Zertifikat *Certificate*

TÜV

Zertifikat Nr. *Certificate No.*
R 50036077

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0009

Ihr Zeichen *Client Reference*	Unser Zeichen *Our Reference*	Ausstellungsdatum	*Date of Issue (day/mo/yr)*
PO#8000000464	ZJ-MTS- 09660910 016	06.04.2006	

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*

TÜV Rheinland Product Safety | BAUART GEPRÜFT / TYPE APPROVED

Geprüft nach *Tested acc. to*
EN 60747-5-2:2001+A1
IEC 60747-5-2:1997+A1

Zertifiziertes Produkt *Certified Product*	(Geräteidentifikation) *(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)

TÜV Rheinland Product Safety GmbH — TÜV Rheinland — Zertifizierungsstelle

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: Althofff@de.tuv.com

Dipl.-Ing. M. Geiser

Zertifikat *Certificate*

TÜV

Zertifikat Nr. *Certificate No.*
R 50036077

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0004

Ihr Zeichen *Client Reference*	**Unser Zeichen** *Our Reference*	**Ausstellungsdatum**	*Date of Issue (day/mo/yr)*
PO# 9000046135	ZJ-SH- 09660910 013	18.12.2003	

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*

TÜV Rheinland Product Safety | BAUART GEPRÜFT / TYPE APPROVED

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.

3

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 – TÜV Rheinland – Zertifizierungsstelle

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: Althofff@de.tuv.com

Dipl.-Ing. W. Nölke

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
	(von der Prüfstelle auszufüllen)*(to be filled in by PfG)* In 2-facher Ausfertigung einzureichen! / *Please submit in duplicate*			Blatt 1 von 5 *Page 1 of 5*

Aufbau-Übersicht für Elektrogeräte
Constructional Data Form for Electrical Appliances

Antragsteller / Applicant:	Agilent Technologies, Inc. 5301 Stevens Creek Boulevard, MS 51L/GZ, Santa Clara, California 95051-8059, U.S.A.
Fertigungsstätte / *Factory*: 1)	Agilent Technologies Singapore Pte., Ltd. 1 Yishun Avenue 7, Singapore 768923
2)	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
Geräteart / *Kind of Equip.*:	Optocoupler
Typenbezeichnung /*Designation:*	HCPL-xxxx (Std Dual Channel Optocouplers) QCPL-xxxx (Std Dual Channel Optocouplers)
Ursprungszeichen/ *Mark of origin:*	-
Max Insulation Working Voltage:	$630V_{peak}$
Max PermissibleTransient Overvoltage:	6000 Vpeak / 10secs
Pollution Degree:	2 (Insulation coordination per IEC60664-1:1992 for various Pollution degree Applications)
Climatic Category:	40/85/21 or 55/100/21
Safety Limiting Values:	Input current I_S 230mA Output or total power P_S 600mW Temperature T_S 175° C
Insulation Resistance (U = 500V):	$10^{12}\Omega$ (at T_{amb} = 25°C) $10^{11}\Omega$ (at T_{amb} = 100°C) $10^{9}\Omega$ (at T_s = 175°C)
External Creepage	≥ 7.4 mm
External Clearence	≥ 7.1 mm
Comparative Tracking Index	≥ 175 (Insulation Material Group IIIa)
Werkstoffe/*Material:*	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.)
Montageanleitung/*Operation Instruction:*	Isolating characteristics are only granted within the safety maximum ratings, which have to be ensured by protective circuits in the final application
Sonstiges/*Others:*	Dual PDIP (300 mil wide) standard optocouplers

Remarks:
TÜV Replaces Anlage Nr. 4, dated on 12 Dec. 2003.

Köln, den 2005-04-06

TÜV Rheinland
Product Safety GmbH

(Ort / *place*) (Datum / *date*)

Jamshed N. Khan 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
	(von der Prüfstelle auszufüllen)*(to be filled in by PfG)* In 2-facher Ausfertigung einzureichen! / *Please submit in duplicate*			
Aufbau-Übersicht für Elektrogeräte ***Constructional Data Form for Electrical Appliances***				Blatt 2 von 5 *Page 2 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 Vpk U_{IOTM}	Working voltage (pk) U_{IORM}	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	-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 2005-04-06

TÜV Rheinland
Product Safety GmbH

(Ort / *place*) (Datum / *date*)

Jamshed N. Khan 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
	(von der Prüfstelle auszufüllen) *(to be filled in by PfG)* In 2-facher Ausfertigung einzureichen! / *Please submit in duplicate*			
	Aufbau-Übersicht für Elektrogeräte ***Constructional Data Form for Electrical Appliances***			Blatt 3 von 5 *Page 3 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 Vpk U_{IOTM}	Working voltage (pk) U_{IORM}	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-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 2005-04-06

TÜV Rheinland
Product Safety GmbH

(Ort / *place*) (Datum / *date*)

Jamshed N. Khan 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
	(von der Prüfstelle auszufüllen)*(to be filled in by PfG)* In 2-facher Ausfertigung einzureichen! / *Please submit in duplicate*			
Aufbau-Übersicht für Elektrogeräte ***Constructional Data Form for Electrical Appliances***				Blatt 4 von 5 *Page 4 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 Vpk U_{IOTM}	Working voltage (pk) U_{IORM}	With-stand voltage 1min 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

TÜV Rheinland
Product Safety GmbH

(Ort / *place*) Jamshed N. Khan (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
	(von der Prüfstelle auszufüllen) *(to be filled in by PfG)* In 2-facher Ausfertigung einzureichen! / *Please submit in duplicate*			Blatt 5 von 5 *Page 5 of 5*

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_{IOTM}	Working voltage (pk) U_{IORM}	With stand voltage 1min U_{RMS}	Operating Temp. °C Min Max	Storage Temp. °C Min Max	Case Temp. Ts in°C	Input current Is mA	Output Power Ps mW
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*) (Datum / *date*)

Jamshed N. Khan April 1, 2005

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