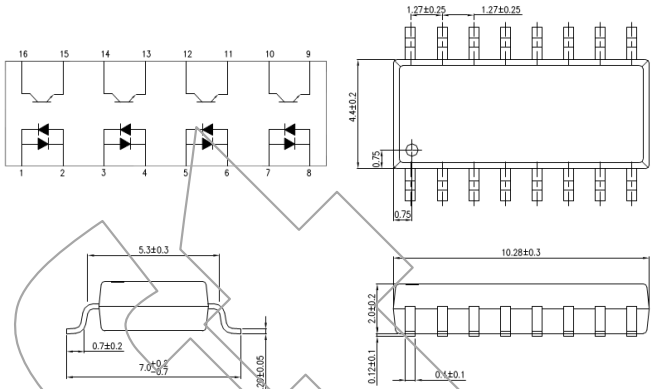
TLP280-4

DESCRIPTION

The TLP280-4 is a four channel optically coupled isolator, each channel consists of two infrared emitting diode connected in inverse parallel and optically coupled to an NPN silicon photo transistor.

This device belongs to Isocom Compact Range of Optocouplers.



FEATURES

- Half Pitch 1.27mm
- High AC Isolation voltage 3750V_{RMS}
- Wide Operating Temperature Range -55°C to 110°C
- Pb Free and RoHS Compliant
- UL Approval Pending

APPLICATIONS

- Computer Terminals
- Industrial System Controllers
- Measuring Instruments
- System Appliances

ORDER INFORMATION

- Available in Tape and Reel with 2000pcs per reel

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

Input Diode

Forward Current	50mA
Reverse Voltage	6V
Power dissipation	65mW

Output Transistor

Collector to Emitter Voltage BV_{CEO}	80V
Emitter to Collector Voltage BV_{ECO}	7V
Collector Current	50mA
Power Dissipation	100mW

Total Package

Isolation Voltage	3750V_{RMS}
Total Power Dissipation	170mW
Operating Temperature	-55 to 110 °C
Storage Temperature	-55 to 150 °C
Lead Soldering Temperature (10s)	260°C

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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

INPUT

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward Voltage	V_F	I_F = ±20mA		1.2	1.4	V
Input Capacitance	C_{IN}	V_F = 0V, f = 1MHz		60		pF

OUTPUT

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector—Emitter breakdown Voltage	BV_{CEO}	I_C = 0.1mA, I_F = 0mA	80			V
Emitter—Collector breakdown Voltage	BV_{ECO}	I_E = 10µA, I_F = 0mA	7			V
Collector-Emitter Dark Current	I_{CEO}	V_{CE} = 50V, I_F = 0mA			100	nA

COUPLED

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Current transfer ratio	CTR	I_F = ±1mA, V_{CE} = 5V	20		400	%
Collector—Emitter Saturation Voltage	$V_{CE(sat)}$	I_F = ±8mA, I_C = 2.4mA			0.4	V
Input to Output Isolation Voltage	V_{ISO}	See note 1	3750			V_{RMS}
Input to Output Isolation Resistance	R_{ISO}	V_{IO}= 500VDC See note 1	$5x10^{10}$	$1x10^{11}$		Ω
Output Rise Time	t_r	V_{CE} = 2V, Ic = ±2mA, R_L = 100Ω		3	18	µs
Output Fall Time	t_f	V_{CE} = 2V, Ic = ±2mA, R_L = 100Ω		4	18	µs

Note 1 : Measured with input leads shorted together and output leads shorted together

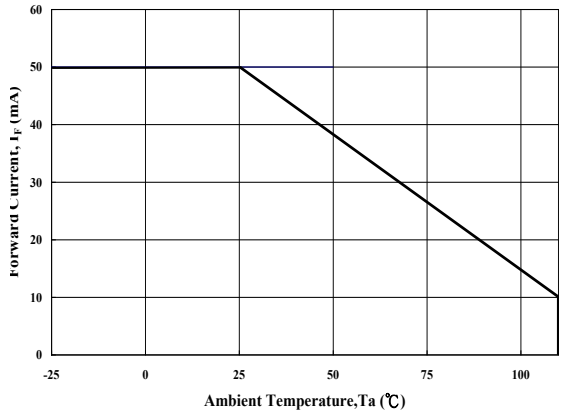


Fig 1 Forward Current vs T_A

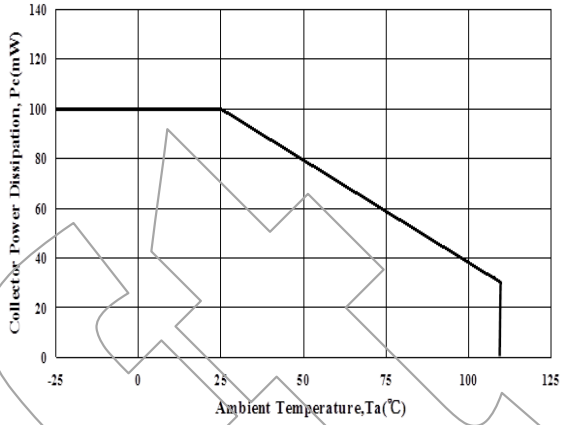


Fig 2 Collector Power Dissipation vs T_A

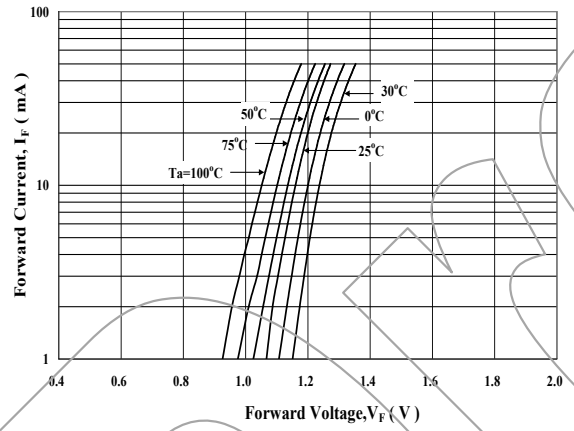


Fig 3 Forward Current vs Forward Voltage

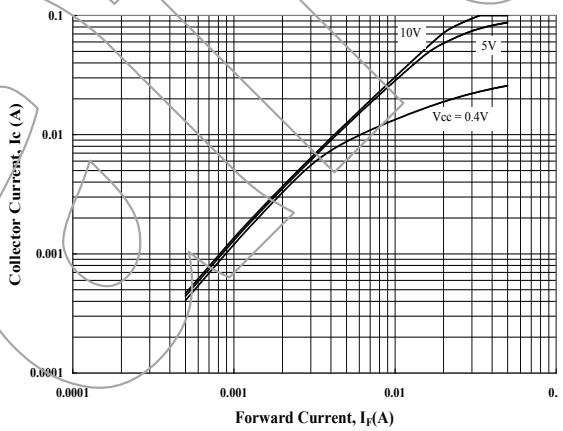


Fig 4 Collector Current vs Forward Current

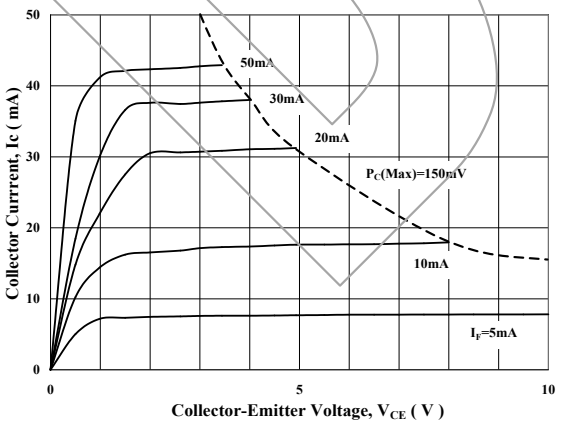


Fig 5 Collector Current vs Collector-Emitter Voltage

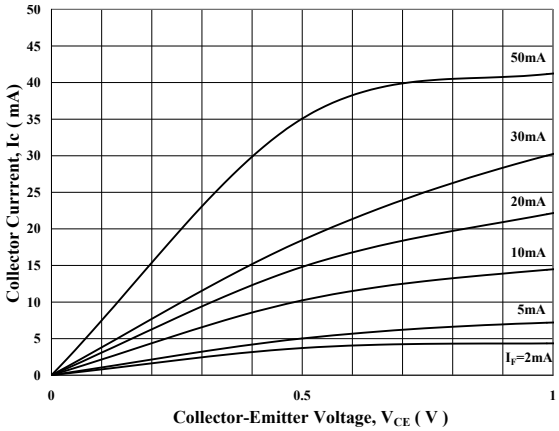


Fig 6 Collector Current vs Low Collector-emitter Voltage

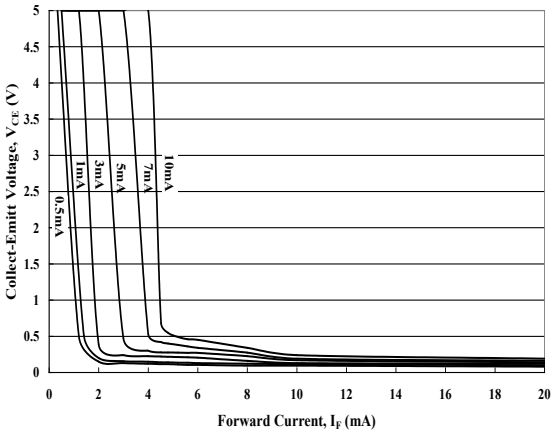


Fig 7 Collector-Emitter Saturation Voltage vs Forward Current

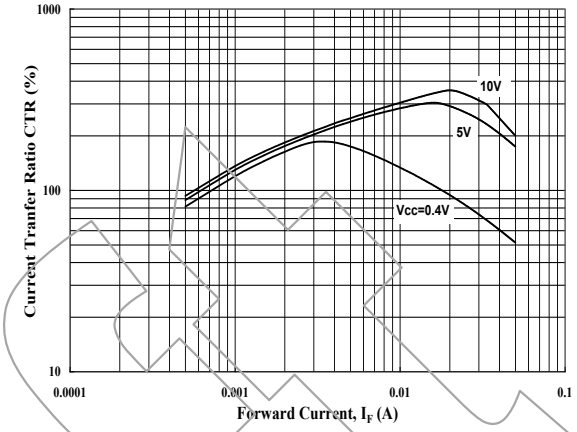


Fig 8 Current Transfer Ratio vs Forward Current

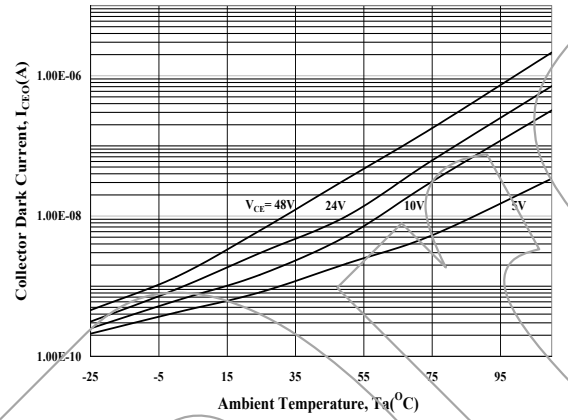


Fig 9 Collector Dark Current vs T_A

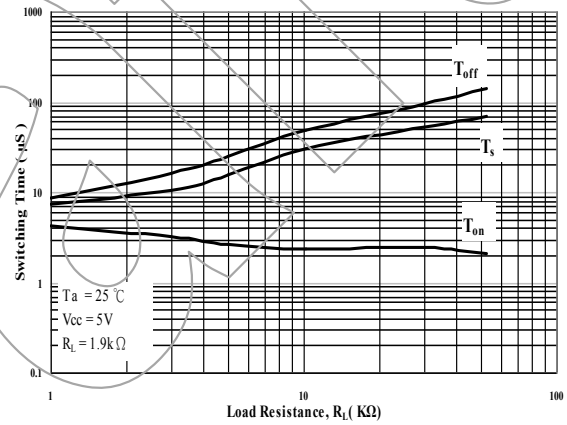


Fig 10 Switching Time vs Load Resistance

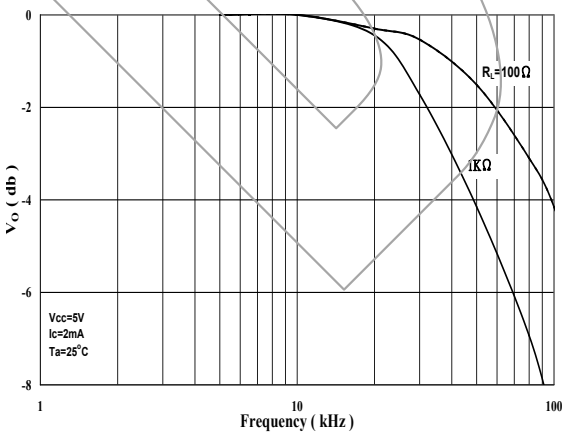
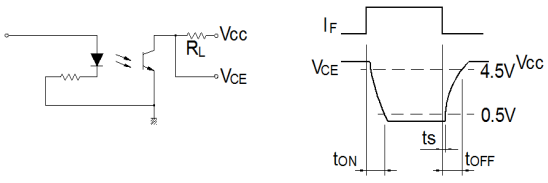


Fig 11 Frequency Response



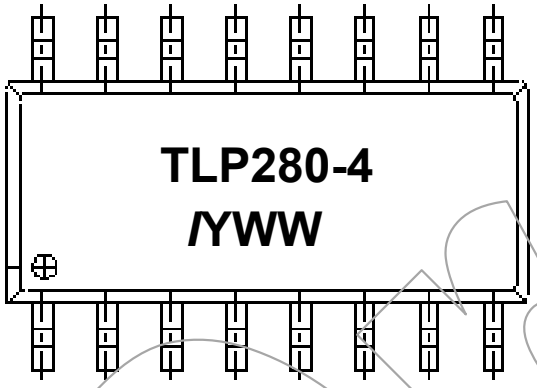
Switching Time Test Circuit

ORDER INFORMATION

TLP280-4

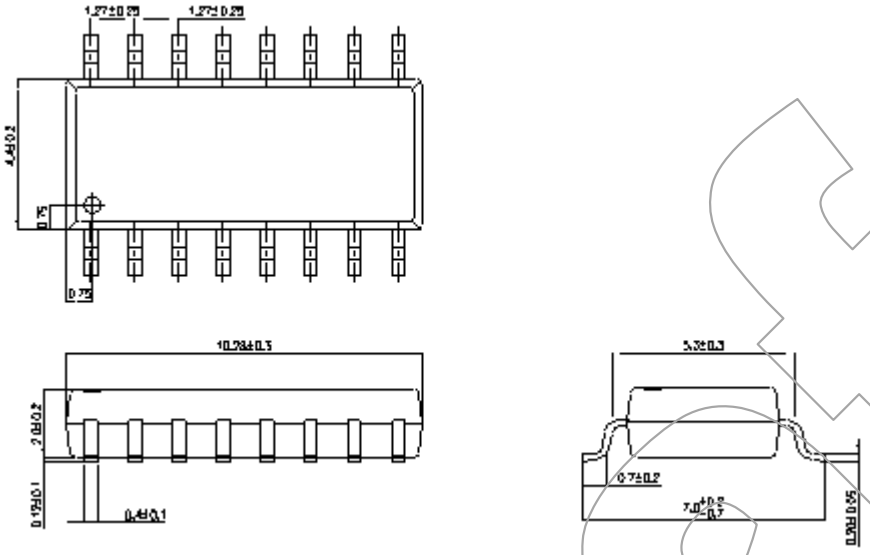
After PN	Description	Packing quantity
None	Surface Mount Tape & Reel	2000 pcs per reel

Device Marking

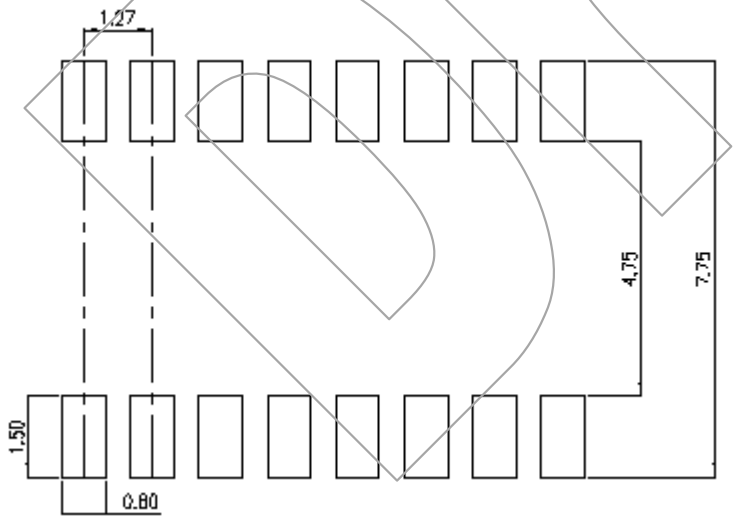


TLP280-4 denotes Device Part Number
Y denotes 1 digit Year code
WW denotes 2 digit Week code
/ denotes Isocom

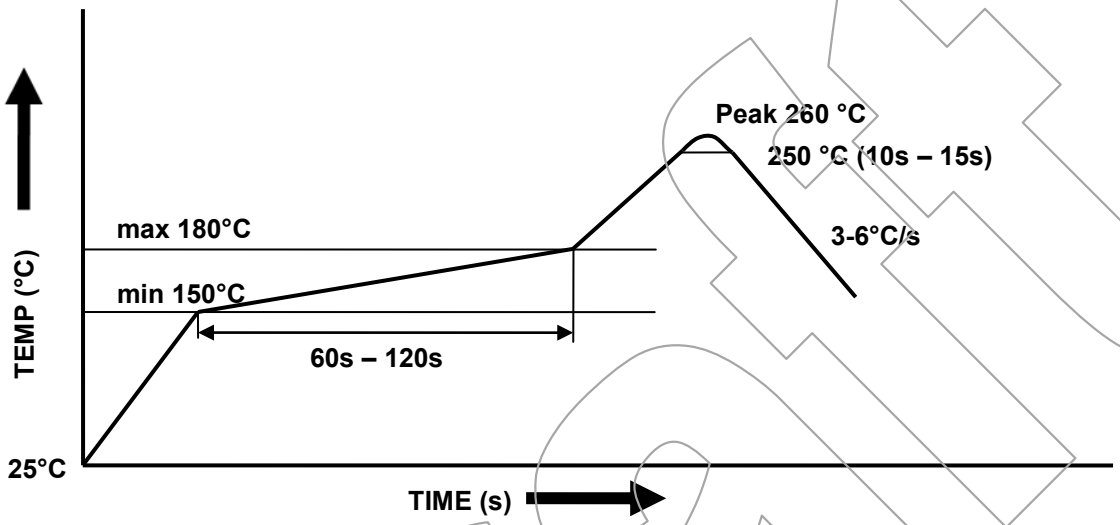
PACKAGE DIMENSIONS (mm)



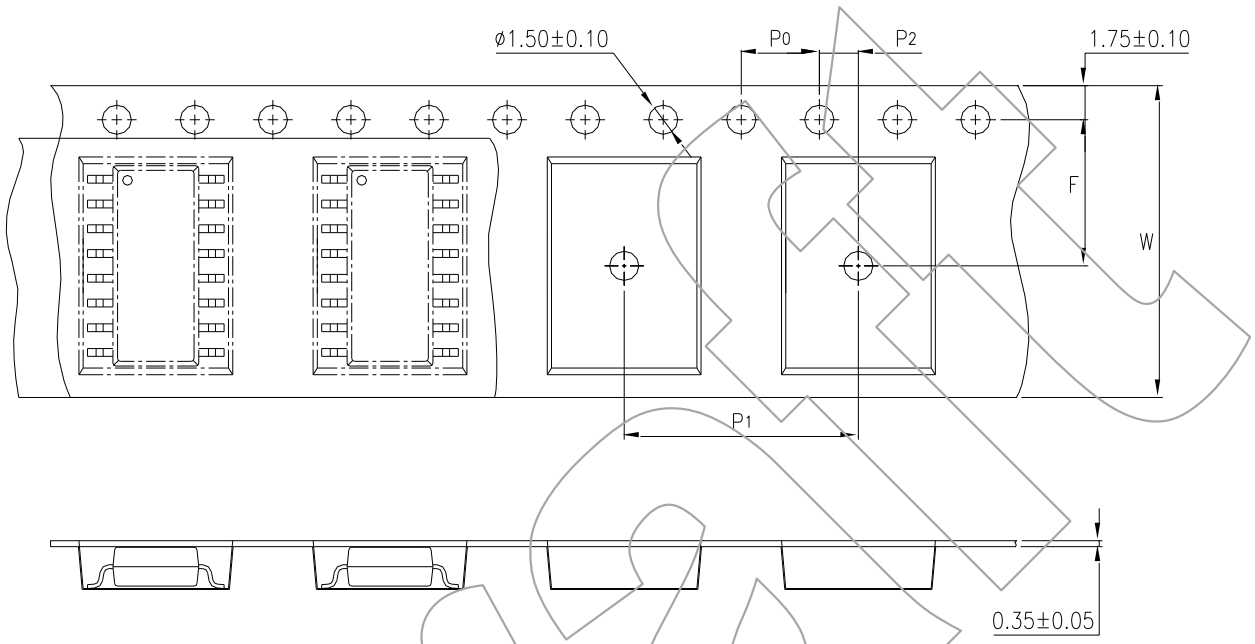
Recommended Solder Pad Layout (mm)



IR REFLOW SOLDERING TEMPERATURE PROFILE
(One Time Reflow Soldering is Recommended)



Tape and Reel Packaging



Description	Symbol	Dimension in mm (inches)
Tape wide	W	16 ± 0.3 (.47)
Pitch of sprocket holes	P_0	4 ± 0.1 (.15)
Distance of compartment	F P_2	7.5 ± 0.1 (.217) 2 ± 0.1 (.079)
Distance of compartment to compartment	P_1	12 ± 0.1 (.63)

Notes

- Isocom is continually improving the quality, reliability, function or design and Isocom reserves the right to make changes without further notices.

- The products shown in this publication are designed for the general use in electronic applications such as office automation equipment, communications devices, audio/visual equipment, electrical application and instrumentation.

- For equipment/application where high reliability or safety is required, such as space applications, nuclear power control equipment, medical equipment, etc., please contact our sales representatives.

- When requiring a device for any ”specific” application, please contact our sales for advice.

- The contents described herein are subject to change without prior notice.

- Do not immerse device body in solder paste.