

Schmitt-Trigger IC im TO-18 Gehäuse mit Glaslinse
Schmitt-Trigger IC in TO-18 Package with Glass Lens
Lead (Pb) Free Product - RoHS Compliant

SFH 5840
SFH 5841



Wesentliche Merkmale

- SFH 5840: Ausgang active low
- SFH 5841: Ausgang active high
- Hermetisch dichte Metallbauform
- Geeignet für Anwendungen im Bereich von 400 nm bis 1100 nm

Features

- SFH 5840: Output active low
- SFH 5841: Output active high
- Hermetically sealed metal package (TO-18)
- Suitable for applications from 400 nm to 1100 nm

Anwendungen

- Optischer Schalter
- Pulsformer
- Zähler

Applications

- Optical threshold switch
- Pulseformer
- Counter

Typ Type	Bestellnummer Ordering Code	Gehäuse Package
SFH 5840	Q62702P5116	Metallbauform (TO-18), OUT-Kennzeichnung: „Nase“ am Gehäuse
SFH 5841	Q62702P5117	Metal package (TO-18), OUT-marking: projection at package

Grenzwerte ($T_A = 25\text{ °C}$)**Maximum Ratings**

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Betriebs- und Lagertemperatur Operating and storage temperature range	$T_{op}; T_{stg}$	- 40 ... + 85	°C
Versorgungsspannung Supply voltage	V_{CC}	- 0.5 ... + 20	V
Ausgangsspannung Output voltage	V_O	- 0.5 ... + 20	V
Ausgangsstrom Output current	I_O	50	mA
Verlustleistung Power dissipation	P_{tot}	175	mW

Empfohlener Arbeitsbereich**Recommended Operating Conditions**

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Versorgungsspannung Supply voltage	V_{CC}	4 ... 18	V
Ausgangsstrom Output current	I_O	< 16	mA

Zur Stabilisierung der Versorgung wird ein Stützkondensator (angeschlossen zwischen V_{CC} und GND) von typ. 0.1 μF empfohlen.

A bypass capacitor, 0.1 μF typical, connected between V_{CC} and GND is recommended in order to stabilize power supply line.

Kennwerte ($T_A = 25\text{ °C}$, $V_{CC} = 5\text{ V}$)**Characteristics**

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Ausgangsspannung „high“ Output voltage “high” $I_O = 0$	V_{OH}	$V_{CC} (> 4.0)$	V
Ausgangsspannung „low“ Output voltage “low” $I_O = 16\text{ mA}$	V_{OL}	0.15 (< 0.4)	V

Kennwerte ($T_A = 25\text{ °C}$, $V_{CC} = 5\text{ V}$)

Characteristics (cont'd)

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Stromaufnahme, $E = 0$ Supply current $V_{CC} = 5\text{ V}$ $V_{CC} = 18\text{ V}$	I_{CC}	3.3 (< 5) 5.0	mA
Schaltsschwelle, $\lambda = 950\text{ nm}$ Threshold SFH 5840: "H" → "L" SFH 5841: "L" → "H"	$E_{e, ON}$	10 (< 32)	$\mu\text{W}/\text{cm}^2$
Hysterese Hysteresis	$E_{e, OFF} / E_{e, ON}$	0.6 (0.5 ... 0.9)	–
Halbwinkel Half angle	φ	± 5	Grad degr.
Anstiegszeit 10% bis 90% Rise time 10% to 90% $R_L = 280\ \Omega$, $E_e = 60\ \mu\text{W}/\text{cm}^2$, $\lambda = 950\text{ nm}$	t_r	100	ns
Abfallzeit 90% bis 10% Fall time 90% to 10% $R_L = 280\ \Omega$, $E_e = 60\ \mu\text{W}/\text{cm}^2$, $\lambda = 950\text{ nm}$	t_f	100	ns
Ausgangsverzögerungszeit Propagation delay time "H" → "L" $R_L = 280\ \Omega$, $E_e = 60\ \mu\text{W}/\text{cm}^2$, $\lambda = 950\text{ nm}$	t_{PHL}	5 (< 15)	μs
Ausgangsverzögerungszeit Propagation delay time "L" → "H" $R_L = 280\ \Omega$, $E_e = 60\ \mu\text{W}/\text{cm}^2$, $\lambda = 950\text{ nm}$	t_{PLH}	5 (< 15)	μs

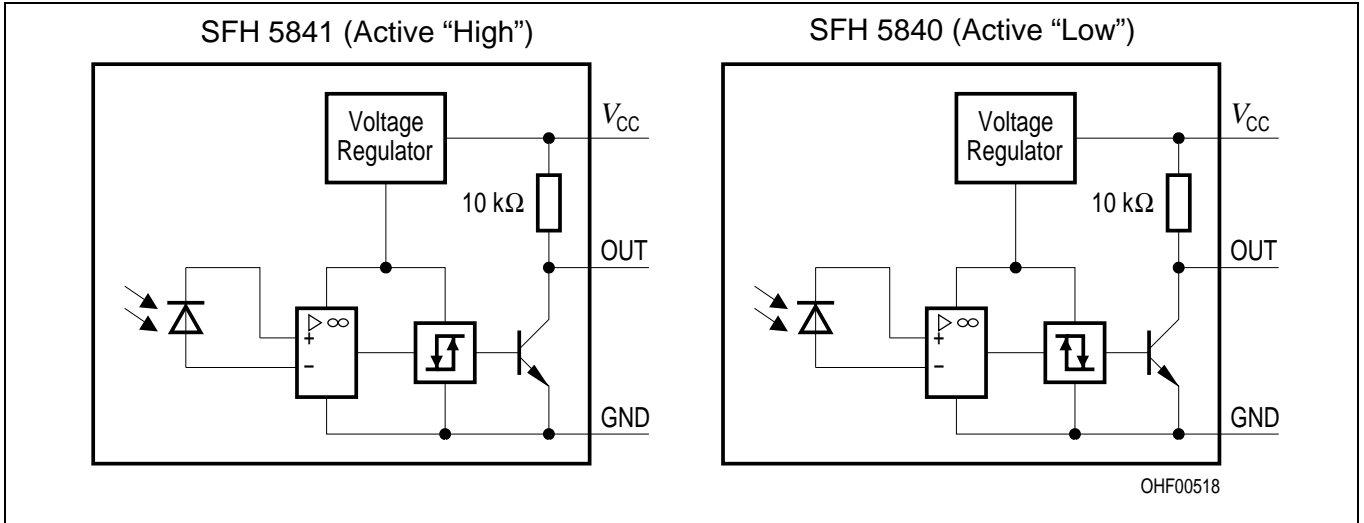


Figure 1 Block Diagram

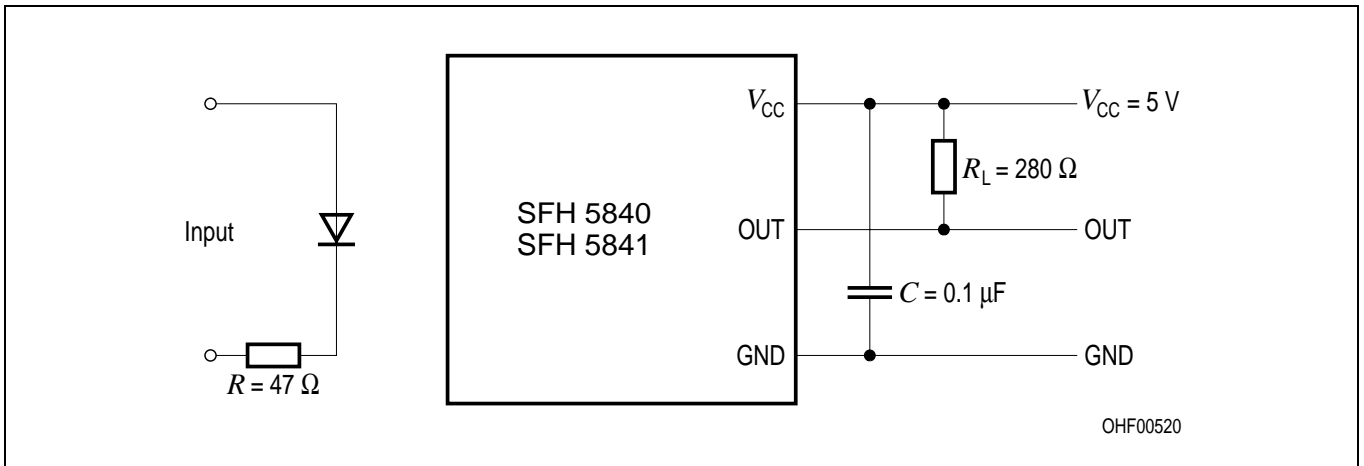


Figure 2 Test Circuit for Switching and Response Time

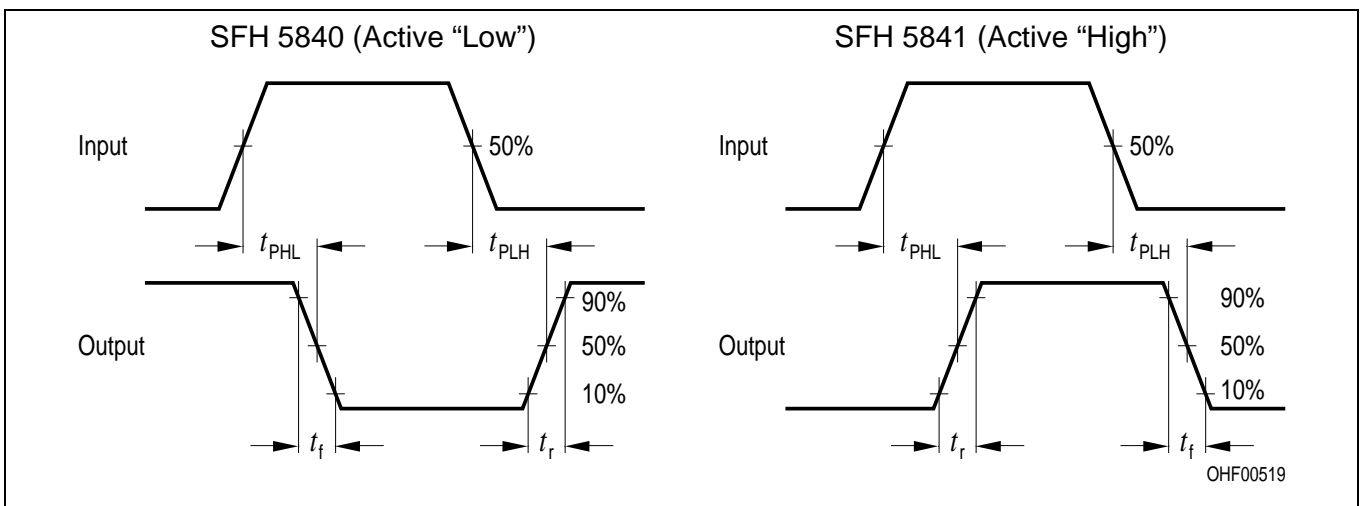
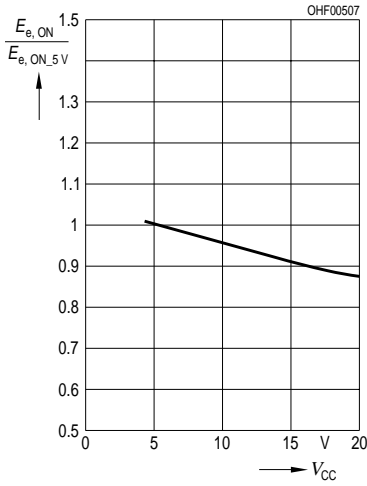


Figure 3 Switching Time Definitions

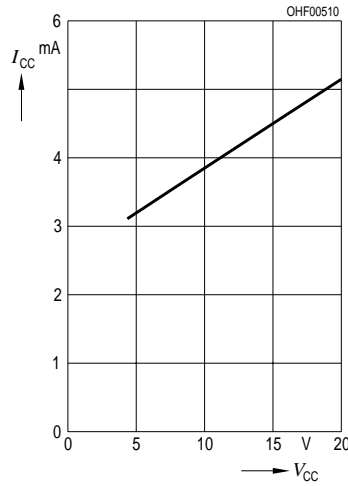
Relative Threshold

$$E_{e, ON} / E_{e, ON} (V_{CC} = 5 V) = f(V_{CC})$$



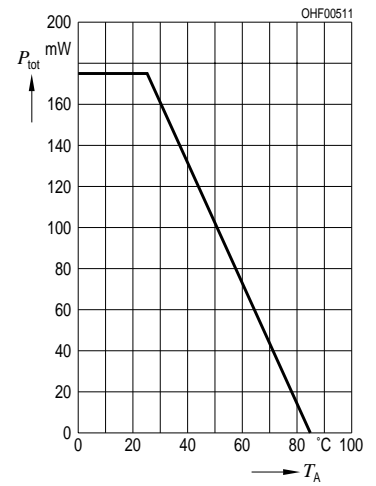
Supply Current

$$I_{CC} = f(V_{CC})$$



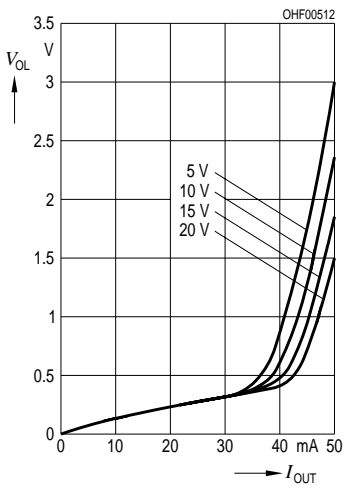
Total Power Dissipation

$$P_{tot} = f(T_A)$$



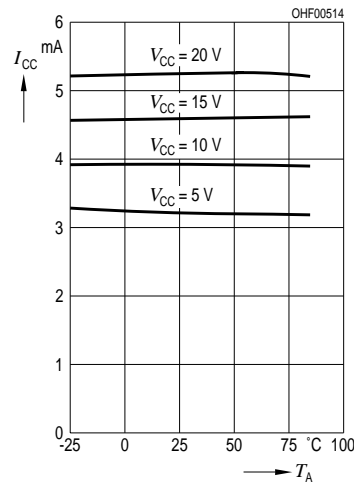
Output Voltage

$$V_{OL} = f(I_{OUT}, V_{CC})$$

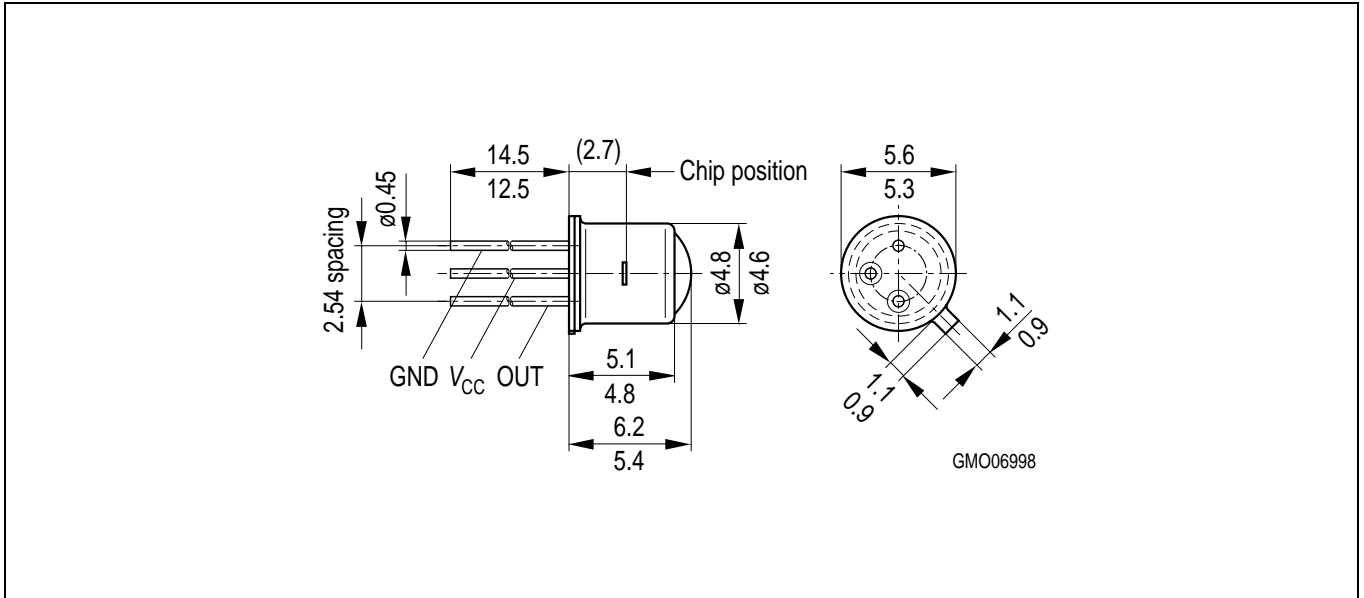


Supply Current vs. Ambient Temperature

$$I_{CC} = f(T_A, V_{CC})$$



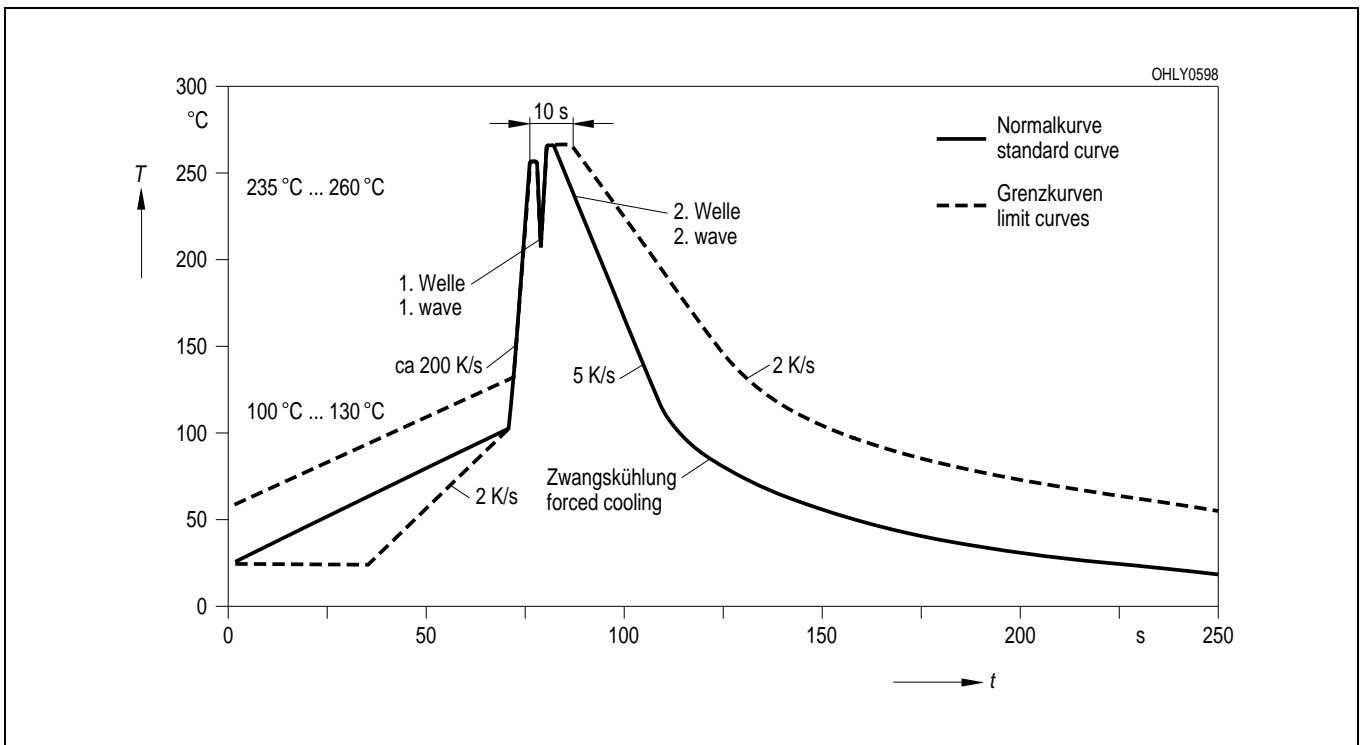
**Maßzeichnung
Package Outlines**



Maße in mm, wenn nicht anders angegeben / Dimensions in mm, unless otherwise specified.

**Lötbedingungen
Soldering Conditions
Wellenlöten (TTW)
TTW Soldering**

(nach CECC 00802)
(acc. to CECC 00802)



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