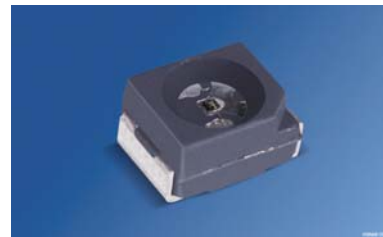


Rote Punktlichtquelle
Red Pointsource Emitter
Lead (Pb) Free Product - RoHS Compliant

SFH 4276



Nicht für Neuentwicklungen / Not for new designs

Wesentliche Merkmale

- Schwarz eingefärbtes TOPLED-Gehäuse
- Typische Emissionswellenlänge 655nm
- Runde Emissionsfläche mit Durchmesser 170µm
- Keine Seitenstrahlung
- IR Reflow und TTW Löten geeignet
- Feuchte-Empfindlichkeitsstufe 2 nach JEDEC Standard J-STD-020C

Features

- Black coloured TOPLED-package
- Typical Peakwavelength 655nm
- Emission area with diameter 170µm
- No side emission
- Suited for IR Reflow and TTW-soldering
- Moisture sensitivity level 2 according to JEDEC Standard J-STD-020C

Anwendungen

- Miniaturlichtschranken und Lichtschranken über große Entfernungen
- Industrieelektronik
- „Messen/Steuern/Regeln“
- Automobiltechnik
- Sensorik
- Alarm- und Sicherungssysteme

Applications

- Miniature and long distance photointerrupters
- Industrial electronics
- For drive and control circuits
- Automotive technology
- Sensor technology
- Alarm and safety equipment

Typ Type	Bestellnummer Ordering Code	Strahlstärkegruppierung ¹⁾ ($I_F = 50 \text{ mA}$, $t_p = 20 \text{ ms}$) Radiant intensity grouping ¹⁾ I_e (mW/sr)
SFH 4276	Q65110A2524	1.2 ($0.63 \leq \dots \leq 2$)

¹⁾ gemessen bei einem Raumwinkel $\Omega = 0.01 \text{ sr}$ / measured at a solid angle of $\Omega = 0.01 \text{ sr}$

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	50	mA
Pulsstrom, $\tau = 10\ \mu\text{s}$, $D = 0.1$ puls current	I_{Fp}	500	mA
Verlustleistung Power dissipation	P_{tot}	125	mW
Wärmewiderstand Sperrschicht - Umgebung bei Montage auf FR4 Platine, Padgröße je $16\ \text{mm}^2$ Thermal resistance junction - ambient mounted on PC-board (FR4), pads size $16\ \text{mm}^2$ each	R_{thJA}	300	K/W
Elektrostatische Entladung Electrostatic discharge	ESD	2	kV

Kennwerte ($T_A = 25\text{ °C}$)

Characteristics

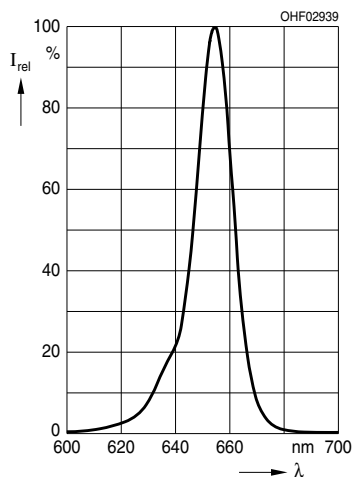
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Wellenlänge der Strahlung Wavelength at peak emission $I_F = 20\text{ mA}$, $t_p = 20\text{ ms}$	λ_{peak}	655	nm
Spektrale Bandbreite bei 50% von I_{max} Spectral bandwidth at 50% of I_{max} $I_F = 20\text{ mA}$	$\Delta\lambda$	16	nm
Abstrahlwinkel Half angle	φ	± 60	Grad deg.
Aktive Chipfläche Active chip area	A	0.019	mm ²
Durchmesser der aktiven Chipfläche Diameter of the active chip area	D	170	μm
Durchlaßspannung, Forward voltage $I_F = 50\text{ mA}$, $t_p = 20\text{ ms}$	V_F	2.1 (≤ 2.6)	V
Sperrstrom, Reverse current $V_R = 5\text{ V}$	I_R	0.01 (≤ 10)	μA
Gesamtstrahlungsfluß, Total radiant flux $I_F = 50\text{ mA}$, $t_p = 20\text{ ms}$	Φ_e	3.5	mW
Temperaturkoeffizient von I_e bzw. Φ_e Temperature coefficient of I_e or Φ_e $I_F = 50\text{ mA}$	TC_I	-0.5	%/K
Temperaturkoeffizient von V_F Temperature coefficient of V_F $I_F = 50\text{ mA}$	TC_V	-2.5	mV/K
Temperaturkoeffizient von λ Temperature coefficient of λ $I_F = 50\text{ mA}$	TC_λ	0.14	nm/K

Strahlstärke I_e in Achsrichtunggemessen bei einem Raumwinkel $\Omega = 0.01$ sr**Radiant Intensity I_e in Axial Direction**at a solid angle of $\Omega = 0.01$ sr

Bezeichnung Parameter	Symbol	Werte Values		Einheit Unit
		-K	-L	
Strahlstärke	I_{emin}	0.63	1	mW/sr
Radiant intensity	I_{emax}	1.25	2	
$I_F = 50$ mA, $t_p = 20$ ms				

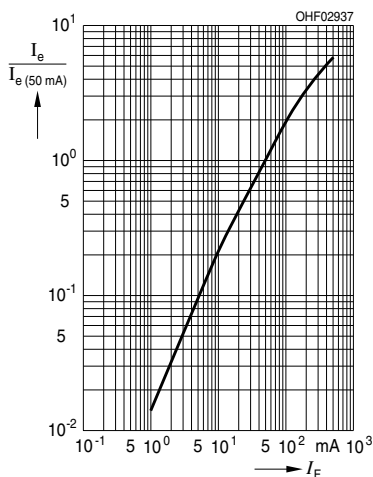
Relative Spectral Emission

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



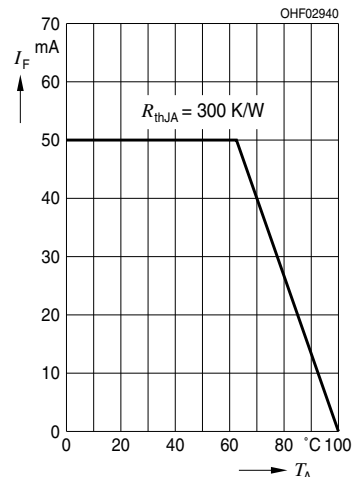
Radiant Intensity

$I_e / I_{e(50\text{ mA})} = f(I_F)$



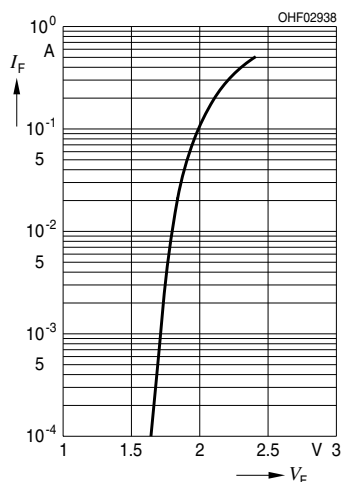
Max. Permissible Forward Current

$I_F = f(T_A)$

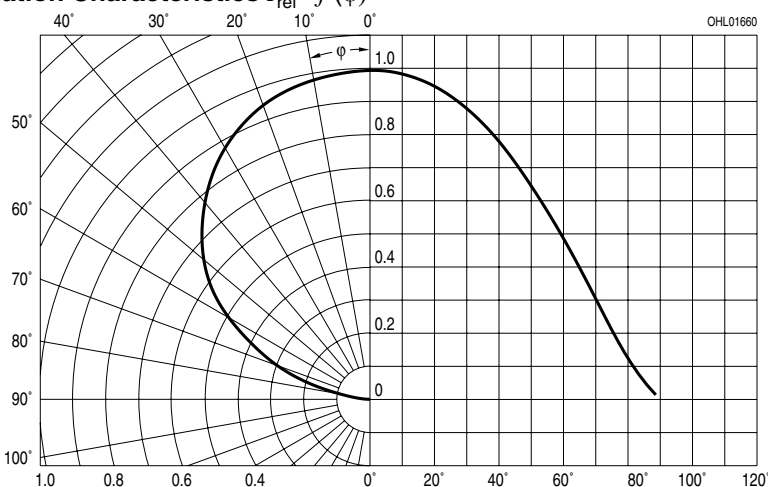


Forward Current

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



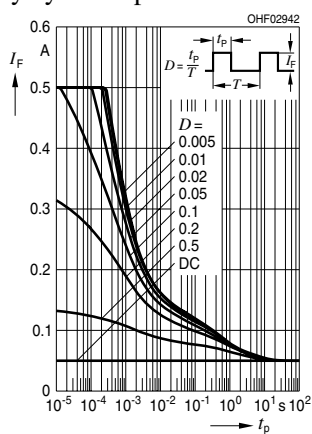
Radiation Characteristics $I_{rel} = f(\varphi)$ (Farfield)



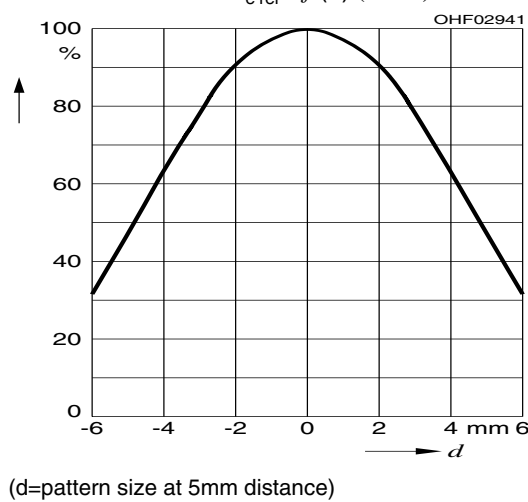
Permissible Puls Handling Capability

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

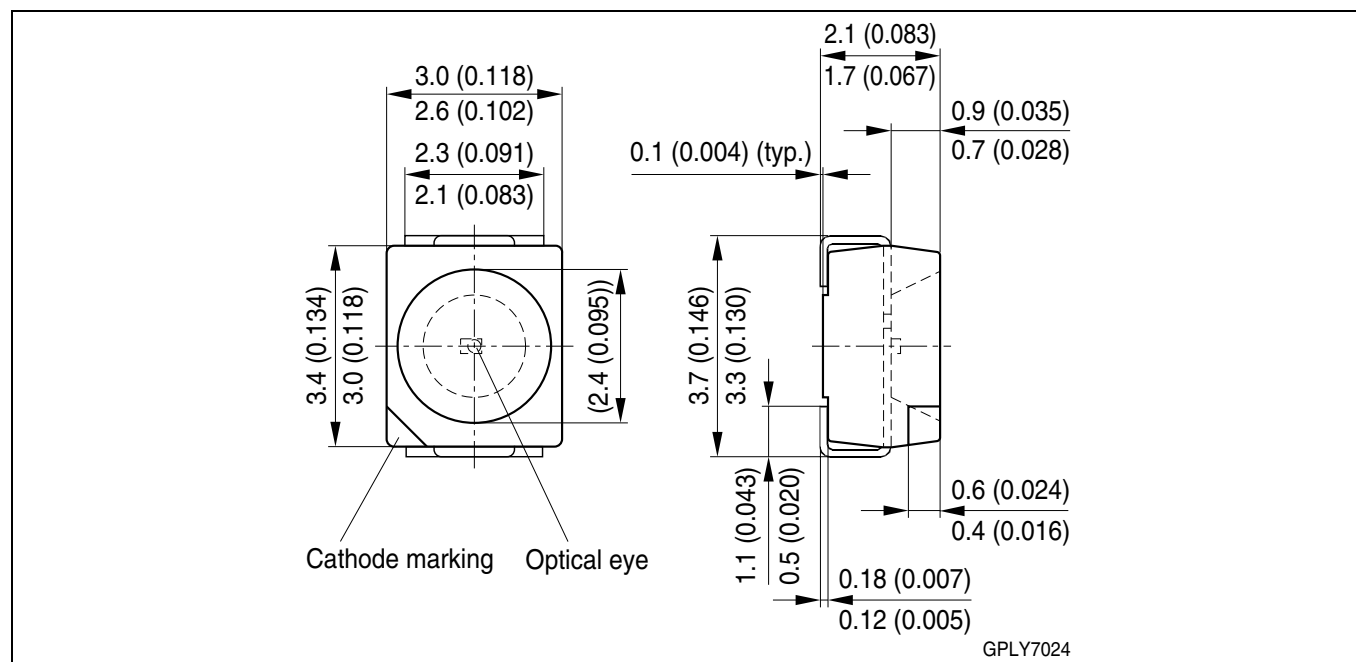
duty cycle $D = \text{parameter}$



Radiation Pattern $E_{e\text{ rel}} = f(d)$ (5mm)



Maßzeichnung Package Outlines



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

Gehäusefarbe: schwarz, Verguss klar

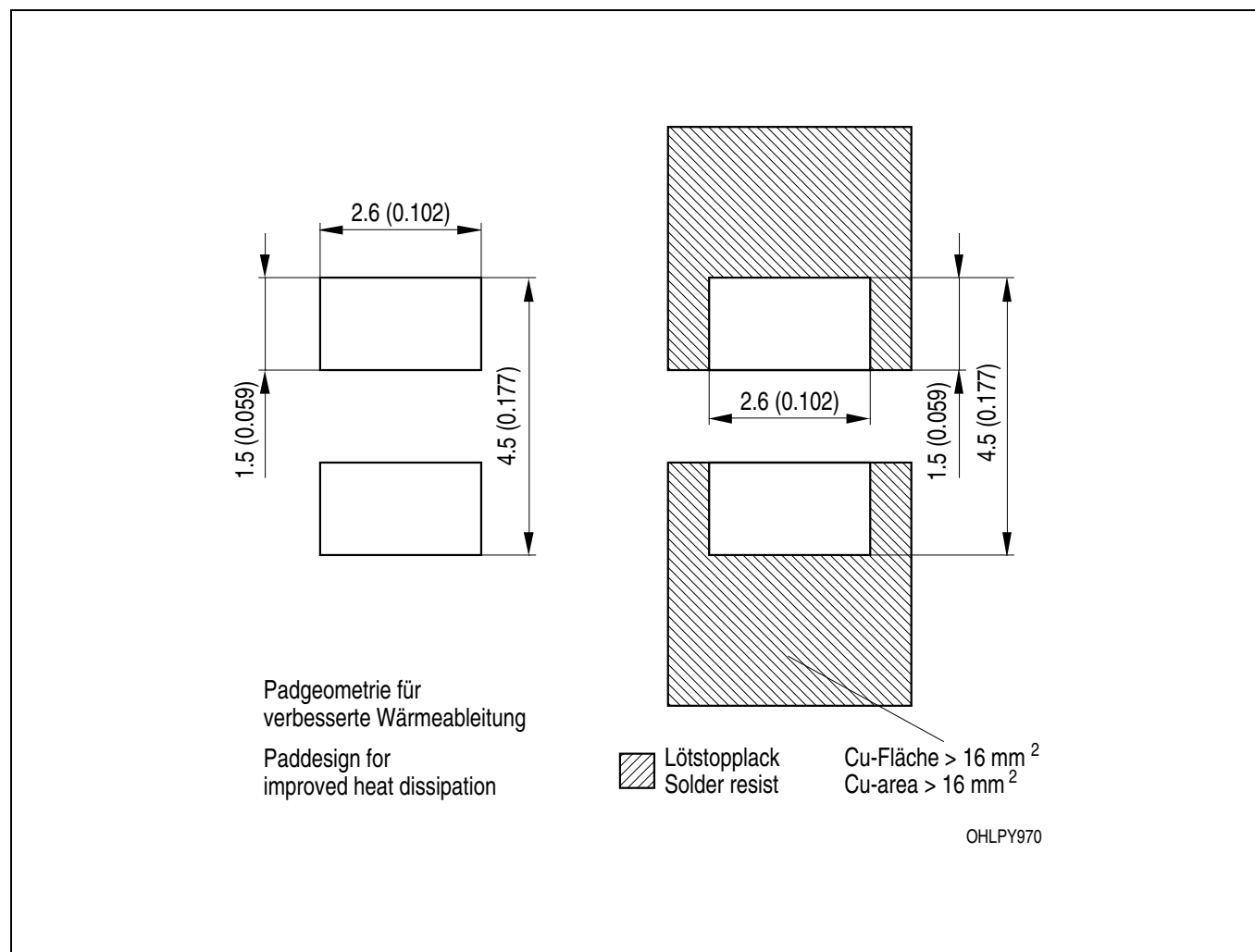
Brechungsindex Verguss: 1.53

Package Colour: black, resin colourless clear

Refractive index resin: 1.53

Empfohlenes Lötpaddesign
Recommended Solder Pad

Reflow Löten
Reflow Soldering



Maße in mm (inch) / Dimensions in mm (inch)
Gehäuse für Wellenlöten (TTW) geeignet / Package suitable for TTW-soldering

Lötbedingungen

Soldering Conditions

Reflow Lötprofil für bleifreies Löten

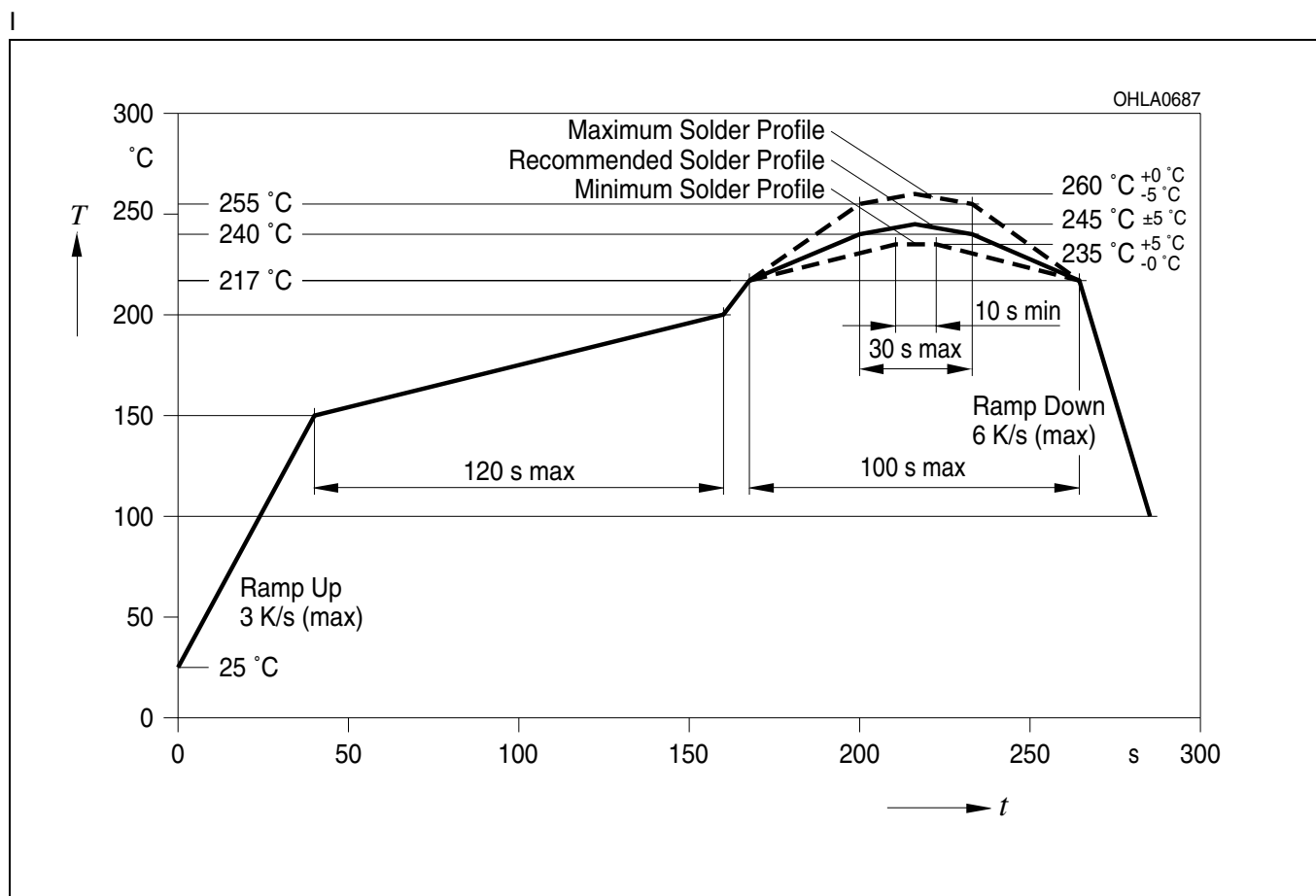
Reflow Soldering Profile for lead free soldering

Vorbehandlung nach JEDEC Level 2

Preconditioning acc. to JEDEC Level 2

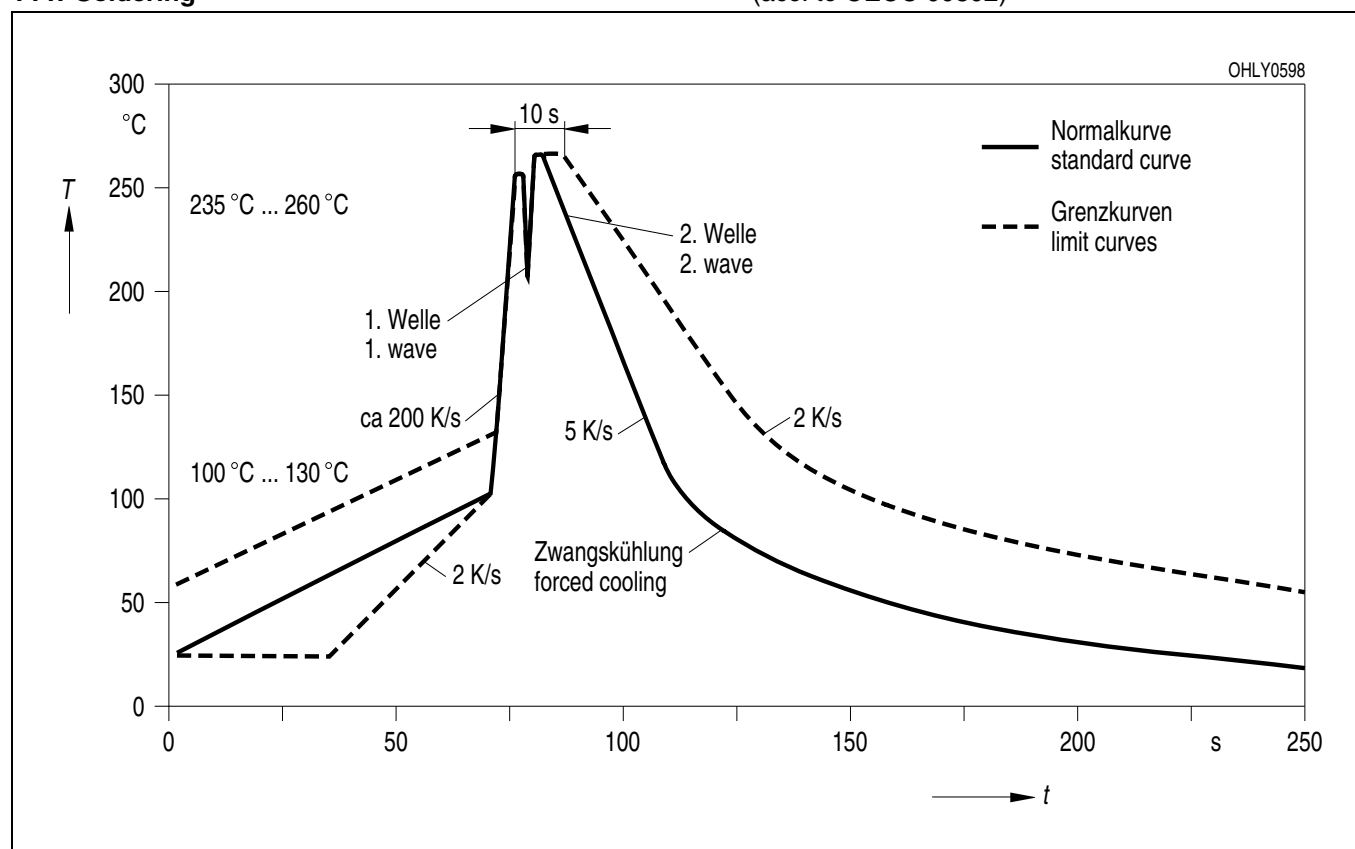
(nach J-STD-020C)

(acc. to J-STD-020C)



Lötbedingungen
Soldering Conditions
Wellenlöten (TTW)
TTW Soldering

Vorbehandlung nach JEDEC Level 2
 Preconditioning acc. to JEDEC Level 2
 (nach CECC 00802)
 (acc. to CECC 00802)



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