Features

- **Lamp Outage Indication for Car and Trailer**
- **Temperature and Supply Voltage Compensated Flashing Frequency**
- **Relay Driver Output with High Current Carrying Capacity and Low Saturation Voltage**
- **Minimum Lamp Load for Flasher Operation > 10W**

Flasher with Trailer Control

ATA2069

1. Description

The bipolar integrated circuit ATA2069 is designed for the use in relay-operated automotive flasher modules and makes it possible to detect the outage of flasher bulbs on the vehicle itself and also on a trailer.

Vehicles with a trailer hook are equipped with additional pilot lamps in the dashboard.

ATA2069 is off (i.e., the relay is deactivated) as long as the flasher switch (at contact +49a) is open. As soon as this switch is closed, the IC starts reliably with the bright phase.

There are two thresholds integrated: one threshold is defined to be 21 + 10W and is designed for the lamp outage detection of 1 of 2 lamps. If the current is below this threshold, the IC switches to frequency doubling, just like the standard flashers (e.g. U2043B).

The other threshold is defined to be 42 + 10W and is designed for the outage detection of 1 of 3 lamps; if this happens, the additional trailer pilot lamp is switched off, but there is no frequency doubling. 50 ms after the start of the bright phase, the comparator measures the voltage drop at the shunt and latches this value for the rest of the bright phase. The output of this pilot lamp (pin 8) is short-circuit protected against GND. In case of a short circuit the external transistor is switched off after 52 ms for the rest of the current flasher cycle, but it is enabled again for the next cycle.

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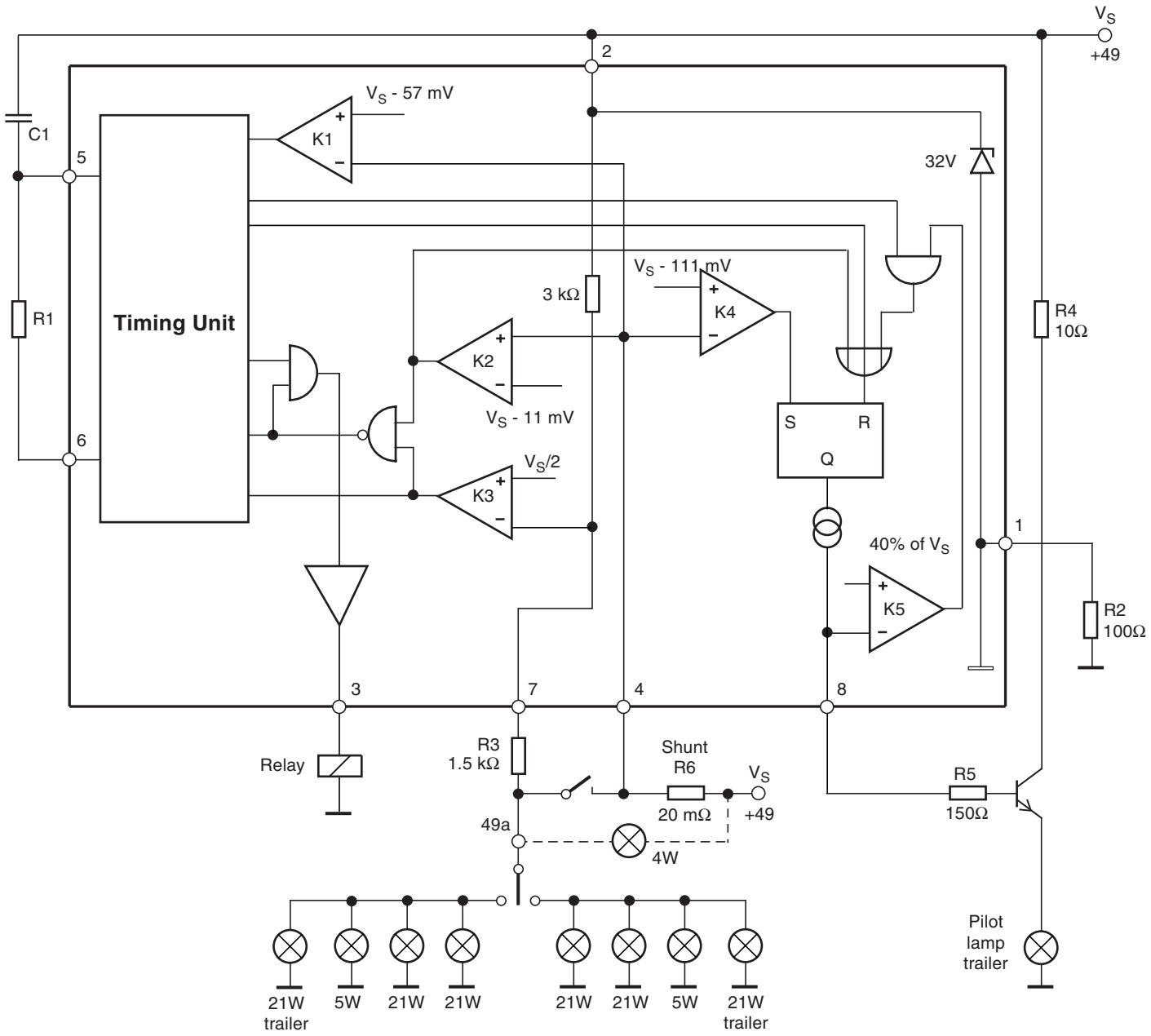
Figure 1-1. Block Diagram



2. Pin Configuration

Figure 2-1. Pinning

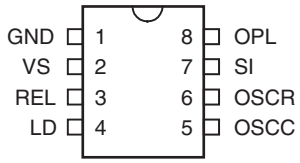


Table 2-1. Pin Description

Pin	Symbol	Function
1	GND	IC ground
2	VS	Supply Voltage
3	REL	Relay driver
4	LD	Lamp failure detection
5	OSCC	Cap. oscillator
6	OSCR	Res. oscillator
7	SI	Start input (49a)
8	OPL	Output pilot lamp

3. Absolute Maximum Ratings

Stresses beyond those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

Parameters	Pin	Symbol	Value	Unit
Supply voltage	2	V_S	16.5	V
Junction temperature		T_J	150	°C
Ambient temperature range		T_{amb}	–40 to +95	°C
Storage temperature range		T_{stg}	–55 to +150	°C
Thermal resistance junction ambient DIP8		R_{thjc}	110	K/W
Thermal resistance junction ambient SO8		R_{thjc}	160	K/W

4. Electrical Characteristics

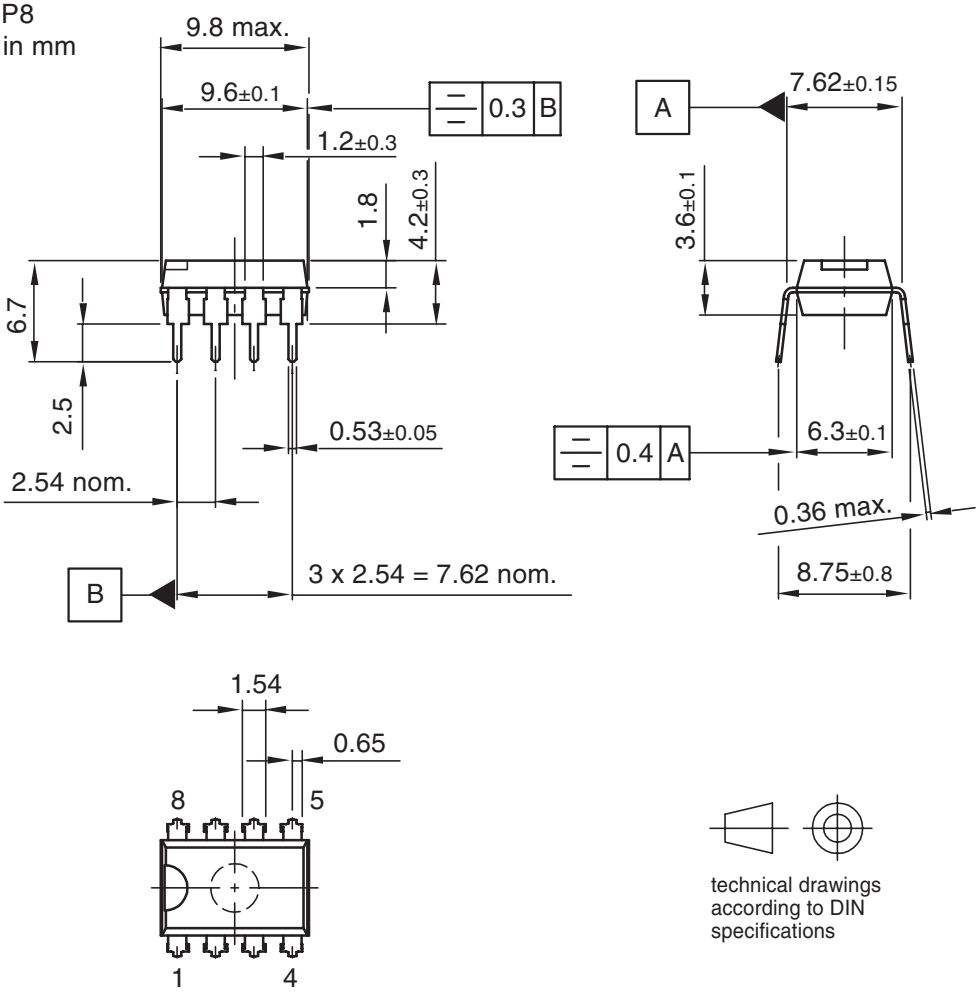
Parameters	Test Conditions	Pin	Symbol	Min.	Typ.	Max.	Unit
Supply voltage range		2	V_S (+49a)		9 to 15		V
Relay output current		3	I_{Rel}			300	mA
Relay saturation voltage	I = 130 mA I = 250 mA	3	V_{Rel}			1 1.5	V V
Relay leakage current		3	I_{Relr}			100	µA
Values for T = 25°C							
Start delay			t_{on}			10	ms
Delay time for output OPL		OPL	t_{Del}	45		55	ms
Switch off delay time output OPL in case of short circuit		OPL	t_{Del}	1.5		2.4	ms
Voltage threshold for short circuit detection at output OPL		OPL	V_{th}	36		44	% of Us
Output current at OPL		OPL	I_O	10		25	mA
Saturation voltage at OPL		OPL	V_{SATO}			300	mV
Control signal threshold K1 for outage detection without trailer operation	V_S = 9V V_S = 13V V_S = 15V		Vk1	47.5 54.2 58	50 57 61	52.2 59.9 64.1	mV mV mV
Control signal threshold K4 for outage detection with trailer operation	V_S = 9V V_S = 13V V_S = 15V		Vk4	96 109 115	98 111 118	100 113 120	mV mV mV
Frequency tolerance			Delta f1	–5		+5	%
Bright period	Basic frequency		Delta f1	47		53	%
Bright period	Frequency doubling		Delta f2	37		45	%
Frequency increase	Lamp outage		f2	2.15 × f		2.3 × f	Hz
Leakage increase	49a to GND		RI			5	kΩ
Lamp load			PL	10			W

5. Ordering Information

Extended Type Number	Package	Remarks
ATA2069-3ASY	DIP8	Tubed, Pb-free
ATA2069-TASY	SO8	Tubed, Pb-free
ATA2069-TAQY	SO8	Taped and reeled, Pb-free

6. Package Information

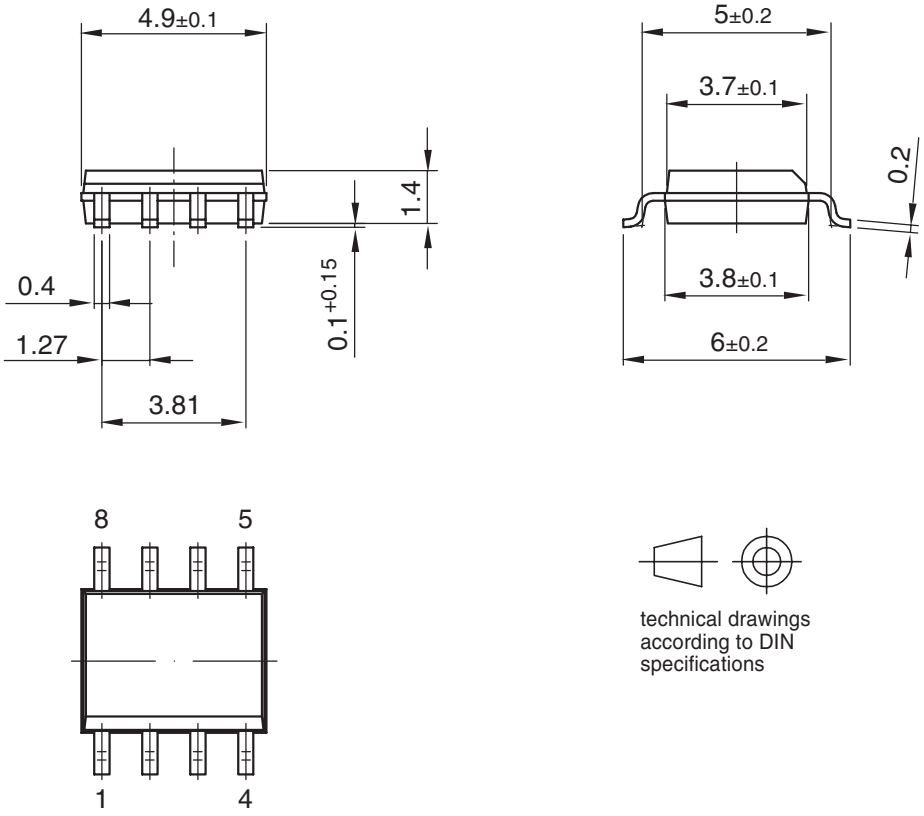
Package: DIP8
Dimensions in mm



Drawing-No.: 6.543-5040.01-4
Issue: 1; 16.01.02

Package: SO 8

Dimensions in mm



Drawing-No.: 6.541-5031.01-4

Issue: 1; 15.08.06

7. Revision History

Please note that the following page numbers referred to in this section refer to the specific revision mentioned, not to this document.

Revision No.	History
4917C-AUTO-10/07	• Put datasheet in a new template • Section 5 “Ordering Information” on page 5 changed.
4917B-AUTO-03/06	• Section 5 “Ordering Information” on page 5 changed.

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