



Darlington Lamp Driver

Description

This integrated circuit is a flip chip lamp driver for use in an automotive alternator system. The circuit drives an indicator lamp located on the dash-

board. Reverse battery protection is provided with internal diode, D1, and external resistors on B, C1 and C2.

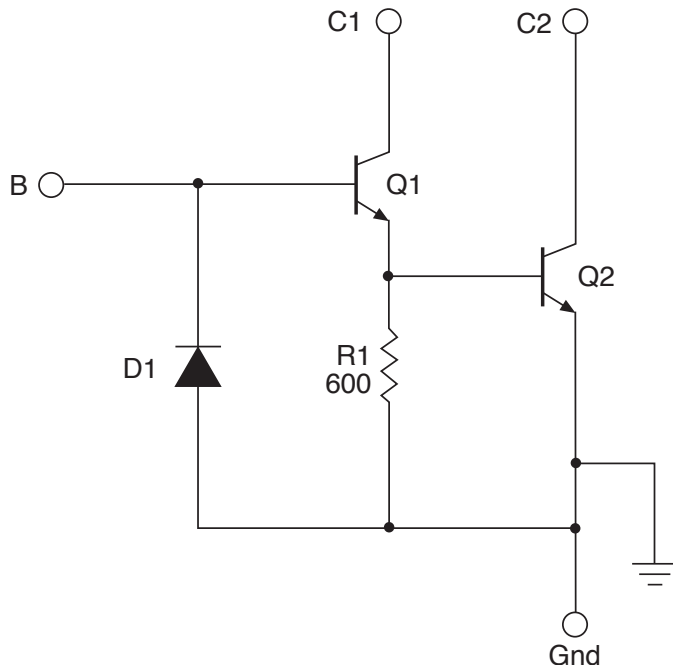
Features

- DC Current Gain 1000
- 80V Breakdown Voltage
- Reverse Battery protection

Absolute Maximum Ratings

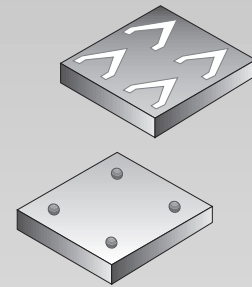
Storage Temperature-65°C ~ 150°C
 Ambient Operating Temperature.....-40°C ~ 140°C
 Collector Breakdown Voltage80V

Block Diagram



Package Option

Flip Chip



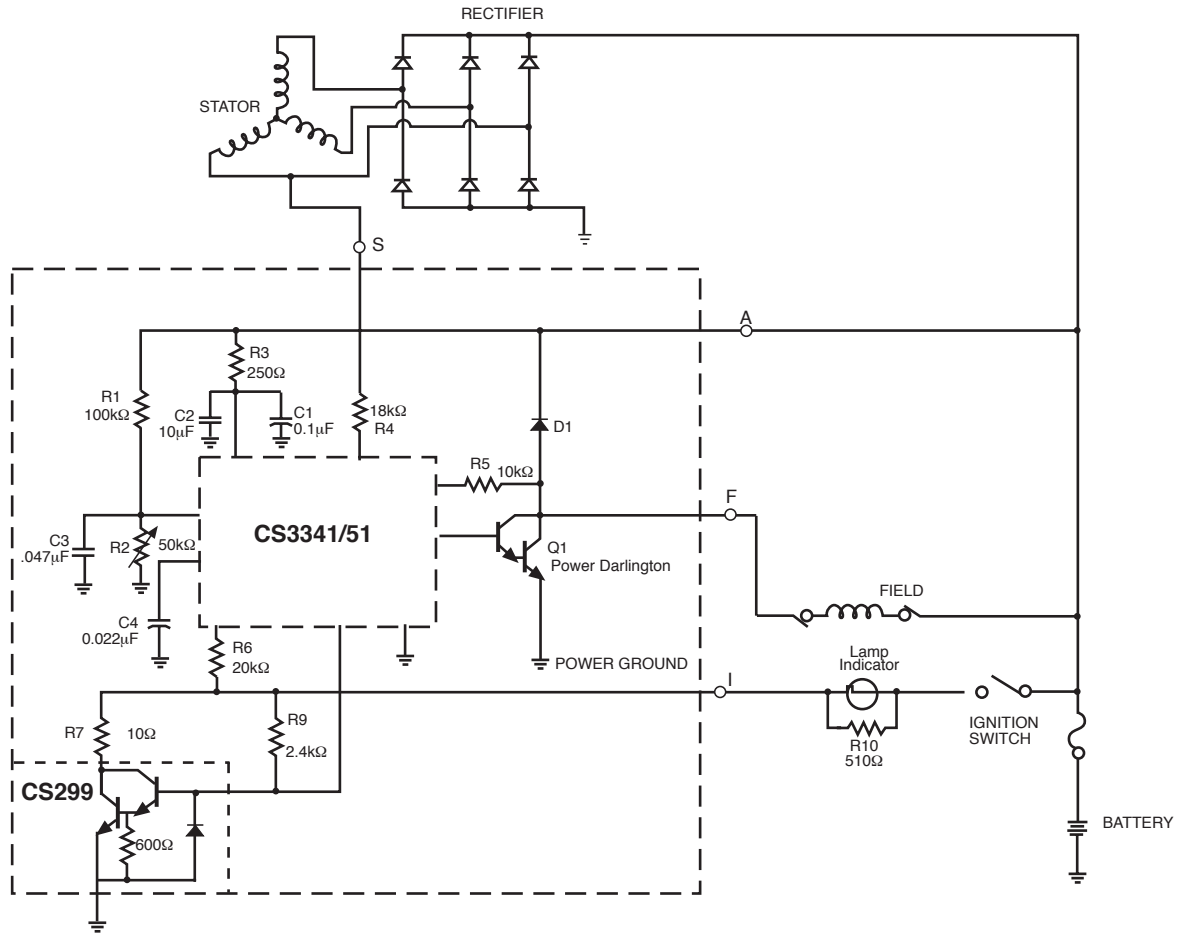
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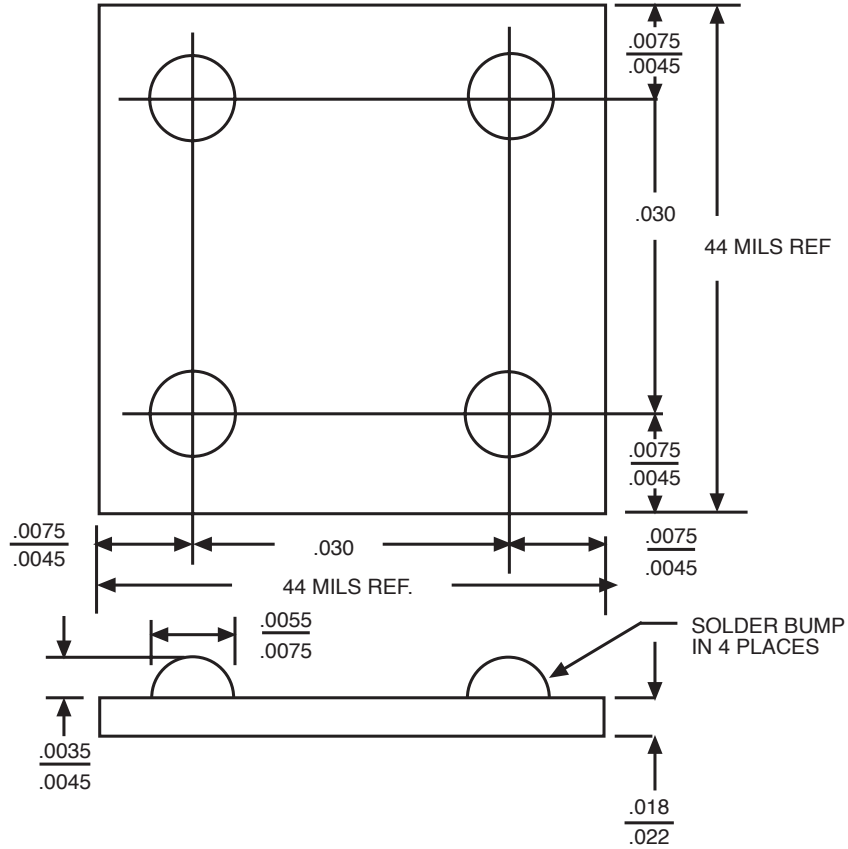
Electrical Characteristics: $T_A = 25^\circ\text{C}$, unless otherwise specified.

| PARAMETER | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---|--|------|-----|------|----------------------------------|
| ■ Supply Requirements | | | | | |
| Saturation Voltage | $I_{B1} = 0.6\text{mA}$, $I_{C2} = 350\text{mA}$ | | | 0.60 | V |
| | $T_J = -30^\circ\text{C}$ | | | 0.55 | V |
| | $T_J = 150^\circ\text{C}$ | | | 0.65 | V |
| Collector Breakdown Voltage | $I_{C1} = I_{C2} = 1.0\text{mA}$, $R_{BE} = 200$, $V_{C1} = V_{C2}$ | 80 | | | V |
| Collector Cut Off Current (I_{CEO}) | $V_{CE1} = V_{CE2} = 60\text{V}$, $R_{BE} = 200$ | | | 10 | μA |
| DC Current Gain (HFE) | $V_{C1} = V_{C2} = 1.0\text{V}$, $I_{B1} = 100\mu\text{A}$ | 1000 | | | $\frac{(I_{C1}+I_{C2})}{I_{B1}}$ |
| NPN β (Q1) | $I_{B1} = 1\mu\text{A}$, $V_{CE2} = 0\text{V}$, $V_{CE1} = 1.5\text{V}$ | 50 | | | $\frac{I_{C1}}{I_{B1}}$ |
| V_{BE} (in saturation) | $I_{B1} = 0.6\text{mA}$, $I_{C1} = 50\text{mA}$, $I_{C2} = 350\text{mA}$ | | | 2.0 | V |
| Diode Forward Voltage (D1) | $I_{D1} = 25\text{mA}$ | 0.5 | | 1.5 | V |

Package Pin Description

| PACKAGE PIN # | PIN SYMBOL | FUNCTION |
|------------------|------------|--|
| Flip Chip | | |
| | B | Base of input darlington. |
| | C1 | Collector of darlington input device. |
| | C2 | Collector of darlington output driver. |
| | E | Emitter of darlington driver. Base/Emitter resistor and substrate are also connected here. |





Note: All dimensions are in inches.

Ordering Information

| Part Number | Description |
|-------------|-------------|
| CS299H | Flip Chip |

Cherry Semiconductor Corporation reserves the right to make changes to the specifications without notice. Please contact Cherry Semiconductor Corporation for the latest available information.