66014	**EIGHT CHANNEL, HERMETICALLY SEALED, HIGHSPEED 6N134 TYPE OPTOCOUPLER**	**OPTOELECTRONIC PRODUCTS DIVISION**

Features:

- 8 Channels Versus 2 Channels for 6N134
- 10 MHz bandwidth typical
- 1500 Vdc isolation test voltage
- TTL compatible input and output
- High radiation immunity
- Faraday shield to provide high common mode rejection
- Internal capacitor to prevent oscillation

Applications:

- COTS
- Military and Space
- High reliability systems
- Voltage level shifting
- Isolated receiver input
- Communication systems
- Medical systems

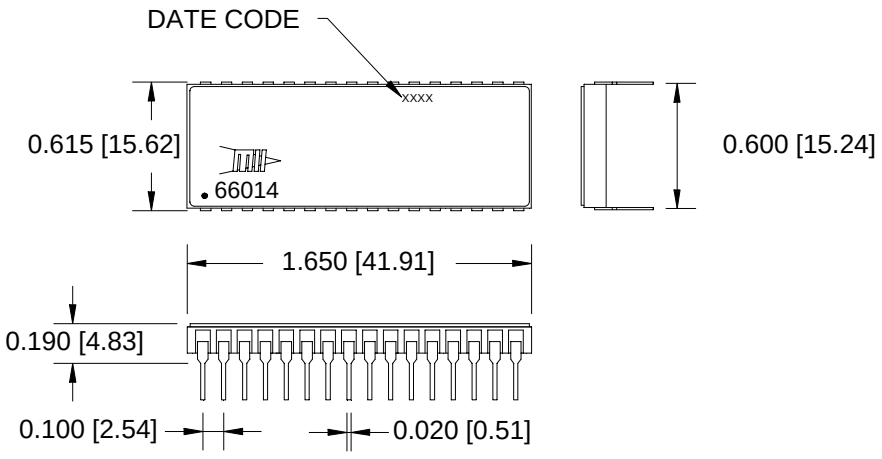
DESCRIPTION

The ***66014*** is an eight channel optocoupler specially designed with high speed, inverting detector gates. Maximum isolation can be achieved while providing TTL outputs capable of switching with propagation delays of 50 ns typical. The 66014 is a 32-pin dip hermetically sealed dip package and is available in COTS, standard, and screened versions or tested to customer specifications. The external capacitor required with the two channel unit is packaged internally in the 66014. The output channels are isolated into two groups of four. Screening available.

ABSOLUTE MAXIMUM RATINGS

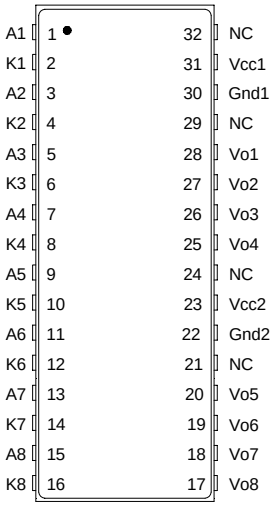
Storage Temperature - case ..... -65°C to +150°C
Operating Temperature - case ..... -55°C to +125°C
Lead Solder Temperature ..... 260°C for 10s (1.6mm below seating plane)
Peak Forward Input Current (each channel) ..... 40mA (1ms duration)
Average Forward Input Current (each channel) 20mA
Input Power Dissipation (each channel) 35mW
Reverse Input Voltage (each channel) 5V
Supply voltage - V_{CC} ..... 7V(1 minute maximum)
Output Current - I_O (each channel) 25mA
Output Power Dissipation (each channel) 40mW
Output voltage - V_O (each channel) 7V

Package Dimensions



ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]

Schematic Diagram



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ELECTRICAL CHARACTERISTICS T_a = -55°C to +125°C unless otherwise specified

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
High Level Output Current	I_{OH}		5	250	µA	V_{CC} = 5.5V, V_O = 5.5V, I_F = 250µA	1
Low Level Output Voltage	V_{OL}		0.35	0.6	V	V_{CC} = 5.5V, I_F = 10mA, $I_{OL\ (Sinking)}$ = 10mA	1
High Level Supply Current (All Channels)	I_{CCH}		72	112	mA	V_{CC} = 5.5V, I_F = 0	
Low Level Supply Current (All Channels)	I_{CCL}		104	114	mA	V_{CC} = 5.5V, I_F = 20mA	
Input Forward Voltage	V_F		1.5	1.75	V	I_F = 20mA	1
Input Reverse Breakdown Voltage	BV_R	5			V	I_R = 10µA	
Input-Output Insulation Leakage Current	I_{I-O}			4.0	µA	V_{I-O} = 1500Vdc, Relative Humidity = 45%, t_a = 25°C, t = 5s	2
Propagation Delay Time to High Output Level	t_{PLH}		45	100	ns	R_L = 510Ω, C_L = 50pF, I_F = 13mA, T_a = 25°C	5
Propagation Delay Time to Low Output Level	t_{PHL}		55	100	ns	R_L = 510Ω, C_L = 50pF. I_F = 13mA, T_a = 25°C	6
Delay Time Low to High Output Level (90%)	t_{LH}			90	ns	R_L = 510Ω, C_L = 50pF. I_F = 13mA, T_a = 25°C	
Delay Time High to Low Output Level (90%)	t_{HL}			40	ns	R_L = 510Ω, C_L = 50pF. I_F = 13mA, T_a = 25°C	

TYPICAL CHARACTERISTICS T_A = 25°C, V_{CC} = 5V Each Channel

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Input Capacitance	C_{IN}		60		pF	$V_{F=0}$, f = 1MHz	1
Input Diode Temperature Coefficient	$\Delta V_F/\Delta T_A$		-1.9		mV/°C	I_F = 20mA	1
Resistance (Input-Output)	R_{I-O}		10^9		Ω	V_{I-O} = 500V	3,1
Capacitance (Input-Output)	C_{I-O}		1.7		pF	f = 1MHz	3.1
Input-Input Insulation Leakage Current	I_{I-I}		10		nA	Relative Humidity = 45% V_{I-I} = 500V, t = 5s	4,1
Resistance (Input-Input)	R_{I-I}		10^9		Ω	V_{I-I} = 500V	4,1
Capacitance (Input-Input)	C_{I-I}		0.80		pF	f = 1MHz	4,1
Output Rise-Fall Time (10-90%)	t_f, t_f		35	90	ns	R_L = 510Ω, C_L = 50pF. I_F = 13mA	
Common Mode Transient Immunity at High Output Level	CM_H	1000	5000		V/µs	V_{CM} = 10V (peak), V_O (min) = 2V, R_L = 510Ω, I_F = OmA	7
Common Mode Transient Immunity at Low Output Level	CM_L	1000	5000		V/µs	V_{CM} = 10V (peak), V_O (max) = 0.8V, R_L = 510Ω, I_F = 1OmA	8

NOTES:
1. Each channel.
2. Measured between pins 1 through 8 shorted together and pins 17 through 32 shorted together.
3. Measured between input pins and output pins.
4. Measured between set of input pins.
5. The t_{PLH} propagation delay is measured from the 6.5mA point on the trailing edge of the input pulse to the 1.5V point on the trailing edge of the output pulse.
6. The t_{PHL} propagation delay is measured from the 6.5mA point on the leading edge of the input pulse to the 1.5V point on the leading edge of the output pulse.
7. CM_h is the max. tolerable common mode transient to assure that the output will remain in a high logic state (i.e. V_o >2.0V).
8. CM_l is the max. tolerable common mode transient to assure that the output will remain in a low logic state (i.e. V_o < 0.8V).
9. Pin 21 is connected to the ground plane and seal ring.

RECOMMENDED OPERATING CONDITIONS:

PARAMETER	SYMBOL	MIN	MAX	UNITS
Input Current, Low Level Each Channel	I_{FL}	0	250	µA
Input Current, High Level Each Channel	I_{FH}	12.5	20	mA
Supply Voltage	V_c	4.5	5.5	V

SELECTION GUIDE

PART NUMBER	PART DESCRIPTION
66014-000	Eight Channel with 100% device screening
66014-002	Eight Channel Optocoupler, commercial, tested over full military temperature range (-55°C to +125°C)
66014-003	Eight Channel Optocoupler, commercial (0° to 70°C)

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