66186 TWO CHANNEL, HERMETICALLY SEALED OPTOCOUPLER PHOTOTRANSISTOR OUTPUT

MICROPAC
OPTOELECTRONIC PRODUCTS DIVISION

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Features:

- 2 Channels of high voltage MC0-22
- 1500 Vdc isolation test voltage
- TTL/CMOS compatible input
- Small size, dense package
- Hermetic seal for high reliability
- Element evaluation performed upon request

Applications:

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

DESCRIPTION

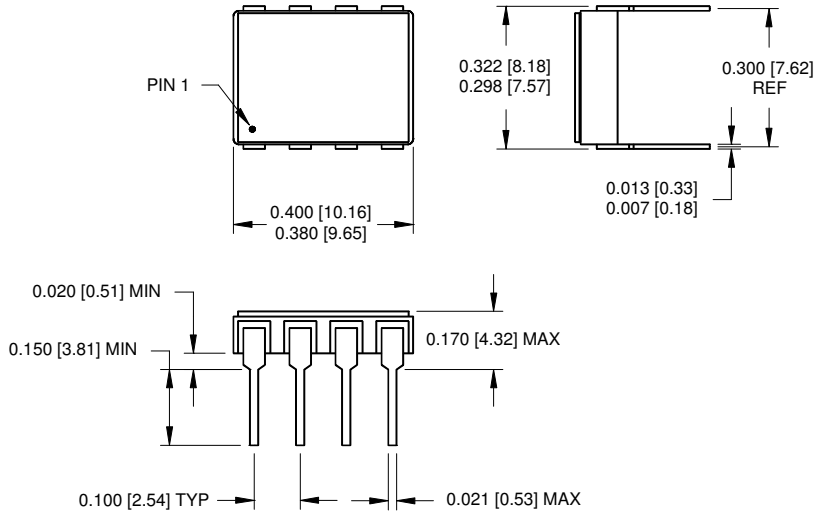
The ***66186*** is a two channel optocoupler with inputs and outputs isolated for independent operation. Each channel has an LED and a phototransistor. Maximum isolation can be achieved while providing high current transfer ratios. The 66186 is in a 8 pin hermetically sealed package and is available in COTS, standard, and screened versions or tested to customer specifications.

ABSOLUTE MAXIMUM RATINGS

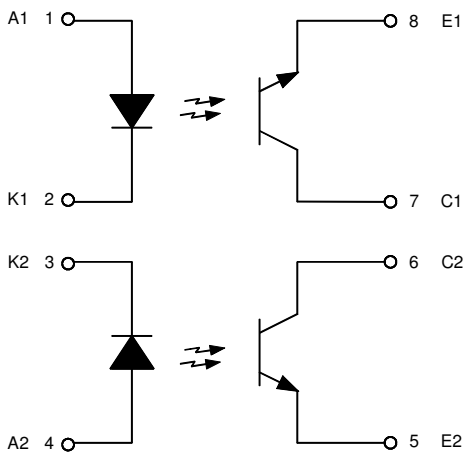
Peak Forward Input Current (each channel) (1ms duration)	60mA
Input - Output Isolation	1.5 kV
Average Forward Input Current (each channel)	20mA
Input Power Dissipation (each channel) (Note 1)	75mW
Reverse Input Voltage (each channel)	5V
Output Current - I_O (each channel)	25mA
Output Power Dissipation (each channel) (Note 2)	100mW
Output voltage - V_O (each channel)	70V
Total Package Dissipation	350mW
Storage Temperature	-65°C to +150°C
Operating Temperature	-55°C to +125°C
Lead Solder Temperature (10 seconds, 1/16" below seating plane)	260°C

Notes:
1. Derate linearly 0.75 mW/°C above 25°C.
2. Derate linearly 0.40 mW/°C above 25°C.

Package Dimensions



Schematic Diagram



ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]

ELECTRICAL CHARACTERISTICS

INPUT DIODE

T_a = 25°C, unless otherwise specified

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Forward voltage	V_F		1.5	1.7	V	I_F = 20mA	1
Reverse Breakdown Voltage	V_{BR}	6			V	I_R = 10μA	1
Capacitance	C_{IN}		20		pF	V_F = 0V, f = 1MHz	1

OUTPUT TRANSISTOR

T_a = 25°C, unless otherwise specified

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	70			V	I_C = 1mA, I_F = 0	1
Collector-Emitter Saturated Voltage	$V_{CE(SAT)}$			0.4	V	I_F = 20mA, I_C = 1mA	1
Collector Leakage Current	I_{CEO}			50	nA	V_{CE} = 10V	1

COUPLED CHARACTERISTICS

T_a = 25°C, unless otherwise specified

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Saturated Current Transfer Ratio	CTR_{SAT}	70	210	250	%	I_F = 10mA, V_{CE} = 0.4V	1
Current Transfer Ratio	CTR	100	300	450	%	I_F = 10mA, V_{CE} = 10V	1
Input – Output Isolation	V_{I-O}	500			V	I = 100 nA	2
Rise Time	t_R			20	μs	V_{CC} = 10V, I_F = 10 mA, R_L = 100Ω	1
Fall Time	t_F			20	μs	V_{CC} = 10V, I_F = 10 mA, R_L = 100Ω	1

1. Each channel.
2. This parameter measured with all input leads shorted together and all output leads shorted together.

SELECTION GUIDE

PART NUMBER	PART DESCRIPTION
66186-000	Screened
66186-002	Lot sample tested over full military temperature range (-55°C to +125°C)
66186-004	Commercial, lot sample testing (-40° to 85°C)
66186-003	Commercial, lot sample testing (0° to 70°C)