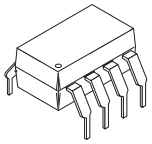
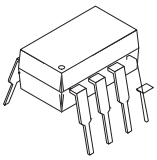
8-Pin DIP High-Speed 10 MBit/s Logic Gate Optocouplers

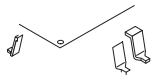
Single-Channel: 6N137M, HCPL2601M, HCPL2611M Dual-Channel: HCPL2630M, HCPL2631M



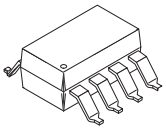
PDIP8 6.6x3.81, 2.54P
CASE 646BW



PDIP8 9.655x6.6, 2.54P
CASE 646CQ



PDIP8 GW
CASE 709AC



PDIP8 GW
CASE 709AD

Description

The 6N137M, HCPL2601M, HCPL2611M single−channel and HCPL2630M, HCPL2631M dual−channel optocouplers consist of a 850 nm AlGaAs LED, optically coupled to a very high speed integrated photo−detector logic gate with a strobable output. This output features an open collector, thereby permitting wired OR outputs. The switching parameters are guaranteed over the temperature range of −40 C to +85 C. A maximum input signal of 5 mA will provide a minimum output sink current of 13 mA (fan out of 8).

An internal noise shield provides superior common mode rejection of typically 10 kV/μs. The HCPL2601M and HCPL2631M has a minimum CMR of 5 kV/μs. The HCPL2611M has a minimum CMR of 10 kV/μs.

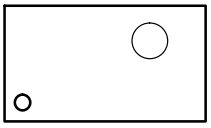
Features

- Very High Speed – 10 MBit/s
- Superior CMR – 10 kV/μs
- Fan−out of 8 Over −40 C to +85 C
- Logic Gate Output
- Strobable Output
- Wired OR−open Collector
- Safety and Regulatory Approvals
  - UL1577, 5,000 VAC_{RMS} for 1 Minute
  - DIN EN/IEC60747−5−5
- These are Pb−Free Devices

Applications

- Ground Loop Elimination
- LSTTL to TTL, LSTTL or 5 V CMOS
- Line Receiver, Data Transmission
- Data Multiplexing
- Switching Power Supplies
- Pulse Transformer Replacement
- Computer−peripheral Interface

MARKING DIAGRAM



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ORDERING INFORMATION

SCHEMATICS

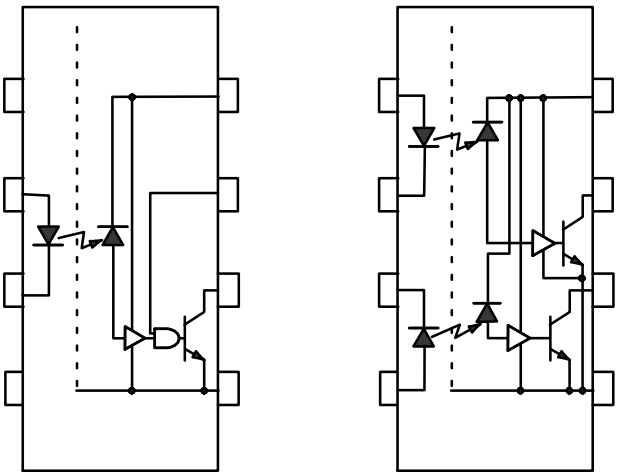

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Figure 1. Schematics

TRUTH TABLE

Input	Enable	Output

SAFETY AND INSULATION RATINGS

− −

Parameter		Characteristics

Symbol	Parameter	Value	Unit
	− −		
	− −		

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Device	Value	Unit
			−	
			−	
			−	

EMITTER

DETECTOR

			−	
			−	

RECOMMENDED OPERATING CONDITIONS

Symbol	Parameter	Min	Max	Unit
				μ
		−		
		−		

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test Conditions	Device	Min	Typ	Max	Unit
INDIVIDUAL COMPONENT CHARACTERISTICS							
EMITTER							
				−			
				−	−		
		μ			−	−	
				−		−	
Δ Δ				−	−	−	
DETECTOR							
				−			
				−			
				−			
				−			
				−	−	−	
				−	−	−	
				−	−		
					−	−	
TRANSFER CHARACTERISTICS		−					
				−			
		μ		−	−		μ
				−			
SWITCHING CHARACTERISTICS		−					
		Ω					
		Ω		−	−		
		Ω					
		Ω		−	−		
		Ω		−			
		Ω		−		−	
		Ω		−		−	
		Ω		−		−	
		Ω		−		−	

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test Conditions	Device	Min	Typ	Max	Unit
SWITCHING CHARACTERISTICS		−					
		Ω		−		−	μ
						−	
		Ω				−	
		Ω		−		−	μ
						−	
		Ω				−	
ISOLATION CHARACTERISTICS							
		− μ			−	−	
−		−		−		−	Ω
−		−		−		−	
−	−	−		−	−		μ

TYPICAL PERFORMANCE CURVES

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TYPICAL PERFORMANCE CURVES

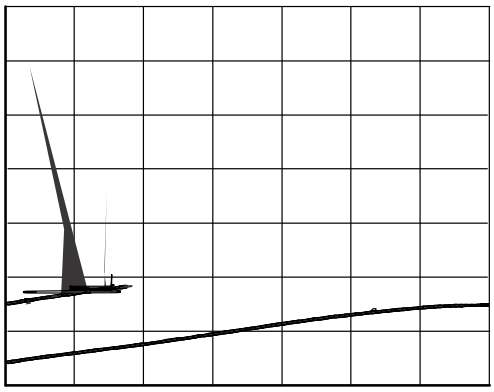

Figure 8. Pulse Width Distortion vs. Temperature

Figure 9. Rise and Fall Time vs. Temperature

Figure 10. Enable Propagation Delay vs. Temperature

Figure 11. Switching Time vs. Temperature

Figure 12. High Level Output Current vs. Temperature

TYPICAL PERFORMANCE CURVES

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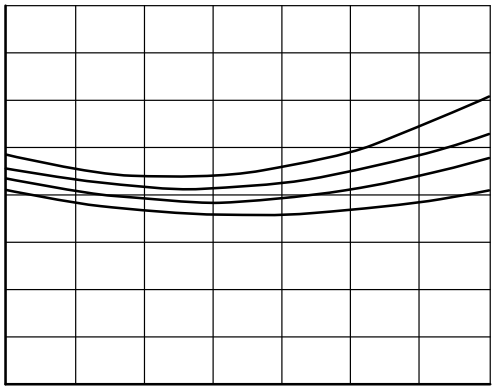

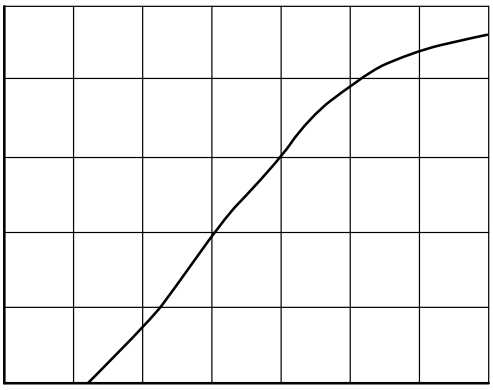

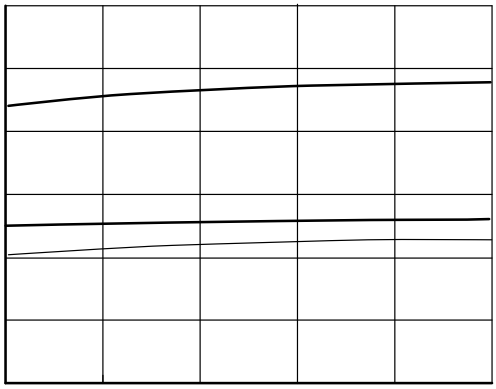

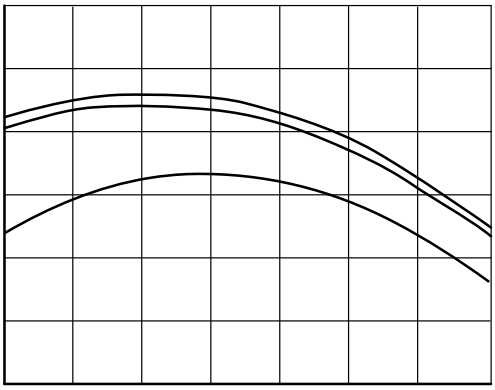

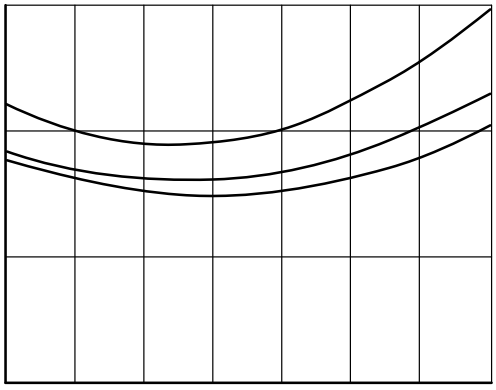

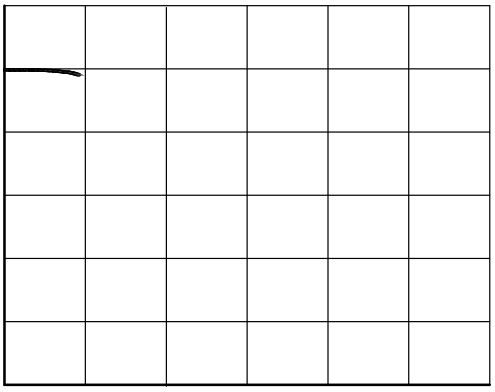

TYPICAL PERFORMANCE CURVES

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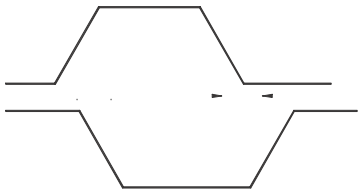
TEST CIRCUITS



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TEST CIRCUITS

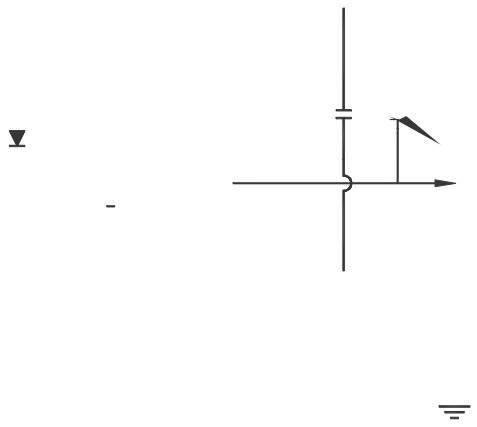

Figure 25. Test Circuit Common Mode Transient Immunity

Single

ORDERING INFORMATIG0FI

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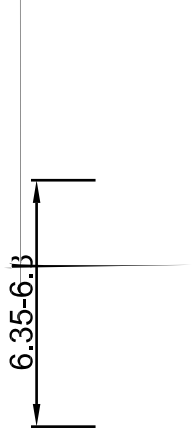
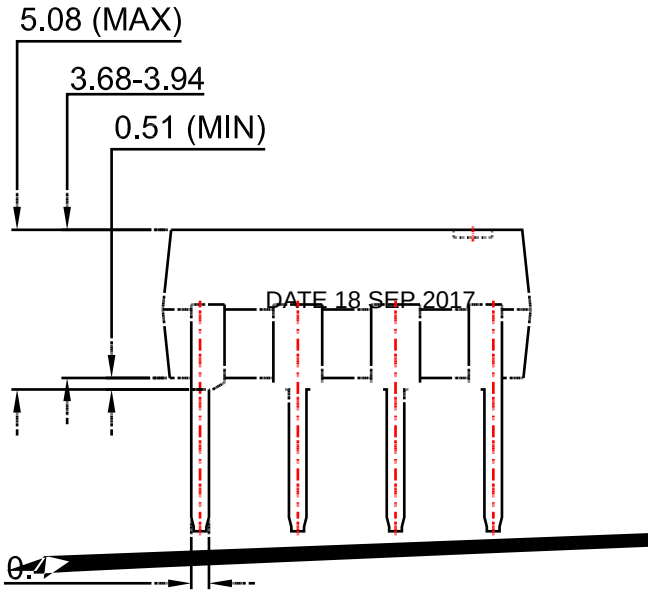


PDIP8 9.655x6.6, 2.54P
CASE 646CQ
ISSUE O



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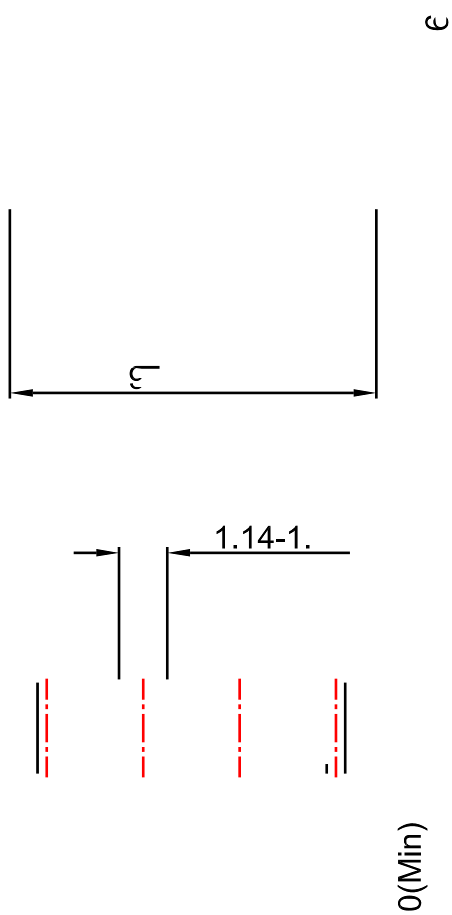
DATE 31 JUL 2016



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A) NO STA

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