac{V_{out} + V_{F-Vin(min)}}{V_{in(min)} - V_{sat}}$                    |
| $(t_{on} + t_{off})$ | $\frac{1}{f}$                                                               |
| $t_{off}$            | $\frac{t_{on} + t_{off}}{\frac{t_{on}}{t_{off}} + 1}$                       |
| $t_{on}$             | $(t_{on} + t_{off}) - t_{off}$                                              |
| $C_T$                | $4 \times 10^{-5} t_{on}$                                                   |
| $I_{pk(switch)}$     | $2I_{out(max)} \left( \frac{t_{on}}{t_{off}} + 1 \right)$                   |
| $R_{SC}$             | $\frac{0.3}{I_{pk(switch)}}$                                                |
| $L_{(min)}$          | $\left( \frac{(V_{in(min)} - V_{sat})}{I_{pk(switch)}} \right) t_{on(max)}$ |
| $C_0$                | $9 \frac{I_{out} t_{on}}{V_{ripple(pp)}}$                                   |
| $V_{out}$            | $1.25 \left( 1 + \frac{R2}{R1} \right)$<br>See Figure 10                    |

### ◆ Application Performance

| TEST                               | CONDITIONS                        | RESULTS            |
|------------------------------------|-----------------------------------|--------------------|
| Line regulation                    | $V_{IN}=8V$ to $16V, I_0=175mA$   | $30mV \pm 0.05\%$  |
| Load regulation                    | $V_{IN}=12V, I_0=75mA$ to $175mA$ | $10mV \pm 0.017\%$ |
| Output ripple                      | $V_{IN}=12V, I_0=175mA$           | $400mV_{pp}$       |
| Efficiency                         | $V_{IN}=12V, I_0=175mA$           | $87.7\%$           |
| Output ripple with optional filter | $V_{IN}=12V, I_0=175mA$           | $40mV_{pp}$        |

## ◆ Step-Down Converter Application



**Figure 11. Step-Down Converter**

### Design Requirements

The user must determine the following desired parameters:

$V_{sat}$  = Saturation voltage of the output switch

$V_F$  = Forward voltage drop of the chosen output rectifier

The following power-supply parameters are set by the user:

$V_{in}$  = Nominal input voltage

$V_{out}$  = Desired output voltage

$I_{out}$  = Desired output current

$f_{min}$  = Minimum desired output switching frequency at the selected values of  $V_{in}$  and  $I_{out}$   
 $V_{ripple}$  = Desired peak-to-peak output ripple voltage. The ripple voltage directly affects the line and load regulation and, thus, must be considered. In practice, the actual capacitor value should be larger than the calculated value, to account for the capacitor's equivalent series resistance and board layout.

### ◆ Detailed Design Procedure

| CALCULATION          | STEPUP                                                                                |
|----------------------|---------------------------------------------------------------------------------------|
| $t_{on}/t_{off}$     | $\frac{V_{out} + V_F}{V_{in(min)} - V_{sat} - V_{out}}$                               |
| $(t_{on} + t_{off})$ | $\frac{1}{f}$                                                                         |
| $t_{off}$            | $\frac{t_{on} + t_{off}}{\frac{t_{on}}{t_{off}} + 1}$                                 |
| $t_{on}$             | $(t_{on} + t_{off}) - t_{off}$                                                        |
| $C_T$                | $4 \times 10^{-5} t_{on}$                                                             |
| $I_{pk(switch)}$     | $2I_{out(max)}$                                                                       |
| $R_{SC}$             | $\frac{0.3}{I_{pk(switch)}}$                                                          |
| $L_{(min)}$          | $\left( \frac{(V_{in(min)} - V_{sat} - V_{out})}{I_{pk(switch)}} \right) t_{on(max)}$ |
| $C_0$                | $\frac{I_{pk(switch)} (t_{on} + t_{off})}{8V_{ripple(pp)}}$                           |
| $V_{out}$            | $1.25 \left( 1 + \frac{R_2}{R_1} \right)$ See Figure 11                               |

### ◆ Application Performance

| TEST                               | CONDITIONS                        | RESULTS           |
|------------------------------------|-----------------------------------|-------------------|
| Linear regulation                  | $V_{IN}=15V$ to $25V, I_o=500mA$  | $12mV \pm 0.12\%$ |
| Load regulation                    | $V_{IN}=25V, I_o=50mA$ to $500mA$ | $3mV \pm 0.03\%$  |
| Output ripple                      | $V_{IN}=25V, I_o=500mA$           | $120mV_{pp}$      |
| Short-circuit current              | $V_{IN}=25V, R_L=0.1 \Omega$      | $1.1\%$           |
| Efficiency                         | $V_{IN}=25V, I_o=500mA$           | $83.7\%$          |
| Output ripple with optional filter | $V_{IN}=25V, I_o=500mA$           | $40mV_{pp}$       |

### ◆ Power Supply Recommendations

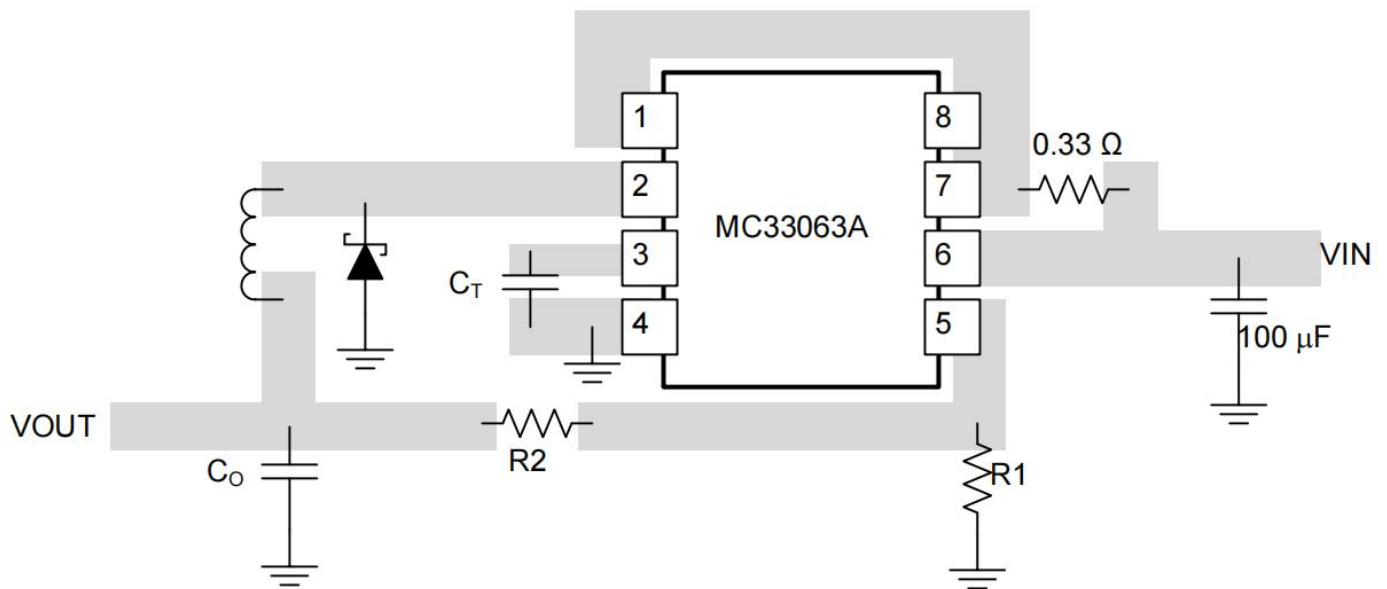
This device accepts 3V to 40V on the input. It is recommended to have a 1000- $\mu$ F decoupling capacitor on the input.

#### Layout

##### Layout Guidelines

Keep feedback loop layout trace lengths to a minimum to avoid unnecessary IR drop. In addition, the loop for the decoupling capacitor at the input should be as small as possible. The trace from VIN to pin1 of the device should be thicker to handle the higher current.

#### Layout Example



**Figure 12. Layout Example for a Step-Down Converter**

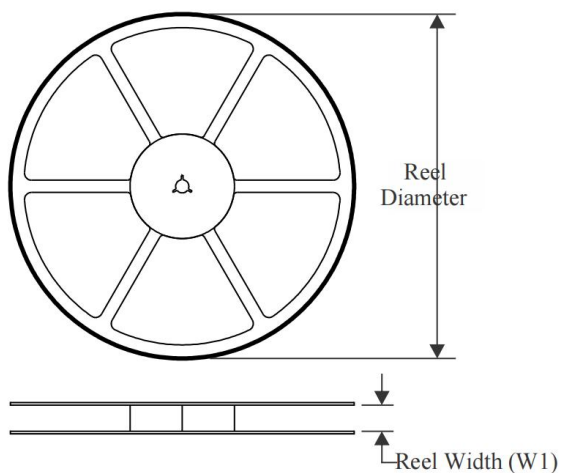
### ◆ Electrostatic Discharge Caution

These devices have limited built in ESD protection. The leads should be shorted together or the device placed in conductive foam during storage or handling to prevent electrostatic damage to the MOS gates.

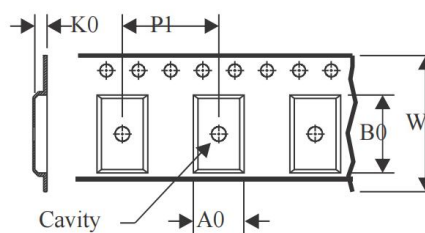
| Orderable part number | Status | Material type | Package Pins | Package qty Carrier | Ro HS | Lead finish/Ball material | MSL rating/Peak reflow | Optemp (°C) | Part marking |
|-----------------------|--------|---------------|--------------|---------------------|-------|---------------------------|------------------------|-------------|--------------|
| MC34063 AD            | NR ND  | Production    | SOIC (D)  8  | 75 TUBE             | Yes   | NIPDAU                    | Level-1 260C-UNLIM     | 0 to 70     | M3406 3A     |
| MC34063 AD.A          | NR ND  | Production    | SOIC (D)  8  | 75 TUBE             | Yes   | NIPDAU                    | Level-1 260C-UNLIM     | 0 to 70     | M3406 3A     |
| MC34063 ADE4          | NR ND  | Production    | SOIC (D)  8  | 75 TUBE             | Yes   | NIPDAU                    | Level-1 260C-UNLIM     | 0 to 70     | M3406 3A     |
| MC34063 ADG4          | NR ND  | Production    | SOIC (D)  8  | 75 TUBE             | Yes   | NIPDAU                    | Level-1 260C-UNLIM     | 0 to 70     | M3406 3A     |
| MC34063 ADR           | Active | Production    | SOIC (D)  8  | 2500   LARGE T&R    | Yes   | NIPDAU                    | Level-1 260C-UNLIM     | 0 to 70     | M3406 3A     |
| MC34063 ADR.A         | Active | Production    | SOIC (D)  8  | 2500   LARGE T&R    | Yes   | NIPDAU                    | Level-1 260C-UNLIM     | 0 to 70     | M3406 3A     |

◆ **TAPE AND REEL INFORMATION**

**REEL DIMENSIONS**

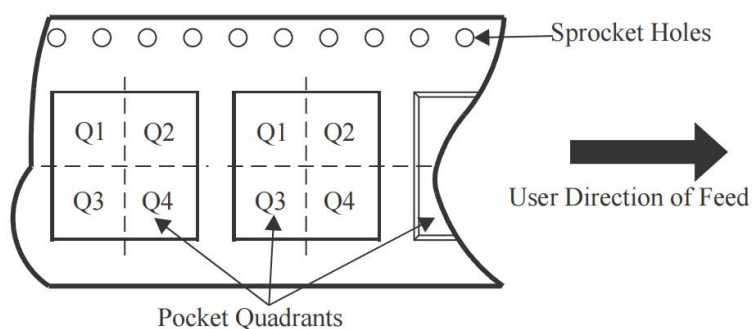


**TAPE DIMENSIONS**



|    |                                                           |
|----|-----------------------------------------------------------|
| A0 | Dimension designed to accommodate the component width     |
| B0 | Dimension designed to accommodate the component length    |
| K0 | Dimension designed to accommodate the component thickness |
| W  | Overall width of the carrier tape                         |
| P1 | Pitch between successive cavity centers                   |

**QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE**



All dimensions are nominal

| Device     | Package Type | Package Drawing | Pins | SPQ  | Reel Diameter (mm) | Reel Width W1 (mm) | A0 (mm) | B0 (mm) | K0 (mm) | P1 (mm) | W (mm) | Pin1 Quadrant |
|------------|--------------|-----------------|------|------|--------------------|--------------------|---------|---------|---------|---------|--------|---------------|
| MC34063ADR | SOIC         | D               | 8    | 2500 | 330.0              | 12.4               | 6.4     | 5.2     | 2.1     | 8.0     | 12.0   | Q1            |

**◆ Attention**

- AOTE implements dynamic technical updates. Specifications are subject to change. Refer to the official website for the latest version.
- Users must strictly adhere to specified conditions. Failures caused by misuse (overload, high temperature, incompatible circuits) are excluded from warranty.
- Contact technical support for customized validation in critical applications (medical devices, industrial control).
- This document is valid until December 31, 2026. Updates will be notified on the official website.
- For further clarification on the technical specifications or application solutions, please contact us through official channels: