

VDE 0884 $V_{IORM} = 630\text{ V peak}$ Option for Plastic Optocouplers

Technical Data

Description

Optocouplers are frequently used to provide high voltage insulation. Because optocouplers perform this safety function, they are regulated by many country safety agencies, both at the component level and the equipment level. With Option 060, the products are tested according to VDE 0884 (June 1992 Revision) at $V_{IORM} = 630\text{ V peak}$. HP also offers other various VDE 0884 approved products at different levels of V_{IORM} such as $V_{IORM} = 1414\text{ kV peak}$ (HCNWXXXX series) and $V_{IORM} = 891\text{ V peak}$ (HCPL-JXXX series).

Refer to the front of the optocoupler section of the current catalog, under Product Safety Regulations section, for a detailed description of VDE 0884 and the partial discharge tests for production and type testing.

Option 060 is available on the following products.

HCPL-2211	HCPL-2212
HCPL-2219	HCPL-2300
HCPL-2400	HCPL-261A
HCPL-261N	HCPL-2611
HCPL-3120	HCPL-3150
HCPL-4503	HCPL-4504
HCPL-4506	HCPL-4701

Contact your local HP Sales Representative concerning

Option 060

availability of this option for optocouplers not listed.

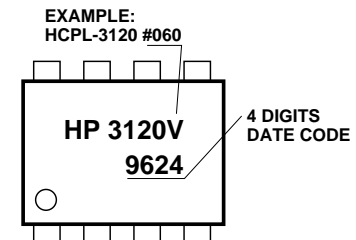
Ordering Information

Specify Part Number followed by Option Number.

Example

HCPL-3120#060

Marketing Information



Insulation Related Specifications

Parameter	Symbol	Value	Units	Conditions
Minimum External Air Gap (External Clearance)	L(101)	7.1	mm	Measured from input terminals to output terminals, shortest distance through air.
Minimum External Tracking (External Creepage)	L(102)	7.4	mm	Measured from input terminals to output terminals, shortest distance path along body.
Minimum Internal Plastic Gap (Internal Clearance)		0.08	mm	Through insulation distance, conductor to conductor, usually the direct distance between the photoemitter and photodetector inside the optocoupler cavity.
Tracking Resistance (Comparative Tracking Index)	CTI	200	V	DIN IEC 112/VDE 0303 Part 1
Isolation Group		IIIa		Material Group (DIN VDE 0110, 1/89, Table 1)

VDE 0884 Insulation Related Characteristics (Option 060)

*85°C

HCPL-2211, HCPL-2212, HCPL-2219, HCPL-2300, HCPL-2400, HCPL-2611, HCPL-261A, HCPL-261N, HCPL-4701.

**100°C

HCPL-3120, HCPL-3150, HCPL-4503 HCPL-4504, HCPL-4506.

Description	Symbol	Characteristic	Units
Installation classification per DIN VDE 0110/1.89, Table 1 for rated mains voltage ≤ 300 V rms for rated mains voltage ≤ 450 V rms		I-IV	
		I-III	
Climatic Classification		55/85/21* 55/100/21**	
Pollution Degree (DIN VDE 0110/1.89)		2	
Maximum Working Insulation Voltage	V_{IORM}	630	V _{peak}
Input to Output Test Voltage, Method b† $V_{IORM} \times 1.875 = V_{PR}$, 100% Production Test with $t_m = 1$ sec, Partial Discharge < 5 pC	V_{PR}	1181	V _{peak}
Input to Output Test Voltage, Method a† $V_{IORM} \times 1.5 = V_{PR}$, Type and Sample Test, $t_m = 60$ sec, Partial Discharge < 5 pC	V_{PR}	945	V _{peak}
Highest Allowable Overvoltage† (Transient Overvoltage, $t_{ini} = 10$ sec)	V_{IOTM}	6000	V _{peak}
Safety Limiting Values (Maximum values allowed in the event of a failure, also see Thermal Derating curve, Figure 1.) Case Temperature Input Current Output Power	T_S $I_{S,INPUT}$ $P_{S,OUTPUT}$	175 230 600	°C mA mW
Insulation Resistance at T_S , $V_{IO} = 500$ V	R_S	$\geq 10^9$	Ω

†Refer to the front of the optocoupler section of the current catalog, under Product Safety Regulations section (VDE 0884), for a detailed description.

Note: Isolation characteristics are guaranteed only within the safety maximum ratings which must be ensured by protective circuits in application.

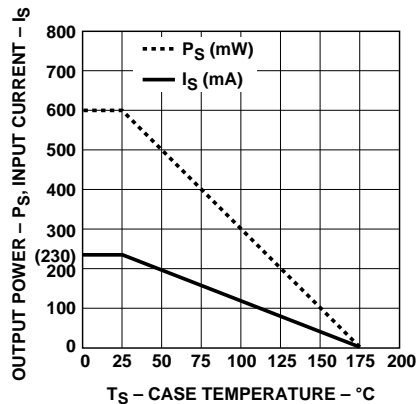


Figure 1. Thermal Derating Curve, Dependence of Safety Limiting Value with Case Temperature per VDE 0884.