

**GaAlAs-IR-Lumineszenzdiode (880 nm)**  
**GaAlAs Infrared Emitters (880 nm)**  
**Lead (Pb) Free Product - RoHS Compliant**

**SFH 484**  
**SFH 485**



SFH 484



SFH 485

**Wesentliche Merkmale**

- GaAlAs-LED mit sehr hohem Wirkungsgrad
- Hohe Zuverlässigkeit
- Gute spektrale Anpassung an Si-Fotoempfänger
- Gegurtet lieferbar (im Ammo-Pack)
- Gruppiert lieferbar
- SFH 484: Gehäusegleich mit LD 274
- SFH 485: Gehäusegleich mit SFH 300, SFH 203

**Features**

- Very highly efficient GaAlAs-LED
- High reliability
- Spectral match with silicon photodetectors
- Available on tape and reel (in Ammo-pack)
- Available in bins
- SFH 484: Same package as LD 274
- SFH 485: Same package as SFH 300, SFH 203

**Anwendungen**

- IR-Fernsteuerung von Fernseh- und Rundfunkgeräten, Videorecordern, Lichtdimmern
- Gerätefernsteuerungen für Gleich- und Wechsellichtbetrieb
- Rauchmelder (UL-Freigabe)
- Sensorik
- Diskrete Lichtschranken

**Applications**

- IR remote control of hi-fi and TV-sets, video tape recorders, dimmers
- Remote control for steady and varying intensity
- Smoke detectors (UL-approval)
- Sensor technology
- Discrete interrupters

Typ Type	Bestellnummer Ordering Code	Gehäuse Package
SFH 484	Q62703Q1092	5-mm-LED-Gehäuse (T 1 3/4), klares violettes Epoxy-Gießharz, Anschlüsse im 2.54-mm-Raster (1/10"), Anodenkennzeichnung: kürzerer Anschluß 5 mm LED package (T 1 3/4), violet-colored epoxy resin, solder tabs lead spacing 2.54 mm (1/10"), anode marking: short lead
SFH 484-2	Q62703Q1756	
SFH 485	Q62703Q1093	
SFH 485-2	Q62703Q1547	

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 ... + 100	°C
Sperrspannung Reverse voltage	$V_R$	5	V
Durchlaßstrom Forward current	$I_F$	100	mA
Stoßstrom, $t_p = 10\ \mu\text{s}$ , $D = 0$ Surge current	$I_{FSM}$	2.5	A
Verlustleistung Power dissipation	$P_{tot}$	200	mW
Wärmewiderstand, freie Beinchenlänge max. 10 mm Thermal resistance, lead length between package bottom and PC-board max. 10 mm	$R_{thJA}$	375	K/W

Kennwerte ( $T_A = 25\text{ °C}$ )

## Characteristics

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Wellenlänge der Strahlung Wavelength at peak emission $I_F = 100\text{ mA}$	$\lambda_{\text{peak}}$	880	nm
Spektrale Bandbreite bei 50% von $I_{\text{rel}}$ Spectral bandwidth at 50% of $I_{\text{rel}}$ $I_F = 100\text{ mA}$	$\Delta\lambda$	80	nm
Abstrahlwinkel Half angle SFH 484 SFH 485	$\varphi$ $\varphi$	$\pm 8$ $\pm 20$	Grad deg.
Aktive Chipfläche Active chip area	$A$	0.09	mm <sup>2</sup>
Abmessungen der aktiven Chipfläche Dimension of the active chip area	$L \times B$ $L \times W$	$0.3 \times 0.3$	mm <sup>2</sup>
Abstand Chipoberfläche bis Linsenscheitel Distance chip front to lens top SFH 484 SFH 485	$H$ $H$	5.1 ... 5.7 4.2 ... 4.8	mm mm
Schaltzeiten, $I_e$ von 10% auf 90% und von 90% auf 10%, bei $I_F = 100\text{ mA}$ , $R_L = 50\ \Omega$ Switching times, $I_e$ from 10% to 90% and from 90% to 10%, $I_F = 100\text{ mA}$ , $R_L = 50\ \Omega$	$t_r, t_f$	0.6/0.5	$\mu\text{s}$
Kapazität Capacitance $V_R = 0\text{ V}$ , $f = 1\text{ MHz}$	$C_o$	15	pF
Durchlaßspannung Forward voltage $I_F = 100\text{ mA}$ , $t_p = 20\text{ ms}$ $I_F = 1\text{ A}$ , $t_p = 100\ \mu\text{s}$	$V_F$ $V_F$	1.50 ( $\leq 1.8$ ) 3.00 ( $\leq 3.8$ )	V V
Sperrstrom, Reverse current $V_R = 5\text{ V}$	$I_R$	0.01 ( $\leq 1$ )	$\mu\text{A}$
Gesamtstrahlungsfluß, Total radiant flux $I_F = 100\text{ mA}$ , $t_p = 20\text{ ms}$	$\Phi_e$	25	mW

**Kennwerte** ( $T_A = 25\text{ °C}$ )  
**Characteristics** (cont'd)

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Temperaturkoeffizient von $I_e$ bzw. $\Phi_e$ , $I_F = 100\text{ mA}$ Temperature coefficient of $I_e$ or $\Phi_e$ , $I_F = 100\text{ mA}$	$TC_I$	- 0.5	%/K
Temperaturkoeffizient von $V_F$ , $I_F = 100\text{ mA}$ Temperature coefficient of $V_F$ , $I_F = 100\text{ mA}$	$TC_V$	- 2	mV/K
Temperaturkoeffizient von $\lambda$ , $I_F = 100\text{ mA}$ Temperature coefficient of $\lambda$ , $I_F = 100\text{ mA}$	$TC_\lambda$	0.25	nm/K

**Gruppierung der Strahlstärke  $I_e$  in Achsrichtung**

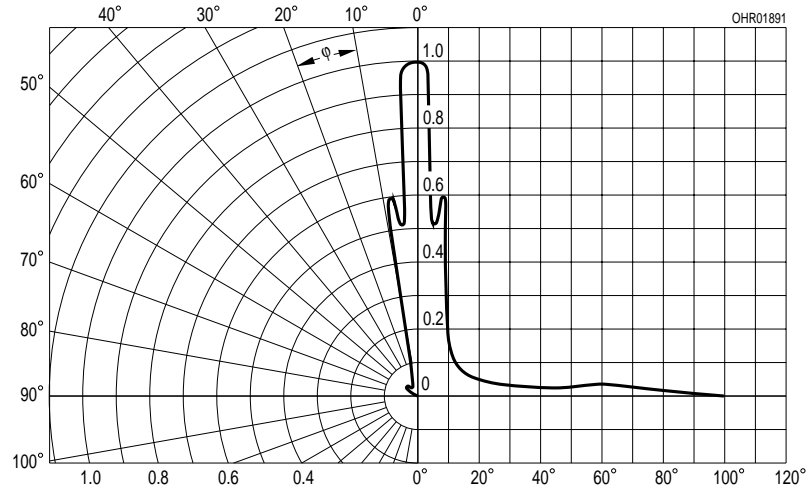
gemessen bei einem Raumwinkel  $\Omega = 0.001\text{ sr}$  bei SFH 484 bzw.  $\Omega = 0.01\text{ sr}$  bei SFH 485

**Grouping of Radiant Intensity  $I_e$  in Axial Direction**

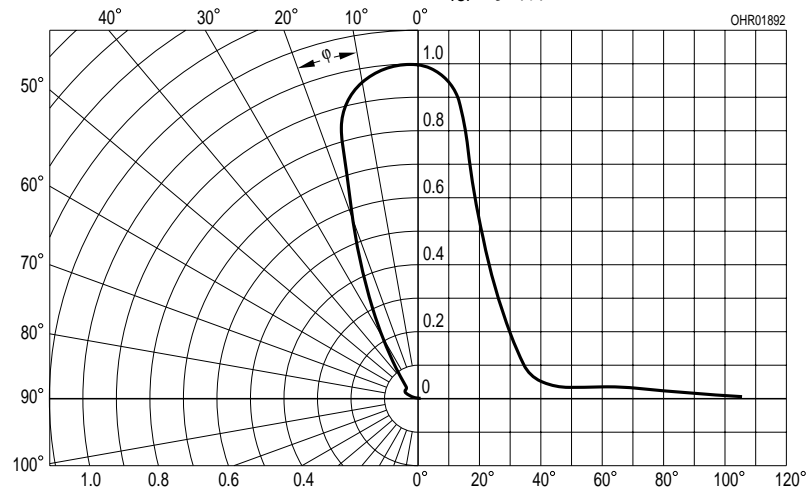
at a solid angle of  $\Omega = 0.001\text{ sr}$  at SFH 484 or  $\Omega = 0.01\text{ sr}$  at SFH 485

Bezeichnung Parameter	Symbol	Wert Value					Einheit Unit
		SFH 484	SFH 484-1	SFH 484-2	SFH 485	SFH 485-2	
Strahlstärke Radiant intensity $I_F = 100\text{ mA}$ , $t_p = 20\text{ ms}$	$I_{e\text{ min}}$ $I_{e\text{ max}}$	50 -	50 100	80 -	25 160	25 100	mW/sr mW/sr
Strahlstärke Radiant intensity $I_F = 1\text{ A}$ , $t_p = 100\text{ }\mu\text{s}$	$I_{e\text{ typ.}}$	800	700	900	300	340	mW/sr

Radiation Characteristics, SFH 484  $I_{rel} = f(\varphi)$

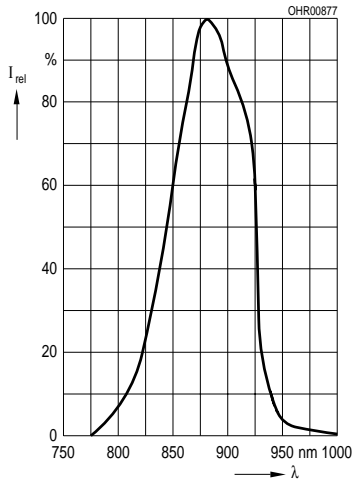


Radiation Characteristics SFH 485  $I_{rel} = f(\varphi)$



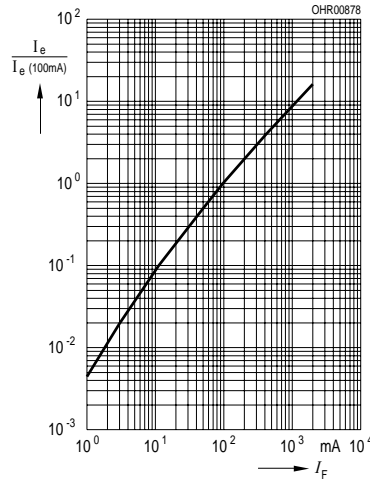
**Relative Spectral Emission**

$I_{rel} = f(\lambda)$



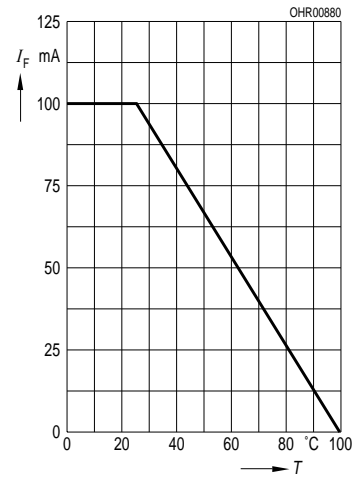
**Radiant Intensity**  $\frac{I_e}{I_e 100 \text{ mA}} = f(I_F)$

Single pulse,  $t_p = 20 \mu\text{s}$



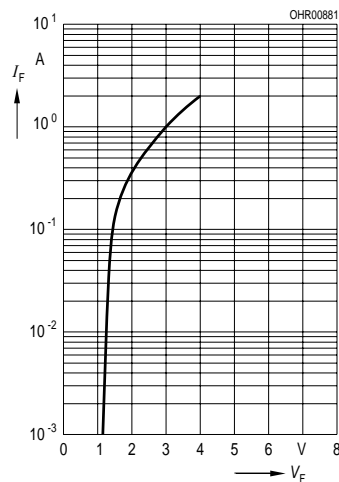
**Max. Permissible Forward Current**

$I_F = f(T_A)$

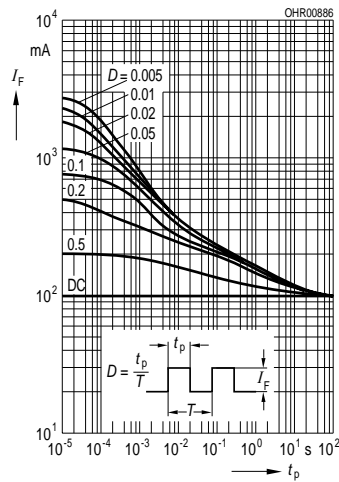


**Forward Current**

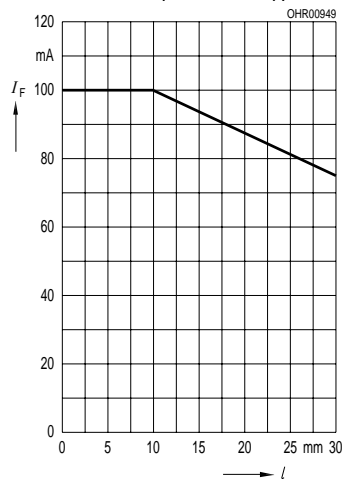
$I_F = f(V_F)$ , single pulse,  $t_p = 20 \mu\text{s}$



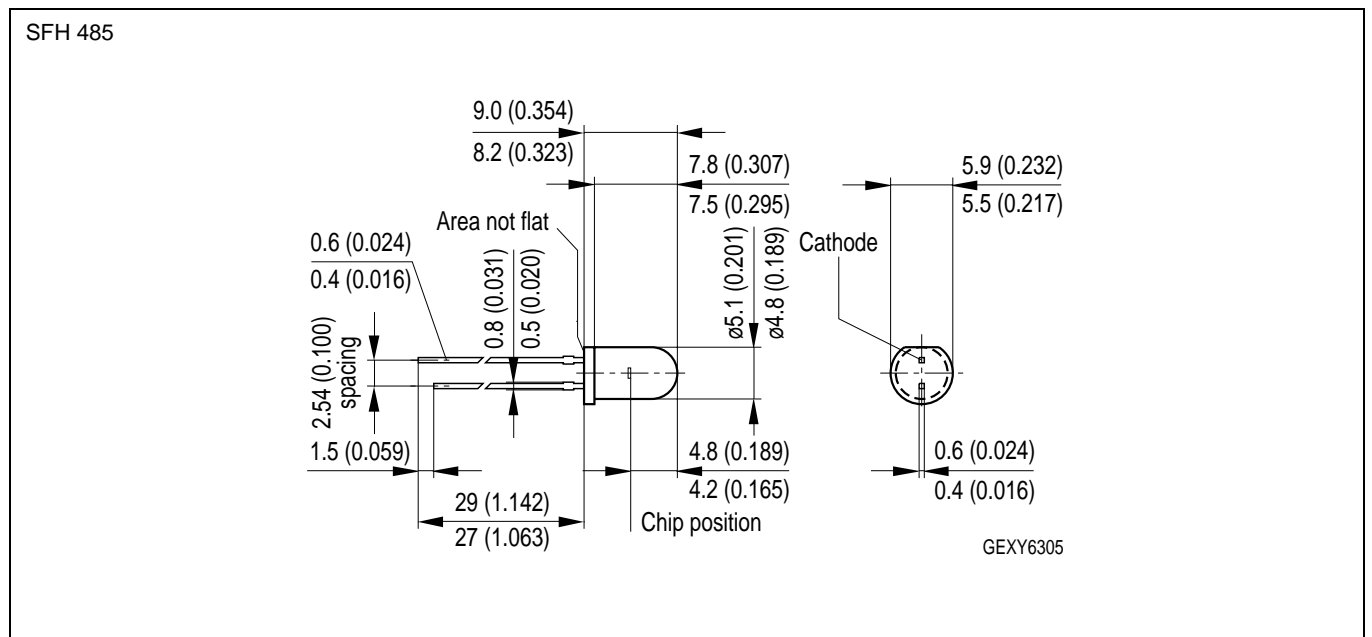
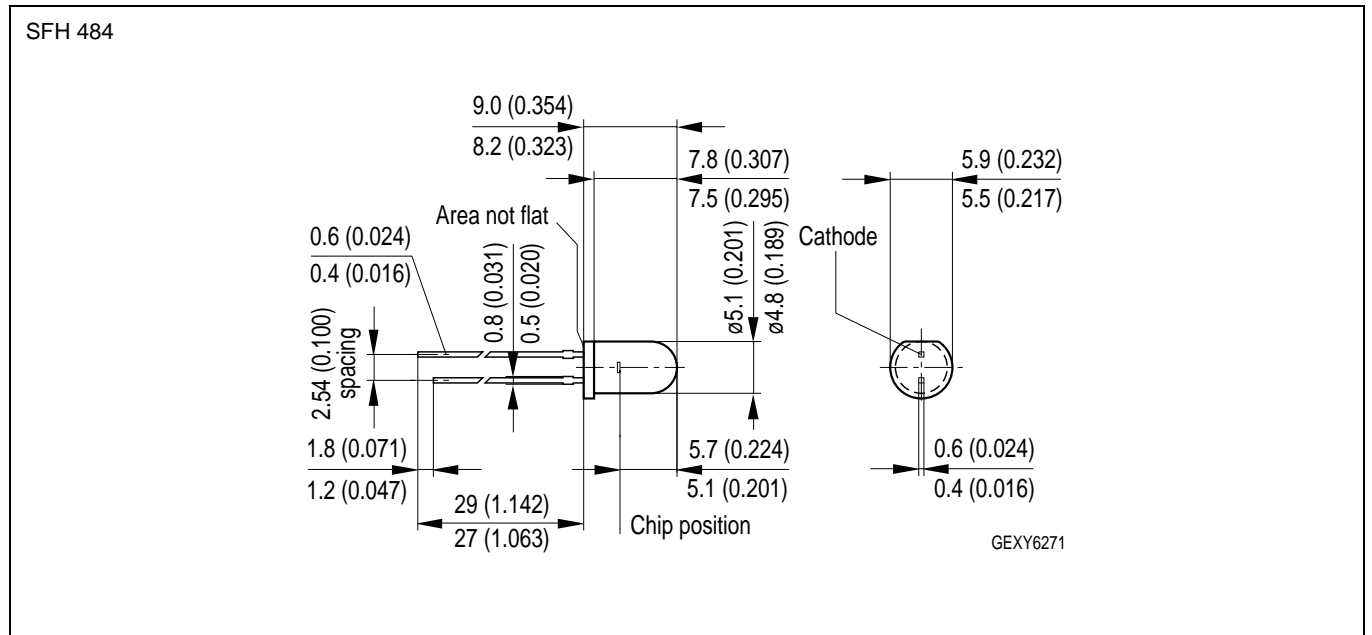
**Permissible Pulse Handling Capability**  $I_F = f(\tau)$ ,  $T_A = 25^\circ\text{C}$ , duty cycle  $D =$  parameter



**Forward Current vs. Lead Length between the Package Bottom and the PC-Board**  $I_F = f(l)$ ,  $T_A = 25^\circ\text{C}$



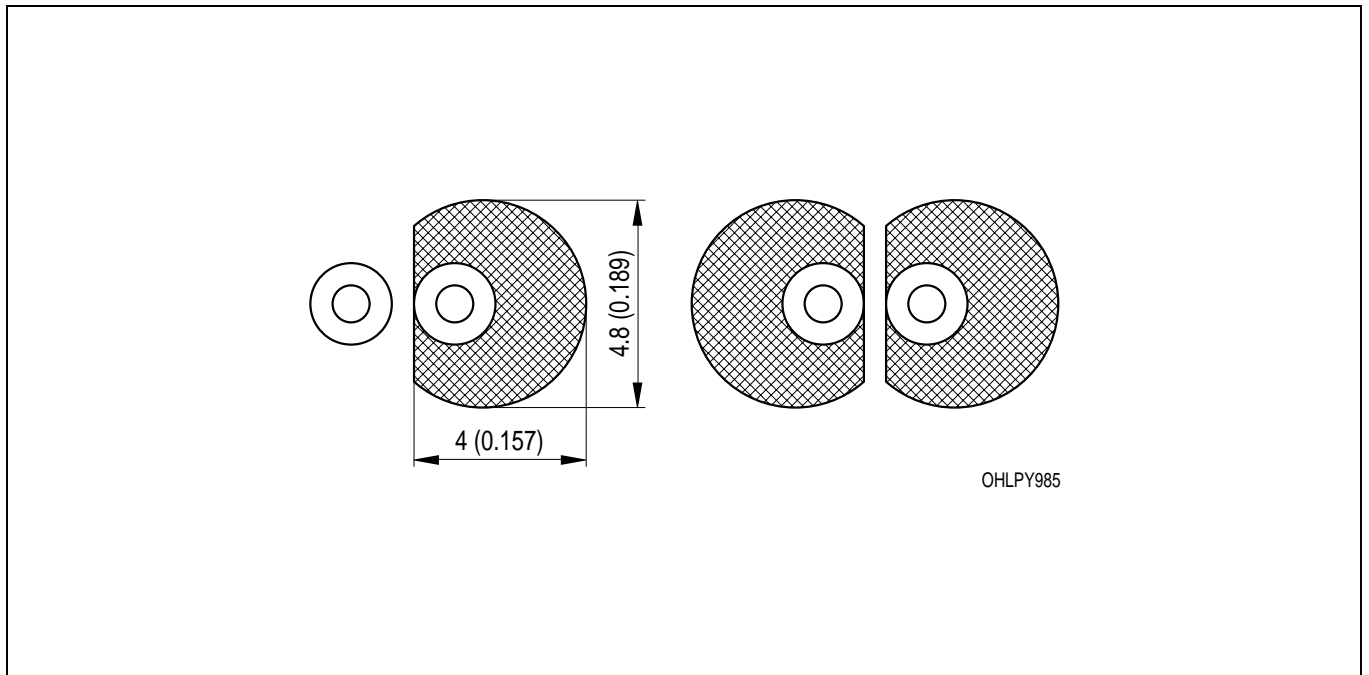
Maßzeichnung  
Package Outlines



Maße in mm (inch) / Dimensions in mm (inch).

**Empfohlenes Lötpaddesign**  
**Recommended Solder Pad**

Wellenlöten (TTW)  
 TTW Soldering

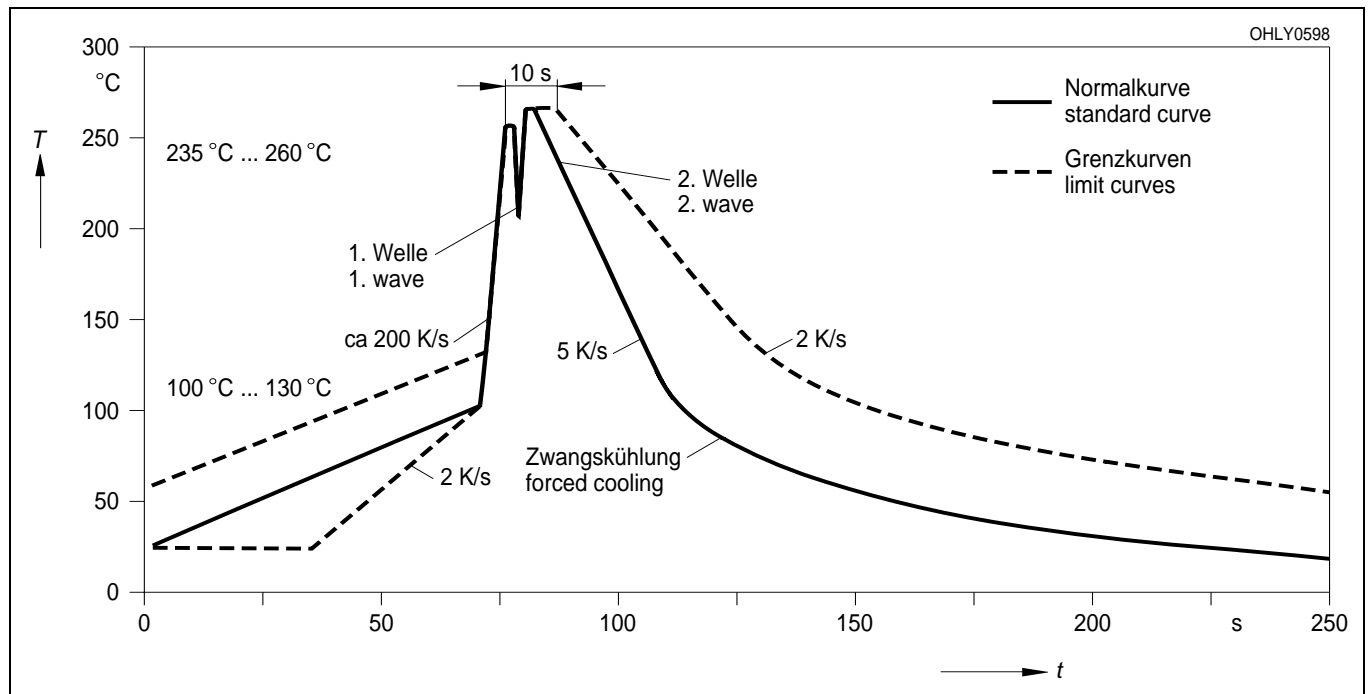


Maße in mm (inch) / Dimensions in mm (inch).



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

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



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