

Dear HP Field Members, Distribution Channel Partners, Customers,

Per the attached Customer Change Notice, CCNPOC#65, Hewlett-Packard is implementing changes to its HCPL-7800 and HCPL-7800A Analog Isolation Amplifiers, associated options and customer special ("QCPL") part numbers.

Changes to these devices are necessary as we have received notification from our existing Complementary Metal Oxide Semiconductor (CMOS) supplier of their plan to obsolete the CMOS process they use to manufacture the integrated circuits used within the listed part numbers.

Attached with this change notification is a side-by-side comparison of "old" performance vs. "new" performance on key parameters.

If your company requires this notice, please begin to convert any affected purchasing and internal documentation as needed at your earliest convenience. Hewlett-Packard is committed to providing you with quality service and products. Please feel free to contact your Hewlett-Packard Field Sales Engineer with any questions or concerns you might have. They are ready to assist you in any way necessary to analyze this change.

Sincerely, HEWLETT-PACKARD SINGAPORE

Benny Tang Product Manager Isolation Components Business Unit



Configuration Control Notice

For Hewlett-Packard Customers

Notification Date: 15 January 1999

CCNPOC#65

Please be advised that Hewlett-Packard will be making the following product change(s) on the effective date noted for the products listed. Satisfactory reliability data has been gathered and recorded to assure continuance of the high quality standards set forth in our standard catalog parts.

CUSTOM	IER PART(S)	AFFECTED:					
H	ICPL-7800	HCPL-7800A	QCPL-7806	QCPL-7890	QCPL-7891		
And all associated options							

REASON/EXTENT OF CHANGE(S):

CMOS Supplier Change and IC Redesign

The supplier for the CMOS integrated circuits used in these devices is being changed. This change is necessary due to our existing supplier's decision to obsolete the CMOS process we use. Along with the supplier change, the integrated circuit was redesigned to fit the new supplier's CMOS process.

Internal Construction

The internal construction of these devices has been changed but the external dimensions (footprint) remain identical. The change results in improved insulation capabilities of the package. (Please refer to table 1 for the comparison chart.)

Mold Compound

The mold compound has been changed from Nitto (black) to ICI (white).

Performance changes as a result of items 1 through 3 are summarized in the attached tables that give a side-by-side comparison of "old" version data sheet performance versus "new" version data sheet performance.



EFFECTIVE DATE OF CHANGE:

Shipments of the new version will be phased in beginning with date code 9924 which is 1 Jun 1999. The existing version of the product may be shipped until HP inventories are depleted or 31 Aug 1999, which ever occurs first.

Your Hewlett-Packard field sales engineer will assist you in any way necessary for you to analyze this change to your satisfaction.

Marketing Manager Rainer Ihra

Quality Assurance Manager Lee Cheng Dee





Table 1



VDE 0884 Insulation Characteristics

	"Existing" Package	"New" Package
Installation Classification per DIN VDE 0110/1.89,	5 5	0
Table 1		
for rated mains voltage ≤ 300 Vrms	I-IV	I-IV
for rated mains voltage ≤ 450 Vrms	I-III	I-III
for rated mains voltage ≤ 600 Vrms		I-III
Climatic Classification	40/100/21	55/100/21
Pollution Degree	2	2
Maximum Working Insulation Voltage	848 Vpk	891 Vpk
Input to Output Test Voltage, Method b	1591 Vpk	1670 Vpk
Input to Output Test Voltage Method a	1273 Vpk	1336 Vpk
Highest Allowable Overvoltage	6000 Vpk	6000 Vpk
Safety Limiting Values	-	-
Case Temperature	175 °C	175 °C
Input Current	80 mW	400 mW
Output Power	250 mW	500 mW
Insulation Resistance	$\geq 10^{12} \Omega$	$\geq 10^9 \Omega$



HCPL-7800/A (old) vs HCPL-7800/A (new)

Summary

Parameter	HCPL-7800/A (old) ¹	HCPL-7800/A (new) ¹	Comments		
PACKAGE CHARACTER	ISTICS				
Package Style	8-pin PDIP	8-pin PDIP			
Input-Output Momentary	3750 Vrms	3750 Vrms			
Withstand Voltage					
Input-Output Resistance	≥ 10 ¹² Ω	≥ 10 ⁹ Ω			
Input-Output Capacitance	0.7 pF	0.8 pF			
INSULATION AND SAFETY RATED SPECIFICATIONS					
External Clearance (min)	7.4 mm	7.4 mm			
External Creepage (min)	8.0 mm	8.0 mm			
Internal Clearance (min)	0.08 mm	0.5 mm			
Tracking Resistance	<u>></u> 175 V	<u>></u> 175 V			
Isolation Group	Illa	Illa			
ABSOLUTE MAXIMUM RATINGS					
Storage Temp	-55/125°C	-55/125°C			
Ambient Oper. Temp	-40/100°C	-40/100°C			
Supply Voltages	0.0/5.5 V	0.0/5.5 V			
Steady State Input	-2.0/V _{DD1} + 0.5 V	-2.0/V _{DD1} + 0.5 V			
Voltage					
Two Second Transient	-6.0/V _{DD1} + 0.5 V	-6.0/V _{DD1} + 0.5 V			
Input Voltage					
Output Voltages	-0.5/V _{DD2} + 0.5 V	-0.5/V _{DD2} + 0.5 V			
Lead Solder Temp.	260°C	260°C			
RECOMMENDED OPERA	TING CONDITIONS				
Ambient Operating	-40/+85°C	-40/+85°C			
Temp.					
Supply Voltages	4.5/5.5 V	4.5/5.5 V			
Input Voltage	-200/200 mV	-200/200 mV			

Notes

1. Performance comparisons shown are of the appropriate min., typ. or max. limit found on the data sheet



Parameter	HCPL-7800/A (old) ¹	HCPL-7800/A (new) ¹	Comments
DC ELECTRICAL SPECIFIC	CATIONS		
Input Offset Voltage (min/max)	-1.8/0.0 @ +25°C	-2.0/2.0 @ +25°C -3.0/3.0 mV @ -40 to+85°C	
Gain (HCPL-7800A)	7.85/8.01	7.92/8.08	
Gain (HCPL-7800)	7.61/8.4	7.76/8.24	
200 mV Nonlinearity (max)	0.35 %	0.35 %	
100 mV Nonlinearity (max)	0.25 %	0.2 %	
Maximum Input Voltage before Output Clipping	300 mV	308 mV	
Average Input Bias Current	-0.67 uA	-0.5 uA	
Average Input Resistance	530 kΩ	500kΩ	
Input DC Common-Mode Rejection Ratio	72 dB	76 dB	
Output Resistance	11.0Ω	15.0 Ω	
Output Low Voltage	1.18 V	1.29 V	
Output High Voltage	3.61 V	3.80 V	
Output Common Mode Voltage (min/max)	2.20/2.60	2.20/2.80 V	
Input Supply Current (max)	15.5 mA	16.0 mA	
Output Supply Current (max)	14.5 mA	16.0 mA	
Output Short Circuit Current	9.3 mA	18.6 mA	
AC ELECTRICAL SPECIFIC	CATIONS		
Common Mode Rejection (min)	10 kV/us	10 kV/us	
Prop. Delay to 50% (max)	5.6 us	5.6 us	
Prop. Delay to 90% (max)	9.9 us	9.9 us	
Rise/Fall Time (10% -	6.6 us	6.6 us	

HCPL-7800/A (old) vs HCPL-7800/A (new)

Notes

90%) (max)

(-3dB) (min)

Small Signal Bandwidth

Performance comparisons shown are of the appropriate min., typ. or max. limit found on 1. the data sheet.

50 kHz

50 kHz