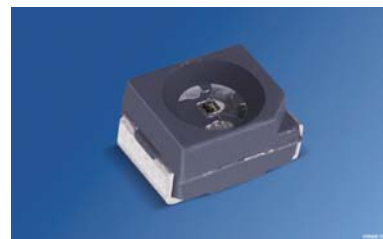


Rote Lumineszenzdiode
Red Emitter
Lead (Pb) Free Product - RoHS Compliant

SFH 4273



Wesentliche Merkmale

- Schwarz eingefärbtes TOPLED-Gehäuse
- Typische Emissionswellenlänge 660nm
- Verbesserte Abbildungseigenschaften durch Absorption der Seitenstrahlung
- Größe der Leuchtquelle 325 µm x 325 µm
- Feuchte-Empfindlichkeitsstufe 2 nach JEDEC Standard J-STD-020C

Anwendungen

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

Features

- Black colored TOPLED-package
- Typical peak wavelength 660nm
- Improved imaging characteristics due to absorption of side emission
- Size of emitting area 325µm x 325µm
- Moisture sensitivity level 2 according to JEDEC Standard J-STD-020C

Applications

- Miniature and long distance photointerrupters
- Industrial electronics
- For drive and control circuits
- 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⁾ $I_e \text{ (mW/sr)}$
SFH 4273	Q65110A2523	> 0.63 (typ. 1.0)

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

Achtung: Es wird empfohlen, das Bauteil nicht bei extremer Luftfeuchtigkeit zu betreiben. Ist dies dennoch vorgesehen, setzen Sie sich bitte mit OSRAM OS in Verbindung

Attention: It is recommended not to operate the device under extreme humidity. If this is designated though, please contact OSRAM OS.

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	3	V
Durchlassstrom Forward current	I_F	50	mA
Stoßstrom, $\tau = 10\ \mu\text{s}$, $D = 0$ Surge current	I_{FSM}	1	A
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), padsize $16\ \text{mm}^2$ each	R_{thJA}	450	K/W
Wärmewiderstand Sperrschicht - Lötstelle bei Montage auf Metall-Block Thermal resistance junction - soldering point, mounted on metal block	R_{thJS}	≈ 200	K/W

Kennwerte ($T_A = 25\text{ °C}$)

Characteristics

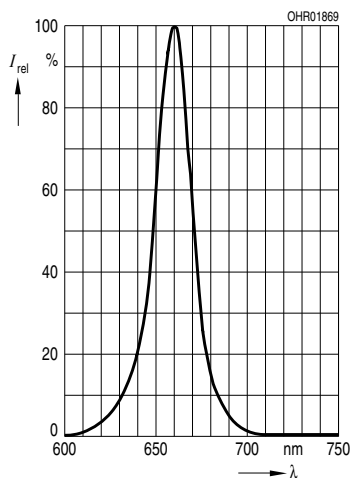
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Wellenlänge der Strahlung Wavelength at peak emission $I_F = 50\text{ mA}$, $t_p = 20\text{ ms}$	λ_{peak}	660	nm
Spektrale Bandbreite bei 50% von I_{max} Spectral bandwidth at 50% of I_{max} $I_F = 50\text{ mA}$	$\Delta\lambda$	25	nm
Abstrahlwinkel Half angle	φ	± 60	Grad deg.
Aktive Chipfläche Active chip area	A	0.106	mm ²
Abmessungen der aktiven Chipfläche Dimensions of the active chip area	$L \times B$ $L \times W$	0.325×0.325	mm ²
Schaltzeiten, I_e von 10% auf 90% und von 90% auf 10%, bei $I_F = 50\text{ mA}$, $R_L = 50\ \Omega$ Switching times, I_e from 10% to 90% and from 90% to 10%, $I_F = 50\text{ mA}$, $R_L = 50\ \Omega$	t_r , t_f	100	ns
Kapazität Capacitance $V_R = 0\text{ V}$, $f = 1\text{ MHz}$	C_o	30	pF
Durchlassspannung Forward voltage $I_F = 50\text{ mA}$, $t_p = 20\text{ ms}$	V_F	$2.1 (\leq 2.8)$	V
Sperrstrom, Reverse curr50mA50 mAent $V_R = 5\text{ V}$	I_R	$0.01 (\leq 1)$	μA
Gesamtstrahlungsfluss Total radiant flux $I_F = 50\text{ mA}$, $t_p = 20\text{ ms}$	Φ_e	5	mW
Temperaturkoeffizient von I_e bzw. Φ_e , $I_F = 50\text{ mA}$ Temperature coefficient of I_e or Φ_e , $I_F = 50\text{ mA}$	TC_I	- 0.4	%/K
Temperaturkoeffizient von V_F , $I_F = 50\text{ mA}$ Temperature coefficient of V_F , $I_F = 50\text{ mA}$	TC_V	- 3	mV/K
Temperaturkoeffizient von λ , $I_F = 50\text{ mA}$ Temperature coefficient of λ , $I_F = 50\text{ mA}$	TC_λ	+ 0.16	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
Strahlstärke Radiant intensity $I_F = 50$ mA, $t_p = 20$ ms	I_e	> 0.63 (typ. 1.0)	mW/sr

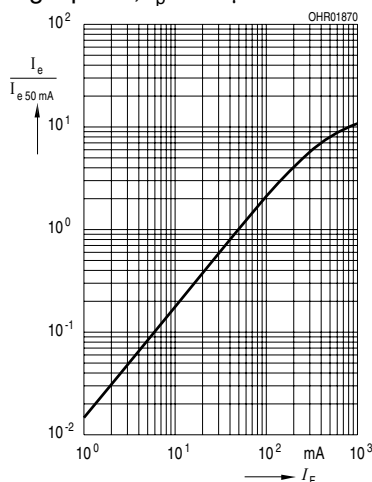
Relative Spectral Emission

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



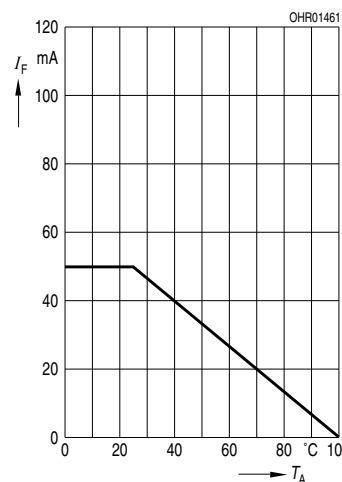
Radiant Intensity

$I_e / I_{e(50mA)} = f(I_F)$
Single pulse, $t_p = 20 \mu s$



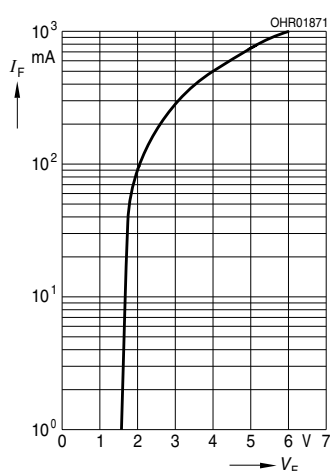
Max. Permissible Forward Current

$I_F = f(T_A)$



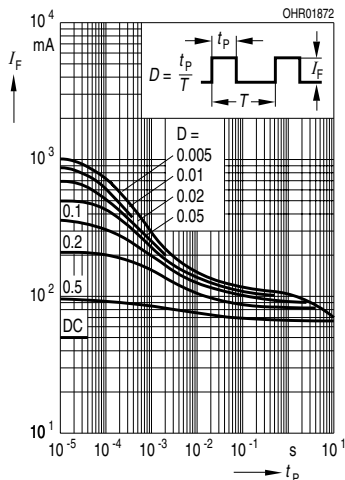
Forward Current

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



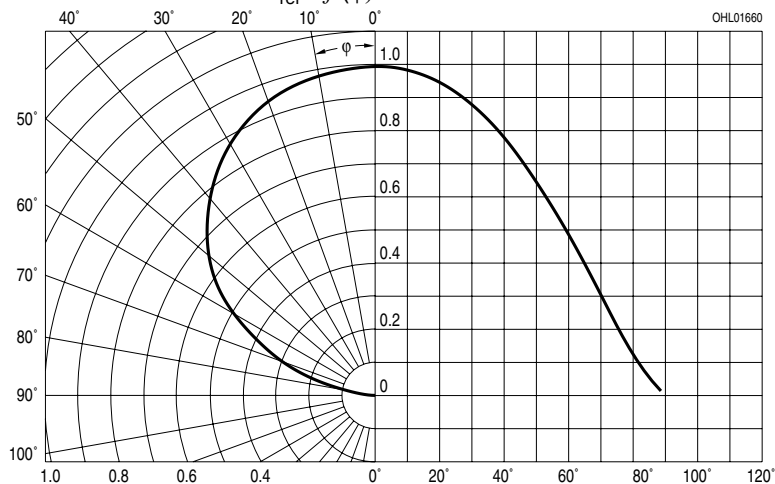
Permissible Pulse Handling Capability

$I_F = f(t_p, T_A = 25 \text{ °C})$
duty cycle $D = \text{parameter}$

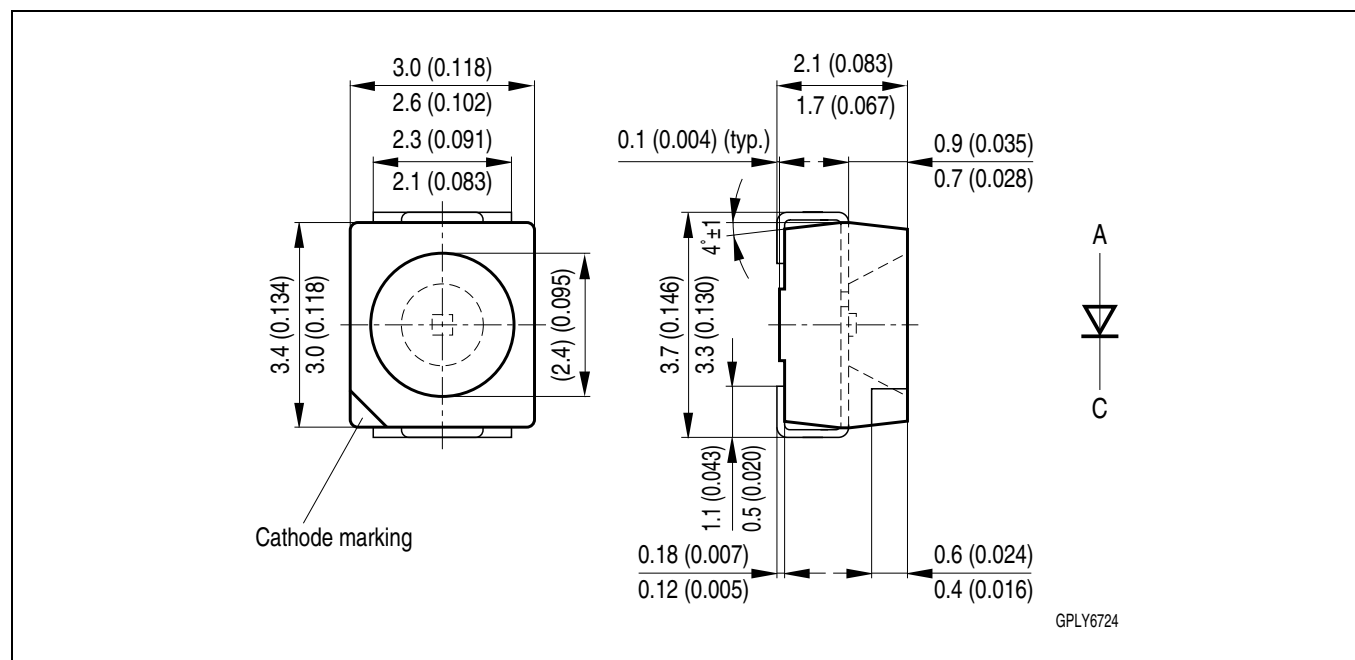


Radiation Characteristics

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



Maßzeichnung Package Outlines

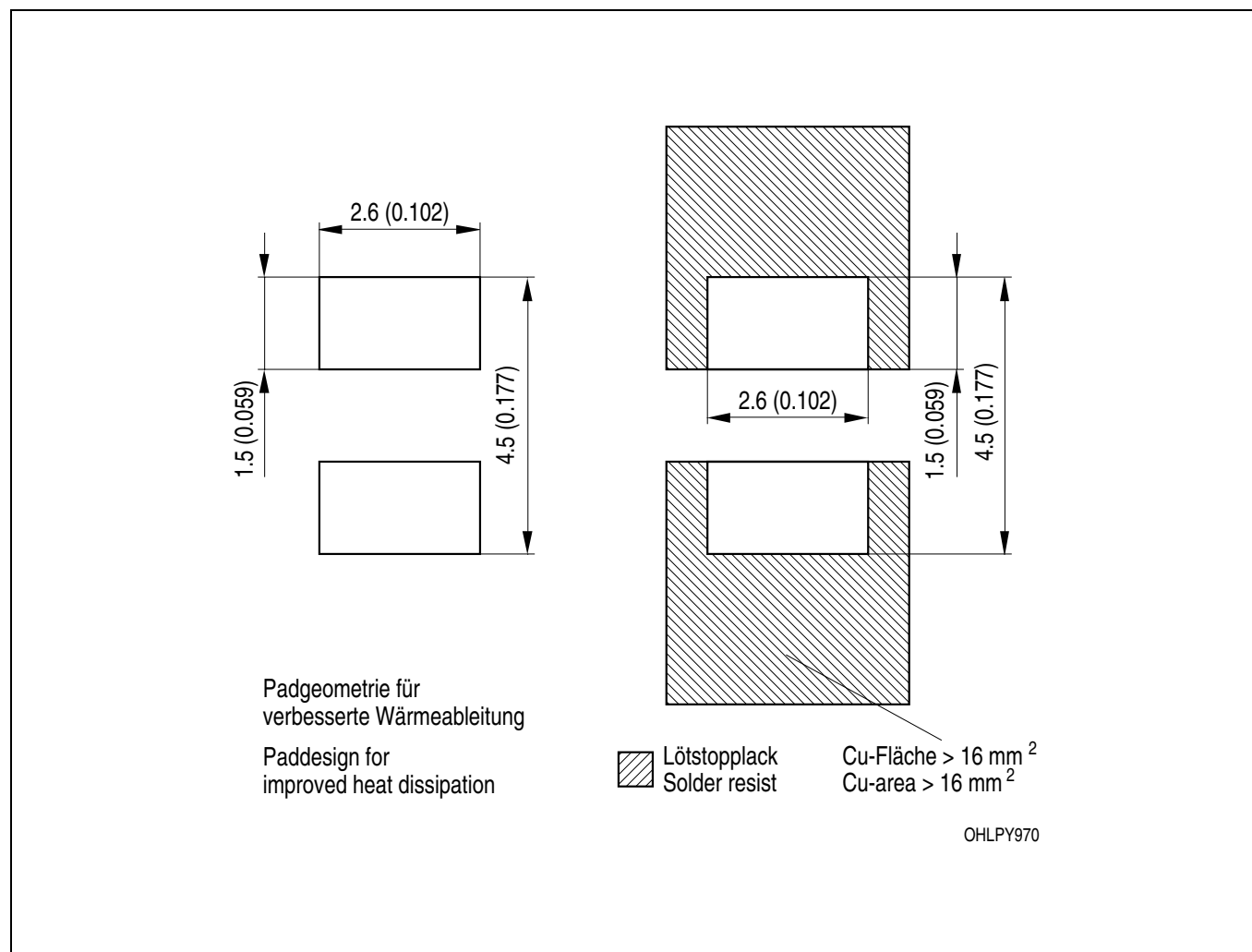


Maße in mm (inch) / Dimensions in mm (inch).

Gehäuse / Package	TOPLED®, klarer Verguss / TOPLED®, clear resin
Anschlussbelegung Pin configuration	abgeschrägte Ecke: Kathode beveled edge: Cathode
Farbe Color	schwarz black
Brechungsindex Verguss Refractive index resin	1.53 1.53

Empfohlenes Lötpaddesign
Recommended Solder Pad

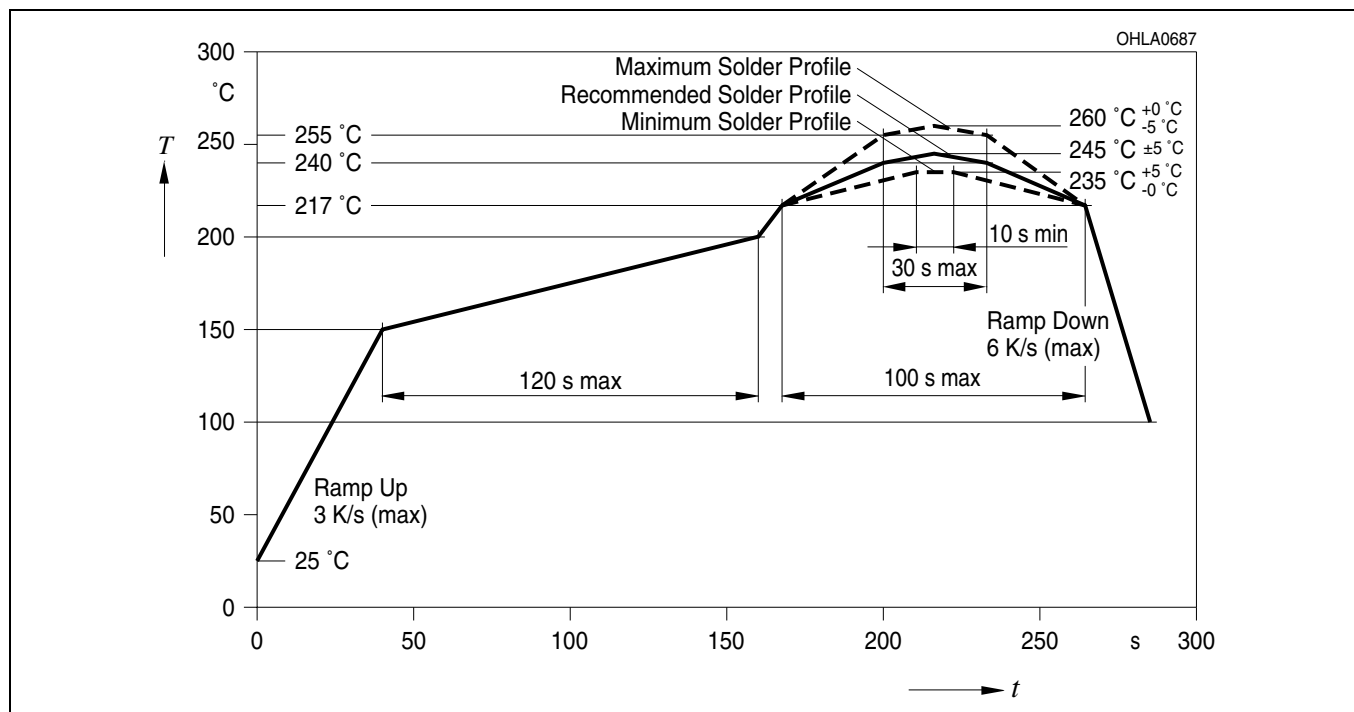
Reflow Löten
Reflow Soldering



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

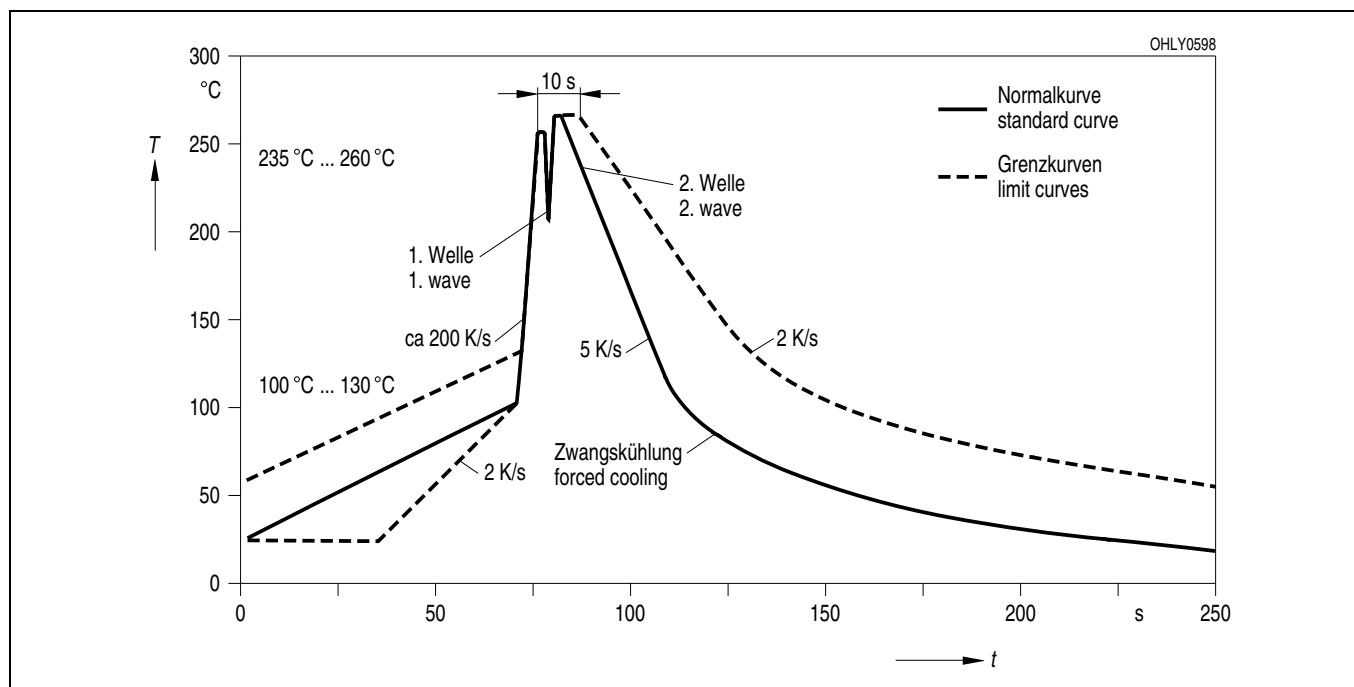
Lötbedingungen
Soldering Conditions
Reflow Lötprofil für bleifreies Löten
Reflow Soldering Profile for lead free soldering

Vorbehandlung nach JEDEC Level 2
 Preconditioning acc. to JEDEC Level 2
 (nach J-STD-020C)
 (acc. to J-STD-020C)



Wellenlöten (TTW)
TTW Soldering

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



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¹ A critical component is a component used in a life-support device or system whose failure can reasonably be expected to cause the failure of that life-support device or system, or to affect its safety or effectiveness of that device or system.

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