

66126**SINGLE/DUAL CHANNEL, HERMETICALLY SEALED
OPTOCOUPLER, SIMILAR TO 4N55**

09/22/03

Features:

- DSCC Approved 8767902PX (Dual) and 9085401HPX (Single)
- 1500 Vdc isolation test voltage
- TTL and CMOS compatible
- 2 MHz bandwidth typical
- Faraday shield to provide high common mode rejection

Applications:

- Military and space
- Voltage level shifting
- Isolated receiver input
- Communication systems
- Medical systems

DESCRIPTION

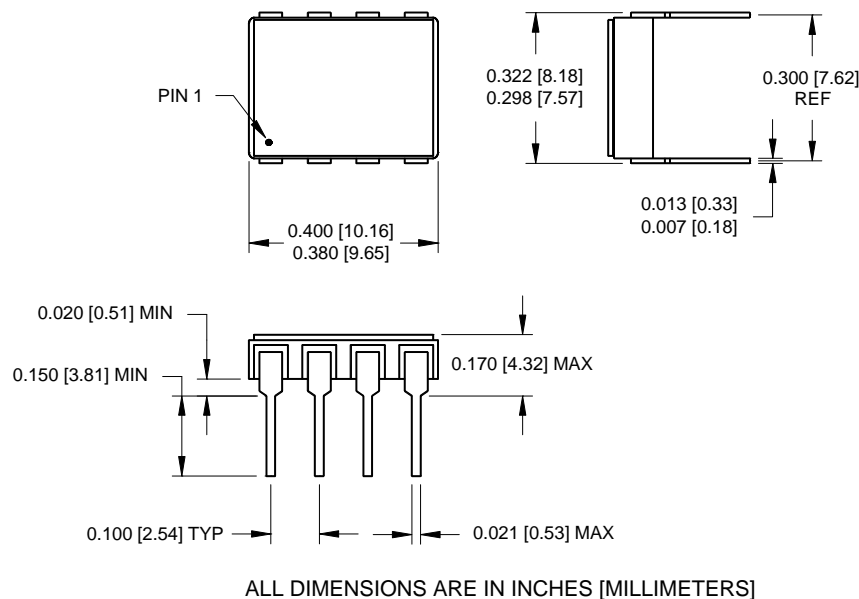
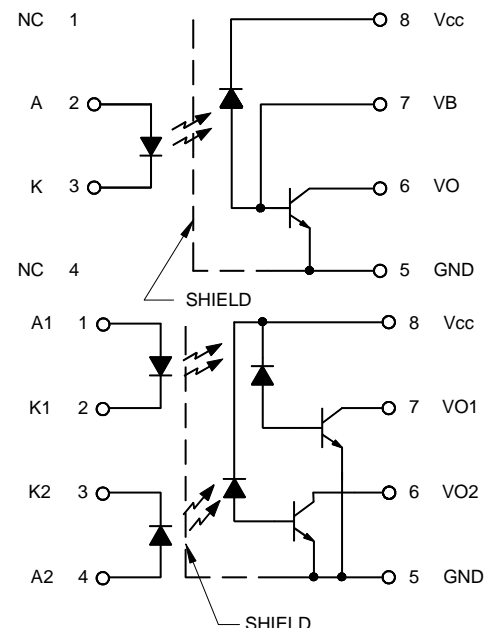
The **66126** single/dual channel optocouplers utilize infrared LEDs optically coupled to high gain photo detectors. These unique optocouplers provide high switching speeds while providing high isolation (1500V min) over the full military temperature range (-55° to +125°C). The 66126 is available in standard and screened versions or tested to customer specifications.

ABSOLUTE MAXIMUM RATINGS

Peak Forward Input Current	40mA (1ms duration)
Average Forward Input Current	20mA
Input Power Dissipation (each channel) (Note 1).....	36mW
Reverse Input Voltage (each channel)	5V
Supply voltage - V_{CC} (each channel) (1 minute).....	7V
Output Current - I_O (each channel)	25mA
Output Power Dissipation (each channel). (Note 2)	50mW
Output Voltage - V_O (each channel)	7V
Base Current (Single Channel)	5mA
Storage Temperature.....	-65°C to +150°C
Operating Free-Air Temperature Range	-55°C to +125°C
Lead Solder Temperature (10 seconds, 1/16" below seating plane).....	260°C

Notes:

1. Derate at 0.36 mW/°C above 25°C.
2. Derate at 0.5 mW/°C above 25°C.

Package Dimensions**Schematic Diagrams**

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ELECTRICAL CHARACTERISTICST_a = -55°C to 125°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Current Transfer Ratio	CTR	9	20		%	I _F = 16mA, V _O = 0.4V, V _{CC} = 4.5V	1, 2
Output Leakage Current	I _{OH1}		70	250	μA	I _F = 250μA, V _{CC} = V _O = 18V I _F (other channel) = 20mA	1
Logic High Output Current	I _{OH}		20	100	μA	I _F = 250μA, V _{CC} = V _O = 18V I _F (other channel) = 20mA	1
High Level Output Current	I _{CCH}		0.2	10	μA	I _F = 0, V _{CC} = 18V I _F (other channel) = 20mA	1
Low Level Supply Current	I _{CCL}		35	200	μA	I _{F1} = I _{F2} = 20mA, V _{CC} = 18V	1
Input Forward Voltage	V _F		1.5	1.8	V	I _F = 20mA	1
Input Reverse Breakdown Voltage	BV _R	3			V	I _R = 10μA	1
Input-Output Insulation Leakage Current	I _{I-O}			1.0	μA	V _{I-O} = 1500Vdc, Relative Humidity = 45% t _A = 25°C, t = 5s	4
Propagation Delay Time To High Output Level	t _{PLH}		2	6	μs	I _F = 16mA, V _{CC} = 5V, R _L = 8.2kΩ C _L = 50pF	1
Propagation Delay Time To Low Output Level	t _{PHL}		0.4	2	μs	I _F = 16mA, V _{CC} = 5V, R _L = 8.2kΩ C _L = 50pF	1

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

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Input Capacitance	C _{IN}	60	120		pF	V _F = 0, f = MHz	1
Capacitance (Input-Output)	C _{I-O}		1.5		pF	f = 1MHz, V _F = 0	1, 4
Capacitance (Input-Input) (Dual)	C _{I-I}		0.55		pF	f = 1MHz	3
Input Diode Temperature Coefficient	$\frac{\Delta V_F}{\Delta T_A}$		-1.8		mV/°C	I _F = 18mA	1
Resistance (Input-Output)	R _{I-O}		10 ¹²		Ω	V _{I-O} = 500Vdc	1
Input-Input Insulation Leakage Current (Dual)	I _{I-I}		1		pA	Relative Humidity = 45% V _{I-I} = 500Vdc, t = 5s	3
Common Mode Transient immunity at High Output Level	CM _H	500	1000		V/μs	V _{CM} = 50V p-p, R _L = 8.2kΩ, I _F = 0mA	1, 5
Common Mode Transient Immunity at Low Output Level	CM _L	500	1000		V/μs	V _{CM} = 50V p-p, R _L = 8.2kΩ, I _F = 16mA	1, 6

NOTES:

- Each channel.
- Current Transfer Ratio is defined as the ratio of output collector current, I_O, to the forward LED input current, I_F, times 100%.
- Measured between each input pair shorted together.
- Measured between input pins shorted together and the output pins shorted together.
- CM_H is the maximum tolerable common mode transient to assure that the output will remain in a high logic state (i.e. V_O > 2.0V).
- CM_L is the maximum tolerable common mode transient to assure that the output will remain in a low logic state (i.e. V_O < 0.8V).

RECOMMENDED OPERATING CONDITIONS:

PARAMETER	SYMBOL	MIN	MAX	UNITS
Input Current, Low Level	I _{FL}	0	2	μA
Supply Voltage	V _{CC}	2.0	18	V
Input Current, High Level	I _{FH}	2.0	20	mA

SELECTION GUIDE

PART NUMBER	PART DESCRIPTION
66126-001	Single Channel, (-55° to +125° C)
66126-011	Single Channel, Commercial
66126-105	Single Channel, DSCC DWG 5962-90854 01HPX
66126-002	Dual Channel, (-55° to +125° C)
66126-012	Dual Channel, Commercial
66126-103	Dual Channel, DSCC DWG 5962-87679 02PX