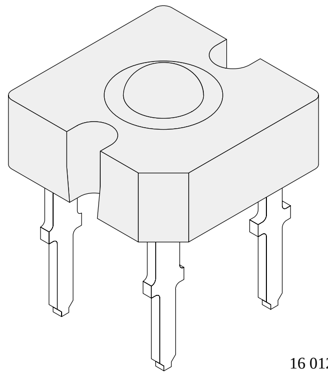
TELUX™

Color	Type	Technology	Angle of Half Intensity ±φ
Red	TLWR79..	AlInGaP on GaAs	45°
Yellow	TLWY79..	AlInGaP on GaAs	45°

Description

The TELUX™ series is a clear, non diffused LED for high end applications where supreme luminous flux is required.
It is designed in an industry standard 7.62 mm square package utilizing highly developed (AS) AlInGaP technology.
The supreme heat dissipation of TELUX™ allows applications at high ambient temperatures.
All packing units are binned for luminous flux and color to achieve best homogenous light appearance in application.



Features

- Utilizing (AS) AlInGaP technology
- High luminous flux
- Supreme heat dissipation: R_{thJP} is 90 K/W
- High operating temperature: T_j up to + 125 °C
- Type TLWR meets SAE and ECE color requirements
- Packed in tubes for automatic insertion
- Luminous flux and color categorized for each tube
- Small mechanical tolerances allow precise usage of external reflectors or lightguides
- TLWR types additionally forward voltage categorized

Applications

Exterior lighting
Dashboard illumination
Tail–, Stop – and Turn Signals of motor vehicles
Replaces incandescant lamps
Traffic signals and signs

Absolute Maximum Ratings

T_{amb} = 25°C, unless otherwise specified

TLWR79.. ,**TLWY79..** ,

Parameter	Test Conditions	Type	Symbol	Value	Unit
Reverse voltage	I_R = 100μA	TLWR79.. TLWY79..	V_R	10	V
DC forward current	$T_{amb} \leq 85°C$		I_F	70	mA
Surge forward current	$t_p \leq 10$ μs		I_{FSM}	1	A
Power dissipation	$T_{amb} \leq 85°C$		P_V	187	mW
Junction temperature			T_j	125	°C
Operating temperature range			T_{amb}	–40 to +110	°C
Storage temperature range			T_{stg}	–55 to +110	°C
Soldering temperature	t ≤ 5 s, 1.5 mm from body preheat temperature 100°C/ 30sec.		T_{sd}	260	°C
Thermal resistance junction/ambient	with cathode heatsink of 70 mm^2		R_{thJA}	200	K/W

Optical and Electrical Characteristics

T_{amb} = 25°C, unless otherwise specified

Red (**TLWR79..**)

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Total flux	I_F = 70 mA, R_{thJA}=200 °K/W		ϕ_V	1500	2000	3000	mlm
Luminous intensity/ Total flux			I_V/ϕ_V		0.7		mcd/mlm
Dominant wavelength			λ_d	611	615	634	nm
Peak wavelength			λ_p		624		nm
Angle of half intensity			φ		±45		deg
Total included angle	90 % of Total Flux Captured		$\varphi_{0.9V}$		100		deg
Forward voltage	I_F = 70 mA, R_{thJA}=200 °K/W		V_F	1.83	2.2	2.67	V
Reverse voltage	I_R = 100 μA		V_R	10	20		V
Junction capacitance	V_R = 0, f = 1 MHz		C_j		17		pF

Yellow (**TLWY79..**)

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Total flux	I_F = 70 mA, R_{thJA}=200 °K/W		ϕ_V	1000	1400	2400	mlm
Luminous intensity/ Total flux			I_V/ϕ_V		0.7		mcd/mlm
Dominant wavelength			λ_d	585	590	597	nm
Peak wavelength			λ_p		594		nm
Angle of half intensity			φ		±45		deg
Total included angle	90 % of Total Flux Captured		$\varphi_{0.9V}$		100		deg
Forward voltage	I_F = 70 mA, R_{thJA}=200 °K/W		V_F	1.83	2.1	2.67	V
Reverse voltage	I_R = 100 μA		V_R	10	15		V
Junction capacitance	V_R = 0, f = 1 MHz		C_j		32		pF

Typical Characteristics (T$_{amb}$ = 25°C, unless otherwise specified)

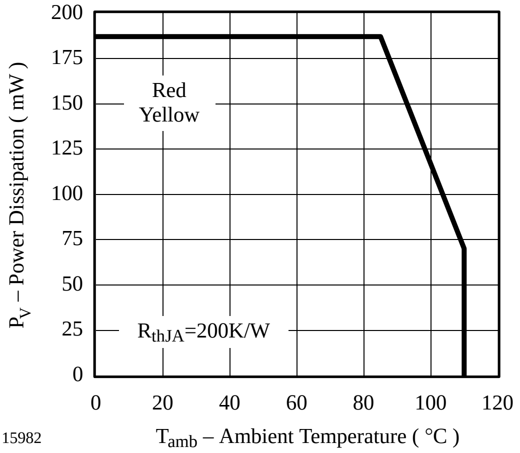


Figure 1 Power Dissipation vs. Ambient Temperature

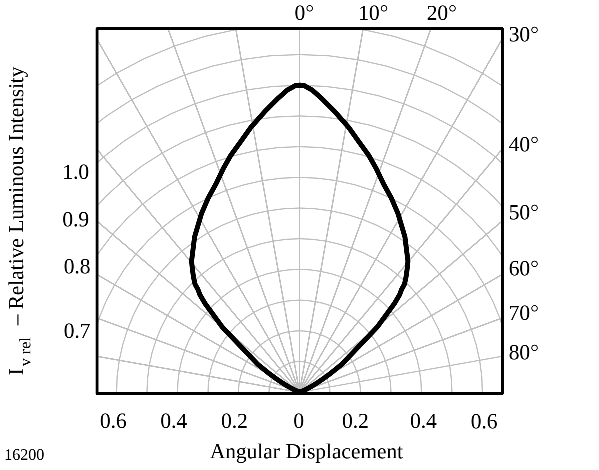


Figure 4 Rel. Luminous Intensity vs. Angular Displacement

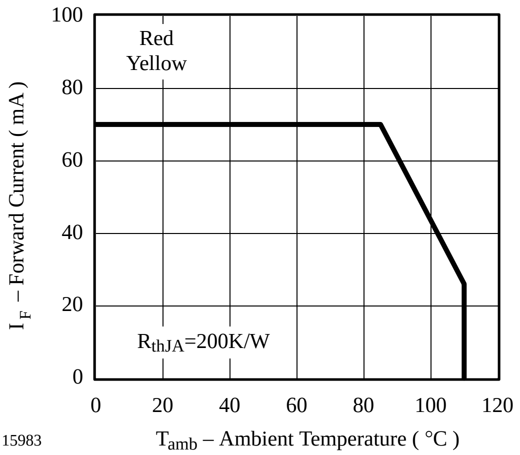


Figure 2 Forward Current vs. Ambient Temperature

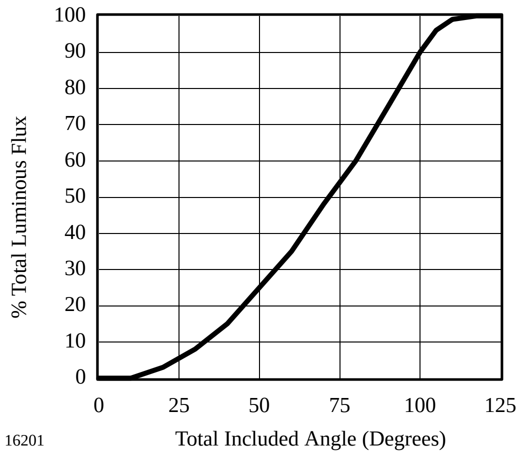


Figure 5 Percentage total Luminous Flux vs. Total Included Angle (Degrees)

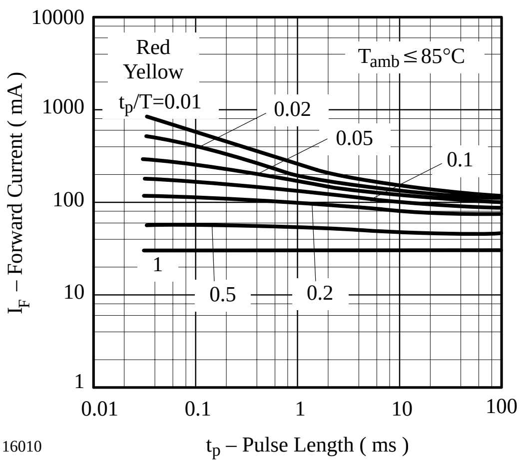


Figure 3 Forward Current vs. Pulse Length

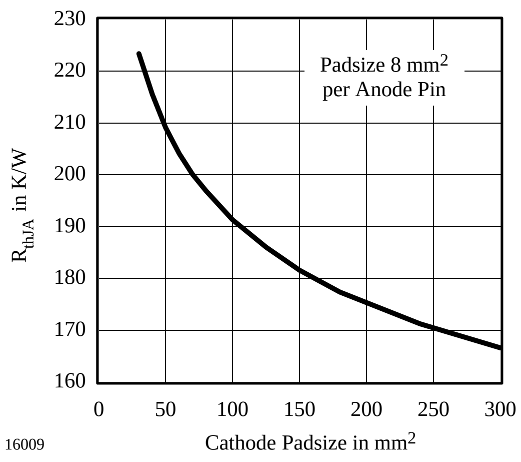


Figure 6 Thermal Resistance Junction Ambient vs. Cathode Padsize

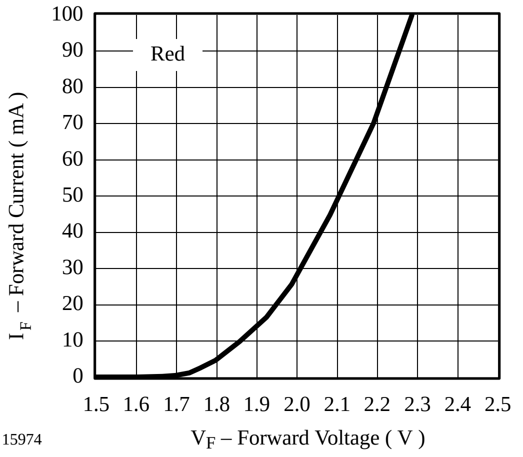


Figure 7 Forward Current vs. Forward Voltage

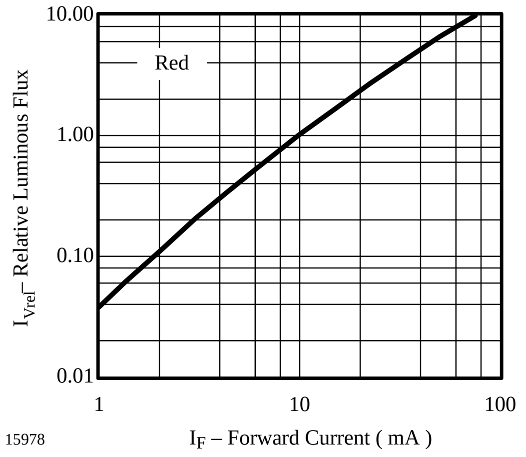


Figure 10 Relative Luminous Flux vs. Forward Current

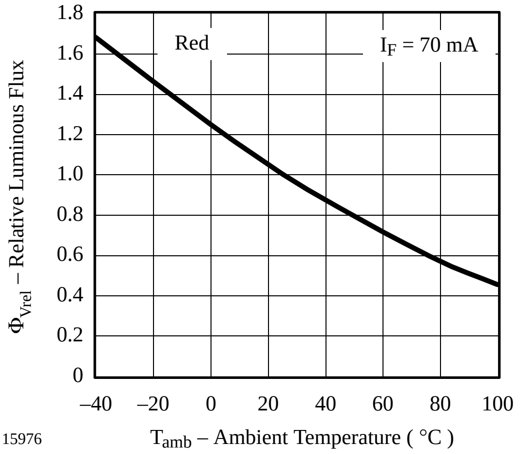


Figure 8 Rel. Luminous Flux vs. Ambient Temperature

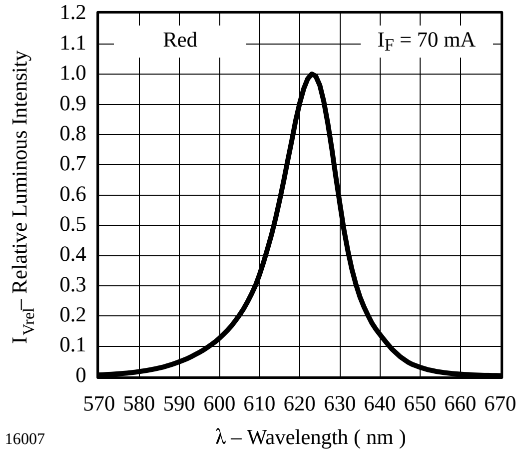


Figure 11 Relative Luminous Intensity vs. Wavelength

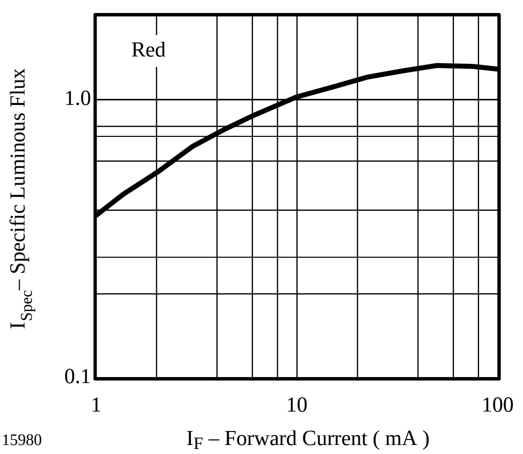


Figure 9 Specific Luminous Flux vs. Forward Current

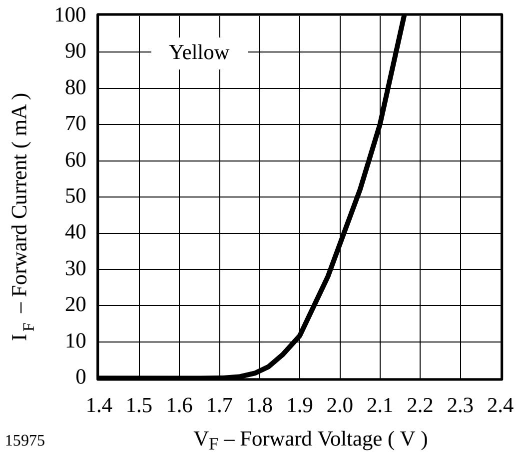


Figure 12 Forward Current vs. Forward Voltage

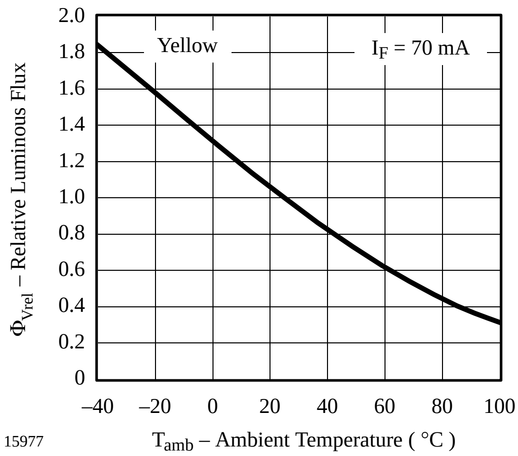


Figure 13 Specific Luminous Flux vs. Forward Current

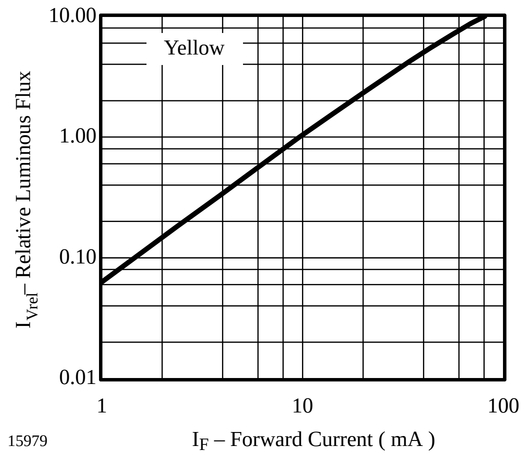


Figure 15 Relative Luminous Flux vs. Forward Current

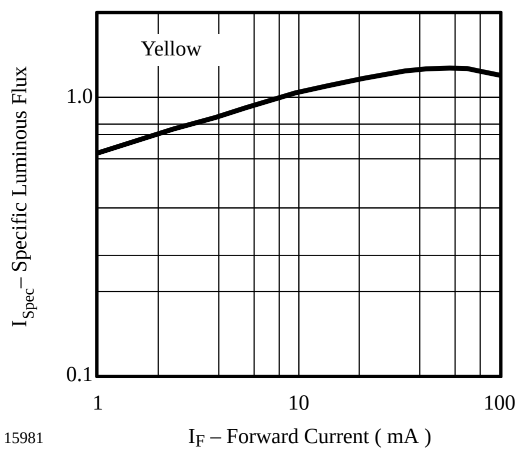


Figure 14 Specific Luminous Flux vs. Forward Current

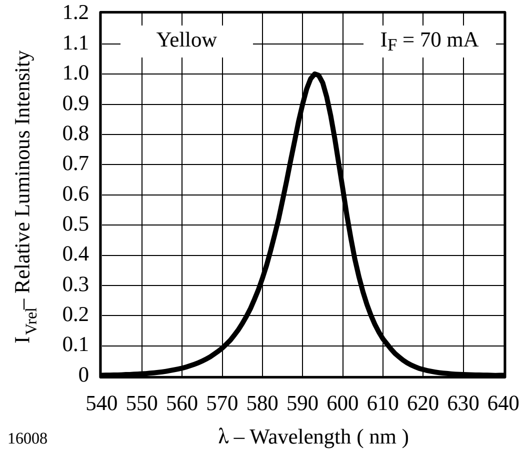
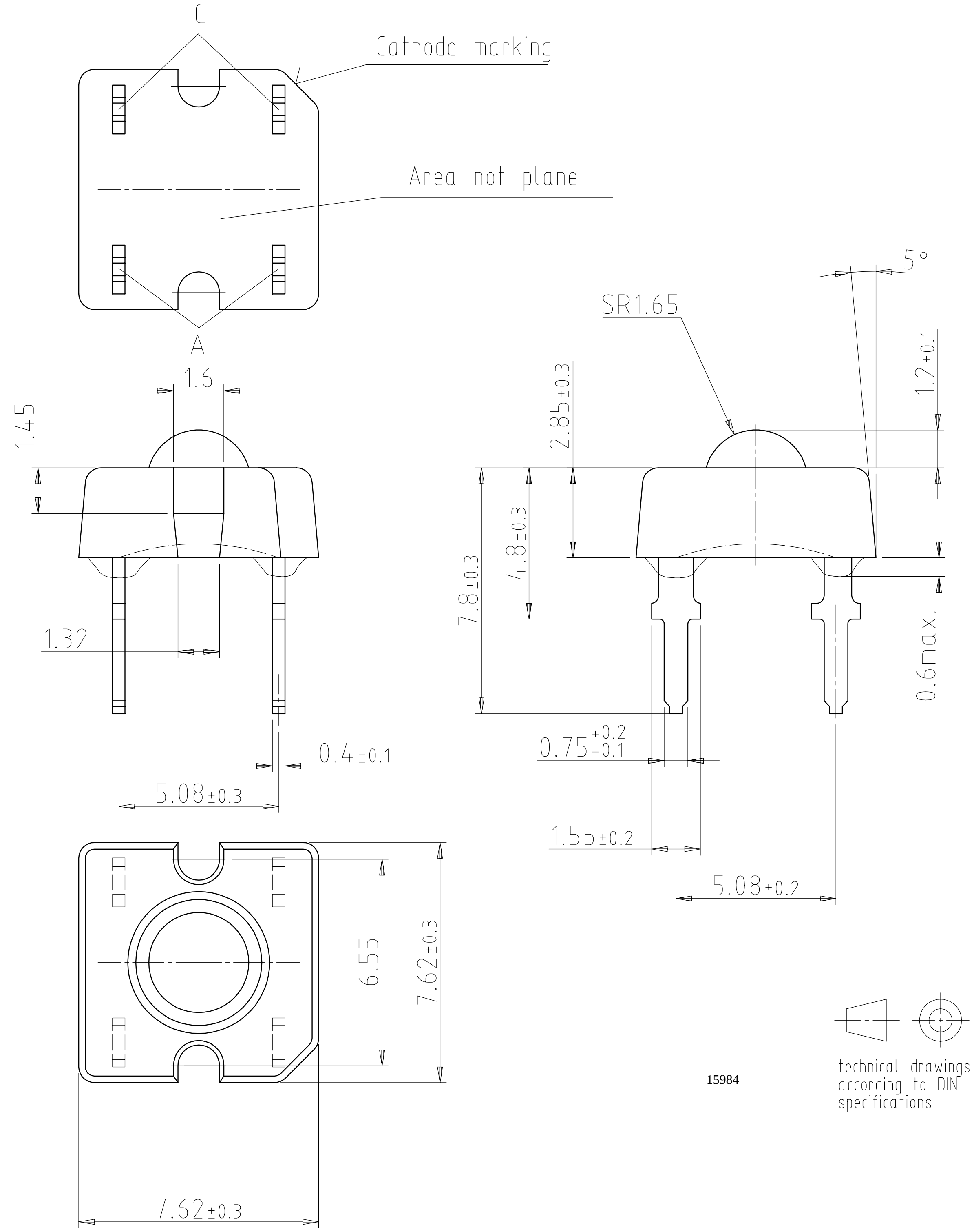


Figure 16 Relative Luminous Intensity vs. Wavelength

Dimensions in mm



Ozone Depleting Substances Policy Statement

It is the policy of **Vishay Semiconductor GmbH** to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

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