

Zertifikat

Certificate



Zertifikat Nr. *Certificate No.*
R 50036077

Blatt *Page*
0009

Ihr Zeichen *Client Reference*

PO#8000000464

Unser Zeichen *Our Reference*

ZJ-MTS- 09660910 016

Ausstellungsdatum

06.04.2006

Date of Issue
(day/mo/yr)

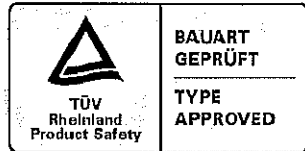
Genehmigungsinhaber *License Holder*

Avago Technologies Pte Ltd.
1 Yishun Avenue 7
Singapore 768923
Singapore

Fertigungsstätte *Manufacturing Plant*

Avago Technologies Pte Ltd.
1 Yishun Avenue 7
Singapore 768923
Singapore

Prüfzeichen *Test Mark*



Geprüft nach *Tested acc. to*

EN 60747-5-2:2001+A1
IEC 60747-5-2:1997+A1

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Optokoppler *Optocoupler*

Changes

Name and Address

of License Holder : Agilent Technologies, Inc.
5301 Stevens Creek Boulevard
MS 51L/GZ Santa Clara, CA
USA 95051-8059

Name of Factory : Agilent Technologies Singapore Pte. Ltd.

changed to : (see above)

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.
This certificate is based on our Testing and Certification Regulation. The product fulfills above-mentioned requirements, the production is subject to surveillance.



Zertifizierungsstelle

TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln

Tel.:(+49/221)8 06 - 13 71 Fax:(+49/221)8 06 - 39 35 e-mail: Althoff@de.tuv.com

Dipl.-Ing. M. Geiser

Zertifikat

Certificate



Zertifikat Nr. *Certificate No.*
R 50036077

Blatt *Page*
0004

Ihr Zeichen *Client Reference*
PO# 9000046135

Unser Zeichen *Our Reference*
ZJ-SH- 09660910 013

Ausstellungsdatum
18.12.2003

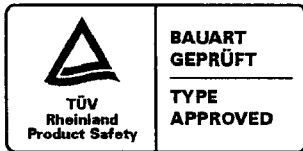
Date of Issue
(day/mo/yr)

Genehmigungsinhaber *License Holder*
Agilent Technologies, Inc.
5301 Stevens Creek Boulevard
MS 51L/GZ Santa Clara, CA
USA 95051-8059

Fertigungsstätte *Manufacturing Plant*
Agilent Technologies Singapore Pte.
Ltd.
1 Yishun Avenue 7
Singapore 768923
Singapore

Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*



EN 60747-5-2:2001+A1
IEC 60747-5-2:1997+A1

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Optokoppler *Optocoupler*

Addition

Type Designations	:	Dual PDIP Standard Optocouplers	
		HCPL-xxxx	1
		QCPL-xxxx	1
		xxxx = (see Appendix 4)	1

Insulation Voltage (Viorm) : 630Vpk
Transient Overvoltage (Viotm) : 6000Vpk
Pollution Degree : 2
Climatic Category : (see Appendix 4)
Safety Ratings
Input Current : 230mA
Output Power : 600mW
Max. Ambient Temperature (Ts) : 175°C

Remark : The devices are also in compliance with
DIN EN 60747-5-2 and DIN VDE 0884.

ANLAGE (Appendix): 4

*Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.
This certificate is based on our Testing and Certification Regulation. The product
fulfills above-mentioned-requirements, the production is subject to surveillance.*

TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln




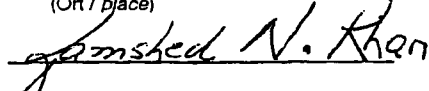
Tel.:(+49/221)8 06 - 13 71 Fax:(+49/221)8 06 - 39 35 e-mail: Althoff@de.tuv.com



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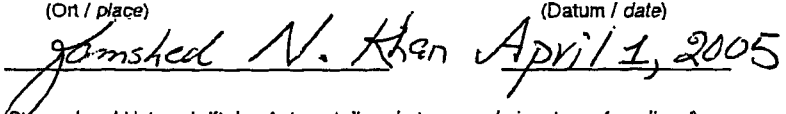

W. Nölke


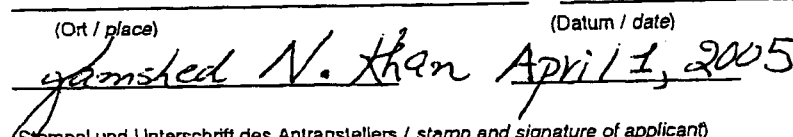

Dipl.-Ing. W. Nölke

TÜV Rheinland Product Safety GmbH Am Grauen Stein D - 51 105 Köln	Gen.-Ausw.-Nr. Aktenzeichen: Anlage Nr. R 50036077 ZJ-RWA- 09660910 016 4 (von der Prüfstelle auszufüllen)(to be filled in by PFG) In 2-facher Ausfertigung einzureichen! / Please submit in duplicate	 TÜV COMPONENTS Blatt 1 von 5 Page 1 of 5
Aufbau-Übersicht für Elektrogeräte Constructional Data Form for Electrical Appliances		
Antragsteller / Applicant: Fertigungsstätte / Factory: 1) 2) Geräteart / Kind of Equip.: Typenbezeichnung / Designation: Ursprungszeichen/ Mark of origin: Max Insulation Working Voltage: Max Permissible Transient Overvoltage: Pollution Degree: Climatic Category: Safety Limiting Values: Insulation Resistance (U = 500V): External Creepage External Clearance Comparative Tracking Index Werkstoffe/Material: Montageanleitung/Operation instruction: Sonstiges/Others:	Agilent Technologies, Inc. 5301 Stevens Creek Boulevard, MS 51L/GZ, Santa Clara, California 95051-8059, U.S.A. Agilent Technologies Singapore Pte., Ltd. 1 Yishun Avenue 7, Singapore 768923 Hana Semiconductor (AYUTTHAYA) Co. Ltd Hi-Tech Ind Estate, Authority of Thailand 100 Moo1, T Baan-Len, A Bang Pa-In KM 59 Asia Road Ayutthaya 13160 Thailand Optocoupler HCPL-xxxx (Std Dual Channel Optocouplers) QCPL-xxxx (Std Dual Channel Optocouplers) - 630V _{peak} 6000 V _{peak} / 10secs 2 (Insulation coordination per IEC60664-1:1992 for various Pollution degree Applications) 40/85/21 or 55/100/21 Input current I _s 230mA Output or total power P _s 600mW Temperature T _s 175° C 10 ¹² Ω (at T _{amb} = 25°C) 10 ¹¹ Ω (at T _{amb} = 100°C) 10 ⁹ Ω (at T _s = 175°C) ≥ 7.4 mm ≥ 7.1 mm ≥ 175 (Insulation Material Group IIIa) Package (Body): Epoxy (MP-150SG or MP8000DSA, Nitto Denki Corp.) Coupling Medium: Silicone (HIPEC R-6101, Dow Corning Corp.) Film: Pollamid (Kapton 200H, Du Pont Corp.) Isolating characteristics are only granted within the safety maximum ratings, which have to be ensured by protective circuits in the final application Dual PDIP (300 mil wide) standard optocouplers	
Remarks:		
 Replaces Anlage Nr. 4, dated on 12 Dec. 2003.		
Köln, den <u>2005-04-06</u>  TÜV Rheinland Product Safety GmbH	_____ (Ort / place) (Datum / date)  <u>April 1, 2005</u> (Stempel und Unterschrift des Antragstellers / stamp and signature of applicant)	

TÜV Rheinland Product Safety GmbH Am Grauen Stein D - 51 105 Köln	Gen.-Ausw.-Nr. R 50036077	Aktenzeichen: ZJ-RWA- 09660910 016	Anlage Nr. 4	 TÜV COMPONENTS Blatt 2 von 5 Page 2 of 5
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Aufbau-Übersicht für Elektrogeräte Constructional Data Form for Electrical Appliances				

PDIP-Duals package	Absolute Maximum Value								Safety Limiting Value (Maximum)				
	Type model	Input current mA	Input forward Voltage V	Input power@ 25°C mW	Output power@ 25°C mW	Transien t over-Voltage Vpk U _{OTM}	Working voltage (pk) U _{ORM}	With stand voltage 1 min U _{RMS}	Operating Temp. °C Min Max	Storage Temp. °C Min Max	Case Temp. Ts °C	Input current Is mA	Output Power Ps mW
HCPL-2231	10 mA each channel	1.85 V each channel	18.5mW each channel	60 mW each channel	6000	630	3750	-40 85	-55 125	175	230	600	
HCPL-2232	10 mA each channel	1.85 V each channel	18.5mW each channel	60 mW each channel	6000	630	3750	-40 85	-55 125	175	230	600	
HCPL-2430	10 mA each channel	1.55 V each channel	15.5mW each channel	40 mW each channel	6000	630	3750	-40 85	-55 125	175	230	600	
HCPL-2530	25 mA each channel	1.8 V each channel	45 mW each channel	35 mW each channel	6000	630	3750	-55 100	-55 125	175	230	600	
HCPL-2531	25 mA each channel	1.8 V each channel	45 mW each channel	35 mW each channel	6000	630	3750	-55 100	-55 125	175	230	600	
HCPL-4534	25 mA each channel	1.8 V each channel	45 mW each channel	35 mW each channel	6000	630	3750	-55 100	-55 125	175	230	600	
HCPL-2533	25 mA each channel	1.8 V each channel	45 mW each channel	35 mW each channel	6000	630	3750	-55 100	-55 125	175	230	600	
HCPL-253L	25 mA each channel	1.8 V each channel	45 mW each channel	100 mW each channel	6000	630	2500	-55 100	-55 125	175	230	600	
HCPL-2630	15 mA each channel	1.8 V each channel	27 mW each channel	60 mW each channel	6000	630	3750	-40 85	-55 125	175	230	600	
HCPL-2631	15 mA each channel	1.8 V each channel	27 mW each channel	60 mW each channel	6000	630	3750	-40 85	-55 125	175	230	600	
HCPL-4661	15 mA each channel	1.8 V each channel	27 mW each channel	60 mW each channel	6000	630	3750 ^{±1}	-40 85	-55 125	175	230	600	
HCPL-263A	10 mA each channel	1.6 V each channel	16 mW each channel	60 mW each channel	6000	630	3750	-40 85	-55 125	175	230	600	

Köln, den <u>2005-04-06</u>	(Ort / place) _____ (Datum / date) _____  (Stempel und Unterschrift des Antragstellers / stamp and signature of applicant)
 TÜV Rheinland Product Safety GmbH	

TÜV Rheinland Product Safety GmbH Am Grauen Stein D - 51 105 Köln		Gen.-Ausw.-Nr. R 50036077		Aktenzeichen: ZJ-RWA- 09660910 016		Anlage Nr. 4		 COMPONENTS Blatt 3 von 5 Page 3 of 5				
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Aufbau-Übersicht für Elektrogeräte Constructional Data Form for Electrical Appliances												
PDIP- Duals package	Absolute Maximum Value					Safety Limiting Value (Maximum)						
	Type model	Input current mA	Input forward Voltage V	Input power @ 25°C mW	Output power @ 25°C mW	Transient over-voltage Vpk <small>U_{107M}</small>	Working voltage (pk) <small>U_{107M}</small>	With-stand voltage <small>I_{min}</small> <small>U_{RMS}</small>	Operating Temp. °C <small>Min Max</small>	Storage Temp. °C <small>Min Max</small>	Case Temp. T_s °C	Input current I_s mA
HCPL-263N	10 mA each channel	1.6 V each channel	16 mW each channel	60 mW each channel	6000	630	3750	-40 85	-55 125	175	230	600
HCPL-263L	15 mA each channel	1.75 V each channel	40 mW each channel	60 mW each channel	6000	630	3750	-40 85	-55 125	175	230	600
HCPL-2730	20 mA each channel	1.75 V each channel	35 mW each channel	100 mW each channel	6000	630	3750	-40 85	-55 125	175	230	600
HCPL-2731	20 mA each channel	1.75 V each channel	35 mW each channel	100 mW each channel	6000	630	3750	-40 85	-55 125	175	230	600
HCPL-273L	20 mA each channel	1.7 V each channel	35 mW each channel	100 mW each channel	6000	630	3750	-40 85	-55 125	175	400	600
HCPL-4731	10 mA each channel	1.5 V each channel	15 mW each channel	100 mW each channel	6000	630	3750	-40 85	-55 125	175	230	600
QCPL-2238	10 mA each channel	1.85 V each channel	20 mW each channel	60 mW each channel	6000	630	3750	-40 85	-55 125	175	230	600
QCPL-2239	10 mA each channel	1.85 V each channel	20 mW each channel	60 mW each channel	6000	630	3750	-40 85	-55 125	175	230	600
QCPL-2435	10 mA each channel	1.7 V each channel	20 mW each channel	40 mW each channel	6000	630	3750	-40 85	-55 125	175	230	600
QCPL-2536	25 mA each channel	1.8 V each channel	45 mW each channel	35 mW each channel	6000	630	3750	-55 100	-55 125	175	230	600
QCPL-2537	25 mA each channel	1.8 V each channel	45 mW each channel	35 mW each channel	6000	630	3750	-55 100	-55 125	175	230	600
QCPL-2539	25 mA each channel	1.8 V each channel	45 mW each channel	35 mW each channel	6000	630	3750	-55 100	-55 125	175	230	600
Köln, den <u>2005-04-06</u>					(Ort / place) _____ (Datum / date) _____  (Stempel und Unterschrift des Antragstellers / stamp and signature of applicant)							
 TÜV Rheinland Product Safety GmbH												

TÜV Rheinland
Product Safety GmbH

Am Grauen Stein
D - 51 105 KÖln

Gen.-Ausw.-Nr.
R 50036077

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Aktenzeichen:

ZJ-RWA- 09660910 016

Anlage Nr.

4



COMPONENTS

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Aufbau-Übersicht für Elektrogeräte
Constructional Data Form for Electrical Appliances

PDIP- Duals package	Absolute Maximum Value								Safety Limiting Value (Maximum)				
	Type model	Input current mA	Input forward Voltage V	Input power@ 25°C mW	Output power @ 25°C mW	Transient over- Voltage Vpk U _{OTM}	Working voltage (pk) U _{ORM}	With- stand voltage Imin U _{RMS}	Operating Temp. °C Min Max	Storage Temp. °C Min Max	Case Temp. Ts °C	Input current Is mA	Output Power Ps mW
QCPL-2549	25 mA each channel	1.8 V each channel	45 mW each channel	35 mW each channel	6000	630	3750	-55 100	-55 125	175	230	600	
QCPL-2562	25 mA each channel	1.8 V each channel	45 mW each channel	35 mW each channel	6000	630	3750	-55 100	-55 125	175	230	600	
QCPL-2640	15 mA each channel	1.85 V each channel	30 mW each channel	60 mW each channel	6000	630	3750	-40 85	-55 125	175	230	600	
QCPL-2649	15 mA each channel	1.85 V each channel	30 mW each channel	60 mW each channel	6000	630	3750	-40 85	-55 125	175	230	600	
QCPL-2741	20 mA each channel	1.75 V each channel	35 mW each channel	100 mW each channel	6000	630	3750	-40 85	-55 125	175	230	600	
QCPL-2745	20 mA each channel	1.75 V each channel	35 mW each channel	100 mW each channel	6000	630	3750	-40 85	-55 125	175	230	600	
QCPL-4530	25 mA each channel	1.8 V each channel	45 mW each channel	35 mW each channel	6000	630	3750	-55 100	-55 125	175	230	600	
QCPL-4539	25 mA each channel	1.8 V each channel	45 mW each channel	35 mW each channel	6000	630	3750	-55 100	-55 125	175	230	600	
QCPL-4552	25 mA each channel	1.8 V each channel	45 mW each channel	35 mW each channel	6000	630	3750	-55 100	-55 125	175	230	600	
QCPL-4630	15 mA each channel	1.85 V each channel	30 mW each channel	60 mW each channel	6000	630	3750	-40 85	-55 125	175	230	600	
QCPL-4661	15 mA each channel	1.85 V each channel	30 mW each channel	60 mW each channel	6000	630	3750	-40 85	-55 125	175	230	600	
QCPL-4641	15 mA each channel	1.85 V each channel	30 mW each channel	60 mW each channel	6000	630	3750	-40 85	-55 125	175	230	600	

Köln, den 2005-04-06

[Signature]

TÜV Rheinland
Product Safety GmbH


(Ort / place)

[Signature]

(Datum / date)

April 1, 2005

(Stempel und Unterschrift des Antragstellers / stamp and signature of applicant)

TÜV Rheinland Product Safety GmbH Am Grauen Stein D - 51 105 Köln	Gen.-Ausw.-Nr. R 50036077	Aktenzeichen: ZJ-RWA- 09660910 016	Anlage Nr. 4	 TÜV COMPONENTS
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Aufbau-Übersicht für Elektrogeräte
Constructional Data Form for Electrical Appliances

Blatt 5 von 5
 Page 5 of 5

PDIP-Duals package	Absolute Maximum Value								Safety Limiting Value (Maximum)					
	Type model	Input current mA	Input forward Voltage V	Input power@ 25°C mW	Output power@ 25°C mW	Transient over-voltage Voltage Vpk U _{DTM}	Working voltage (pk) U _{IORM}	With stand voltage I min U _{RMS}	Operating Temp. °C Min Max		Storage Temp. °C Min Max		Case Temp. Ts in°C	Input current Is mA
QCPL-4643	15 mA each channel	1.85 V each channel	30 mW each channel	60 mW each channel	6000	630	3750	-40	85	-55	125	175	230	600
QCPL-4650	15 mA each channel	1.85 V each channel	30 mW each channel	60 mW each channel	6000	630	3750	-40	85	-55	125	175	230	600
QCPL-4651	15 mA each channel	1.85 V each channel	30 mW each channel	60 mW each channel	6000	630	3750	-40	85	-55	125	175	230	600
QCPL-4652	15 mA each channel	1.85 V each channel	30 mW each channel	60 mW each channel	6000	630	3750	-40	85	-55	125	175	230	600
QCPL-4655	15 mA each channel	1.85 V each channel	30 mW each channel	60 mW each channel	6000	630	3750	-40	85	-55	125	175	230	600
QCPL-4656	15 mA each channel	1.85 V each channel	30 mW each channel	60 mW each channel	6000	630	3750	-40	85	-55	125	175	230	600
QCPL-4659	15 mA each channel	1.85 V each channel	30 mW each channel	60 mW each channel	6000	630	3750	-40	85	-55	125	175	230	600
QCPL-4668	15 mA each channel	1.85 V each channel	30 mW each channel	60 mW each channel	6000	630	3750	-40	85	-55	125	175	230	600

Köln, den 2005-04-06


 TÜV Rheinland
 Product Safety GmbH

(Ort / place) Görsched N. Khan (Datum / date) April 1, 2005
 (Stempel und Unterschrift des Antragstellers / stamp and signature of applicant)