

L I p C H g
Ga Sp , Da , g
Op p , s

S g , C a : HCPL0700, HCPL0701,
D a , C a : HCPL0731

HCPL0700, HCPL0701, HCPL0731

Description

XXX = Specific Device Code
XXX = 700, 701, 731
V = VDE Mark (only appears on parts
ordered with VDE option)
X = Year Code
YY = Work Week
S = Assembly Package Code5C
CASE

Features

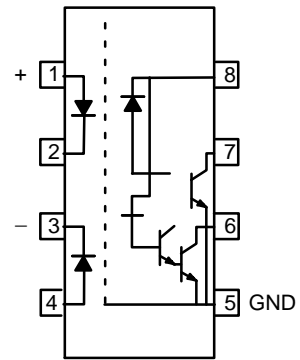
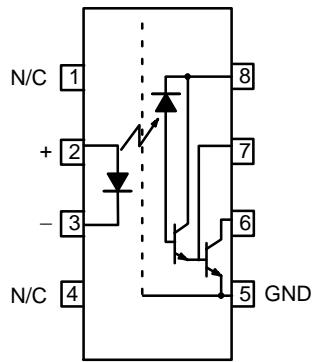
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Applications

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HCPL0700, HCPL0701, HCPL0731

SCHEMATICS



HCPL0700, HCPL0701, HCPL0731

ELECTRICAL CHARACTERISTICS (T_A = 0 to 70°C unless otherwise noted)

Symbol	Parameter	Test Condition	Device	Min	Typ*	Max	Unit	
INDIVIDUAL COMPONENT CHARACTERISTICS								
EMITTER								
V _F	Input Forward Voltage	I _F = 1.6 mA	T _A = 25°C	HCPL0700/01	1.0	1.25	1.7	V
				HCPL0731		1.35		
			All	–	–	1.75		
BV _R	Input Reverse breakdown Voltage	T _A = 25°C, I _R = 10 μA	All	5.0	–	–	V	
DETECTOR								
I _{OH}	Logic High Output Current	I _F = 0 mA, V _O = V _{CC} = 18 V	HCPL0701/31	–	0.01	100	μA	
		I _F = 0 mA, V _O = V _{CC} = 7 V	HCPL0700	–	0.01	250		
I _{CCL}	Logic Low Supply Current	I _F = 1.6 mA, V _O = Open, V _{CC} = 18 V	HCPL0700/01	–	0.4	1.5	mA	
		V _{O1} = V _{O2} = Open, V _{CC} = 18 V	HCPL0731	–	1	–		
I _{CCH}	Logic High Supply Current	I _F = 0 mA, V _O = Open, V _{CC} = 18 V	HCPL0700/01	–	–	10	μA	
		V _{O1} = V _{O2} = Open, V _{CC} = 18 V	HCPL0731	–	0.01	–		
TRANSFER CHARACTERISTICS								
CTR	COUPLED	I _F = 0.5 mA, V _O = 0.4 V, V _{CC} = 4.5 V	HCPL0700/31	400	–	5000	%	
	Current Transfer Ratio (Notes 1, 2)	I _F = 1.6 mA, V _O = 0.4 V, V _{CC} = 4.5 V	HCPL0700	300	–	2600		
			HCPL0701	500	–	2600		
			HCPL0731	500	–	5000		
V _{OL}	Logic Low Output Voltage	I _F = 0.5 mA, I _O = 2 mA, V _{CC} = 4.5 V	HCPL0701	–	–	0.4	V	
		I _F = 1.6 mA, I _O = 8 mA, V _{CC} = 4.5 V	HCPL0731	–	–	0.4		
		I _F = 5 mA, I _O = 15 mA, V _{CC} = 4.5 V		–	–	0.4		
		I _F = 12 mA, I _O = 24 mA, V _{CC} = 4.5 V		–	–	0.4		
		I _F = 1.6 mA, I _O = 4.8 mA, V _{CC} = 4.5 V	HCPL0700	–	–	0.4		
ISOLATION CHARACTERISTICS								
I _{I-O}	Input–Output Insulation Leakage Current	Relative humidity = 45%, T _A = 25°C, t = 5 s, V _{I-O} = 3000 VDC (Note 4)		–	–	1.0	μA	
V _{ISO}	Withstand Insulation Test Voltage	R _H ≤ 50%, T _A = 25°C, I _{I-O} ≤ 2 μA, t = 1 min. (Notes 4, 5)		2500	–	–	V _{RMS}	
R _{I-O}	Resistance (Input to Output)	V _{I-O} = 500 VDC (Note 4)		–	10 ¹²	–	Ω	

HCPL0700, HCPL0701, HCPL0731

ELECTRICAL CHARACTERISTICS ($T_A = 0$ to 70°C unless otherwise noted) (continued)

Symbol

Min

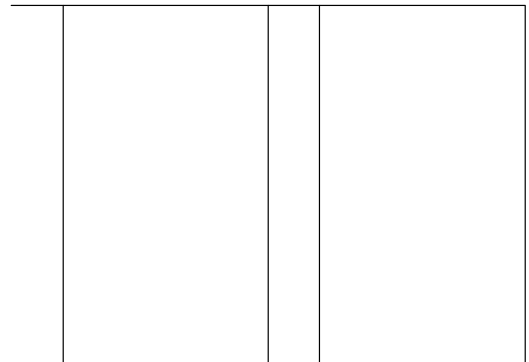
Typ*

Max

Unit

HCPL0700, HCPL0701, HCPL0731

TYPICAL PERFORMANCE CURVES (continued)



HCPL0700, HCPL0701, HCPL0731

HCPL0700, HCPL0701, HCPL0731

TEST CIRCUIT

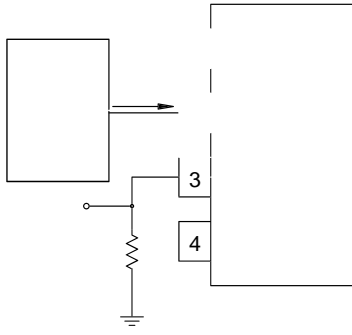
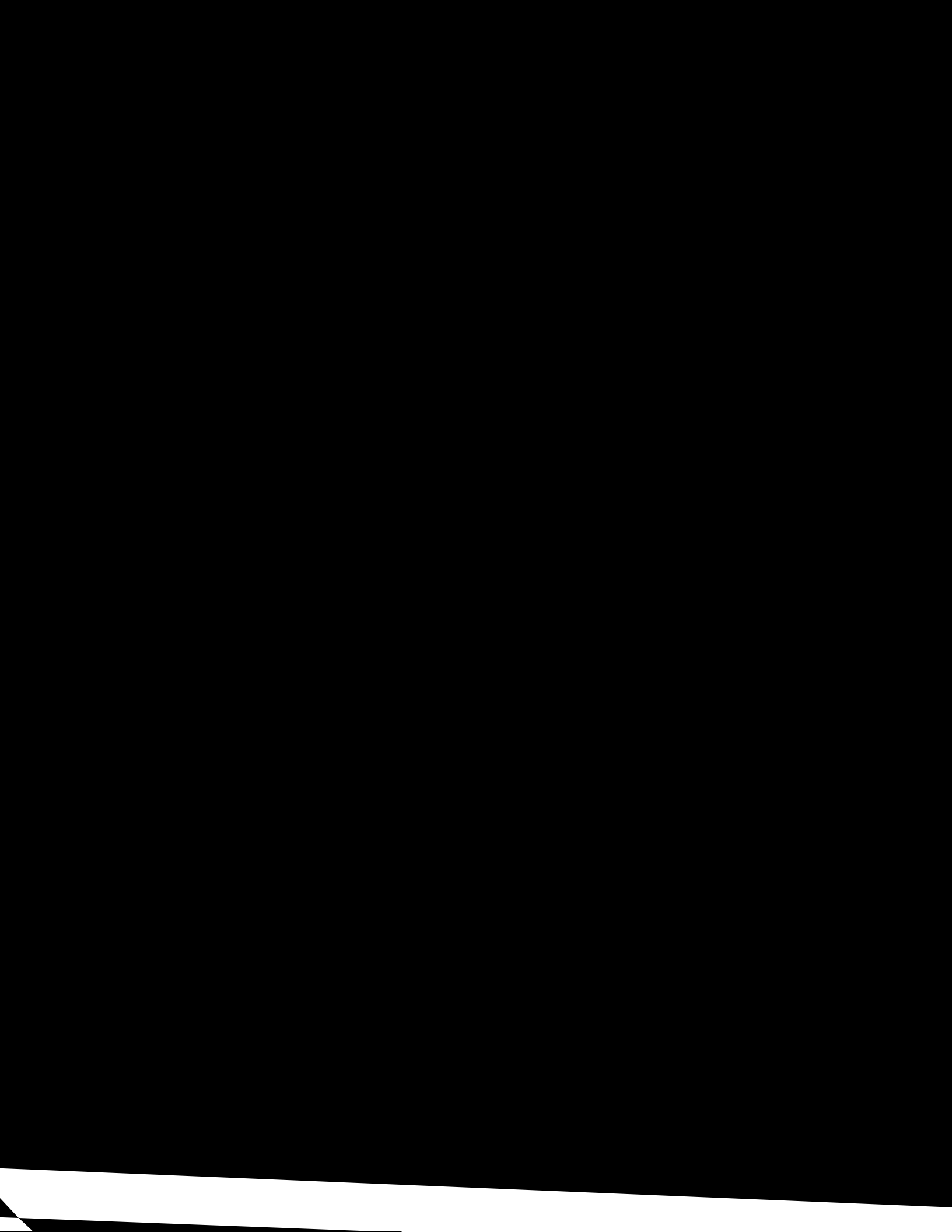


Figure 14. Switching Time Test Circuit



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