

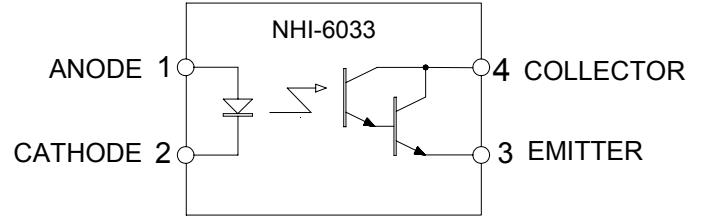


Data Device Corporation

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Miniature, Hermetically Sealed Darlington Optocoupler NHI 6033



Features;

- -55°C to +125°C Operation
- Output Voltage to 30V
- Input Current from < 0.2mA
- Low Output Saturation Typ < 1.0V
- Withstanding Voltage > 1500Vdc
- Functionally Compatible with 4N33

Terminal Number	Terminal Function
1	ANODE
2	CATHODE
3	EMITTER
4	COLLECTOR

Absolute Maximum Ratings;

Supply Voltage (Vcc)	-0.5 to 30Vdc
Continuous Input Current	60mA
Peak Input Current If (10uS,300Hz)	3A
Reverse Input Voltage Vr	5 Vdc
Led Power Dissipation (At Tc=25°C)	100mW
Output Current	100mA
Output Voltage	-0.5 to 35Vdc
Output Power Dissipation	300mW
Storage Temperature	-65°C to 150°C
Lead Solder Temperature	260°C for 10 sec.

Recommended Operating Conditions;

Output Voltage Range	to 30Vdc
Input Current	0.5 mA to 15mA
Ambient Operating Temperature Range	-55°C to 125°C

Electrical Performance Characteristics;

(At Ta = 25°C unless otherwise specified)

TEST	SYM-BOL	TEST CONDITIONS	GROUP A SUB-GROUP	LIMITS		UNITS
				MIN	MAX	
Current Transfer Ratio	Ctr	Vce = 10V, If = 1mA (at Ta = 25°C) _1	1,2,3	500		%
		Vce = 10V, If = 1mA (at Ta = -55°C) _1		100		
		Vce = 10V, If = 1mA (at Ta = 125°C) _1		200		
Collector-Emitter Breakdown Voltage	Vceo	Ic = 100uA		30	60	Vdc
Emitter – Collector Breakdown	Veco	Ie = 100Ua		5.0	7.5	Vdc
Output Saturation Voltage	Vce (sat)	If = 8mA , Ic = 2.0mA	1,2,3		1.0	Vdc
High Level Output Current (dark current)	Iceo	Vcc = 10V, If = 0μA	1,2,3		100	nAdc
Input Forward Voltage	Vf	If = 10mA	1,2		1.7	Vdc
Input Reverse Break-down Voltage	Vbr	Ir = 10μA	1,2,3	5.0	30	Vdc

Turn on time	Ton	If = 10mA, Ic = 5mA, Vcc = 10V	9,10,11		5.0	uS
Turn-off time	Toff	If = 10mA, Ic = 5mA, Vcc = 10V	9,10,11		100	uS

Isolation Characteristics:

(at Ta = 25°C unless otherwise specified)

TEST	SYM-BOL	CONDITIONS	GROUP A SUB-GROUP	LIMITS		UNITS
				MIN	MAX	
Capacitance, input to output	Cio	f = 1Mhz, Ta = 25°C _3_4	4		4	pF
Common Mode Transient Immunity, high output	Cmh	Vcm = 25v (peak) Vcc = 5.0v, RI = 2.0K If = 0mA, _4_5_7	9,10,11	500		V/μs
Common Mode Transient Immunity, lo output	Cml	Vcm = 25v (peak) Vcc = 5.0v, RI = 2.0K If = 0mA, _4_6_7	9,10,11	500		V/μs
Isolation Voltage	Viso	li-o ≤ 1uA _2_4		1500		Vdc

Notes;

- _1 Ctr is defined as the ratio of the Output Collector current (Io) to the LED Forward Current (If), times 100%.
- _2 Device is considered a two terminal device. Pins 1 and 2 are shorted together and pins 4 and 5 are shorted together.
- _3 Measured between the LED cathode and pins 4 and 5 (shorted together).
- _4 Parameters shall be tested as part of the device's initial characterization . Parameters are guaranteed to the limits specified for all lots not specifically tested.
- _5 Cmh is the maximum common mode transient to assure that the output will remain in a high logic state (Vo > 2.0V).
- _6 Cml is the maximum common mode transient to assure that the output will remain in a low logic state (Vo < 0.8V).
- _7 In applications where dV/dt may exceed 50,000 V/μs a series resistor must be included in the Vcc line to limit destructively high surge currents. The recommended value, at If = 0.5mA, is 3.3K

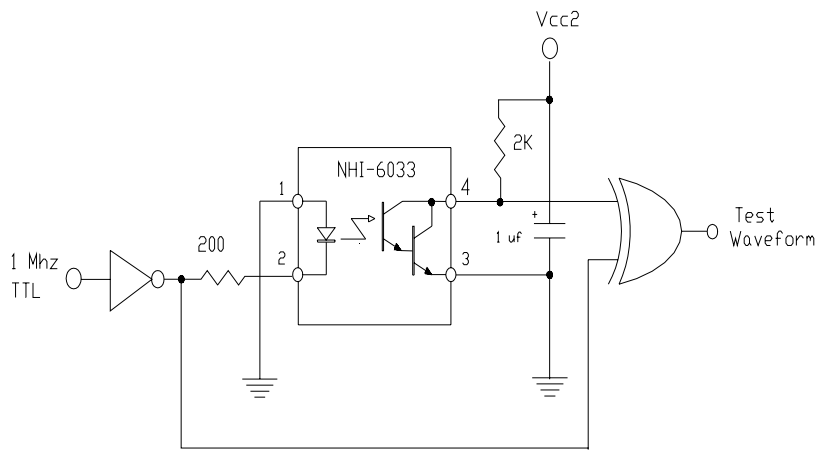


Fig 1 Switching Time Test Circuit

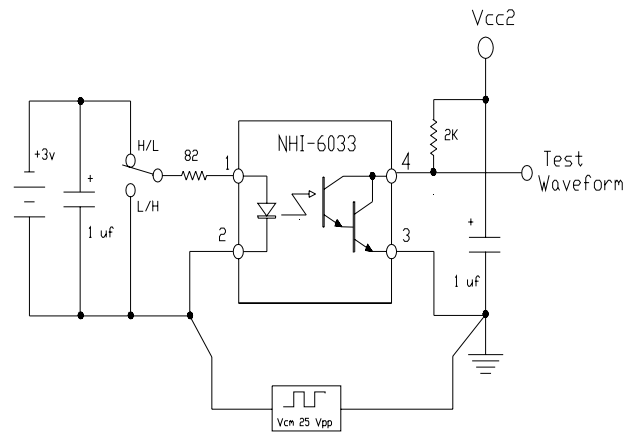


Fig 2 Common Mode Test circuit

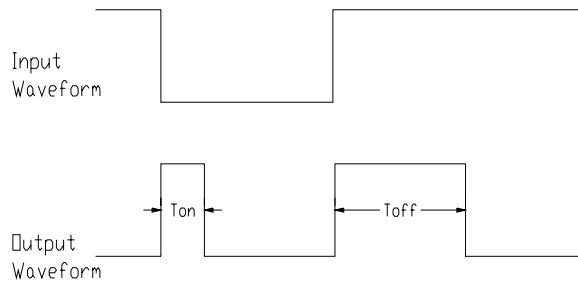


Fig 3 Switching Time Test Waveform

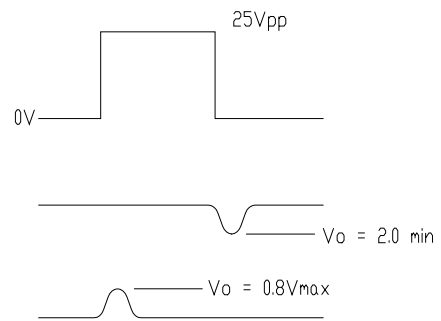
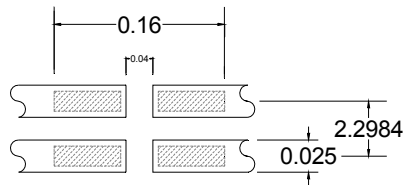
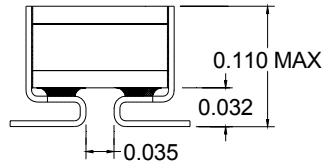
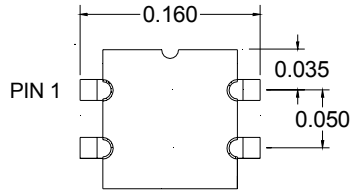


Fig 4 Common Mode Test Waveform

GULLWING

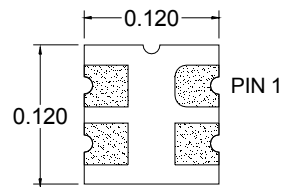
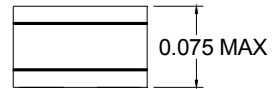
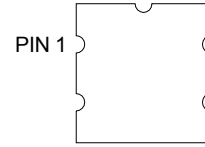
OPTION (-X)



TYPICAL P.C. PATTERN

LEADLESS

OPTION (-Z)





DATA DEVICE CORPORATION
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 EN9100:2009, JIS Q9100:2009
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