IS1100

DESCRIPTION

The IS1100 series optocoupler consists of an infrared emitting diode optically coupled to an NPN silicon photo transistor.

This device belongs to Isocom Compact Range of Optocouplers.

FEATURES

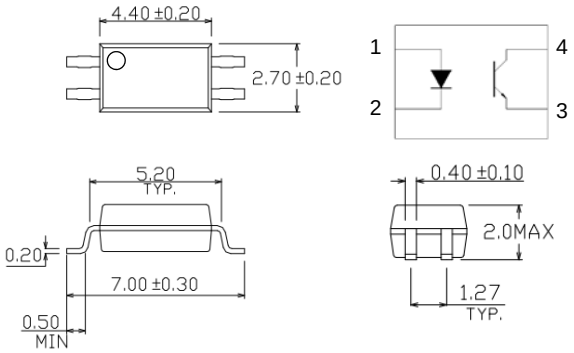
- Half Pitch 1.27mm
- High AC Isolation voltage 3750V_{RMS}
- CTR Selections Available
- Wide Operating Temperature Range -55°C to 110°C
- Pb Free and RoHS Compliant
- UL Approval E91231, Model THP

APPLICATIONS

- Switching Mode Power Supply
- Industrial System Controllers
- Measuring Instruments
- Signal Transmission between Systems of Different Potentials and Impedances

ORDER INFORMATION

- Available in Tape and Reel with 1000pcs per reel



All dimensions in mm.

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

Input Diode

Forward Current	50mA
Reverse Voltage	6V
Power dissipation	70mW

Output Transistor

Collector to Emitter Voltage BV_{CEO}	80V
Emitter to Collector Voltage BV_{ECO}	7V
Collector Current	50mA
Power Dissipation	150mW

Total Package

Isolation Voltage	3750V_{RMS}
Total Power Dissipation	200mW
Operating Temperature	-55 to 110 °C
Storage Temperature	-55 to 125 °C
Lead Soldering Temperature (10s)	260°C

ISOCOM COMPONENTS 2004 LTD
Unit 25B, Park View Road West, Park View Industrial Estate
Hartlepool, Cleveland, TS25 1UD, United Kingdom
Tel: +44 (0)1429 863 609 Fax : +44 (0)1429 863 581
e-mail: sales@isocom.co.uk
http://www.isocom.com

ISOCOM COMPONENTS ASIA LTD
Hong Kong Office,
Block A, 8/F, Wah Hing Industrial mansion,
36 Tai Yau Street, San Po Kong, Kowloon, Hong Kong.
Tel: +852 2995 9217 Fax : +852 8161 6292
e-mail: sales@isocom.com.hk

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
Reverse Current	I_R	VR = 4V			10	µA
Input Capacitance	C_{IN}	V_F = 0V, f = 1KHz		30	250	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 = 0.1mA, I_F = 0mA	7			V
Collector-Emitter Dark Current	I_{CEO}	V_{CE} = 20V, I_F = 0mA			100	nA

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

COUPLED

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Current transfer ratio	CTR	I_F = 5mA, V_{CE} = 5V				%
		IS1100	50		600	
		I_F = 10mA, V_{CE} = 5V				
		IS1101	40		80	
		IS1102	63		125	
		IS1103	100		200	
		IS1104	160		320	
		I_F = 10mA, V_{CE} = 5V				
		IS1105	50		150	
		IS1106	100		300	
		IS1107	80		160	
		IS1108	130		260	
		IS1109	200		400	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_F = 10mA, I_C = 1mA		0.1	0.2	V
Input to Output Isolation Voltage	V_{ISO}	See note 1	3750			V_{RMS}
Input to Output Isolation Resistance	R_{ISO}	V_{IO}= 500V See note 1	$5x10^{10}$			Ω
Floating Capacitance	C_f	V_F = 0V, f = 1MHz		0.3		pF
Output Rise Time	t_r	V_{CE} = 2V, Ic = 2mA, R_L = 100Ω		6	18	µs
Output Fall Time	t_f	V_{CE} = 2V, Ic = 2mA, R_L = 100Ω		6	18	µs

Note 1 : Measured with input leads shorted together and output leads shorted together, R.H 40% to 60%

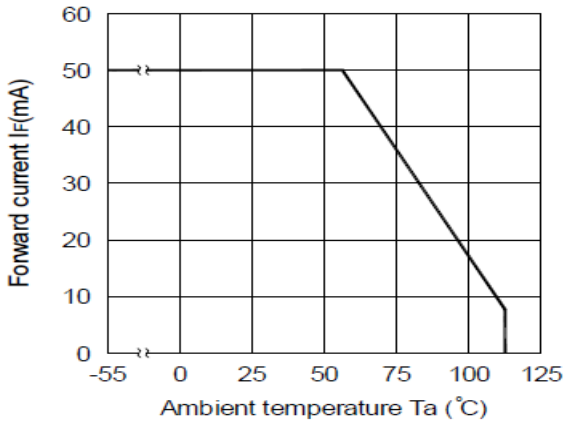


Fig 1 Forward Current vs Ambient Temperature

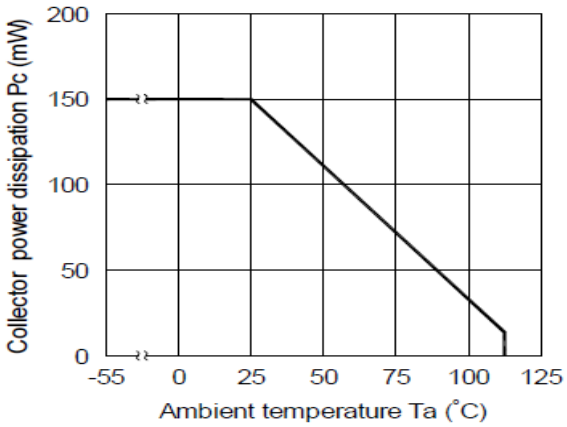


Fig 2 Collector Power Dissipation vs T_A

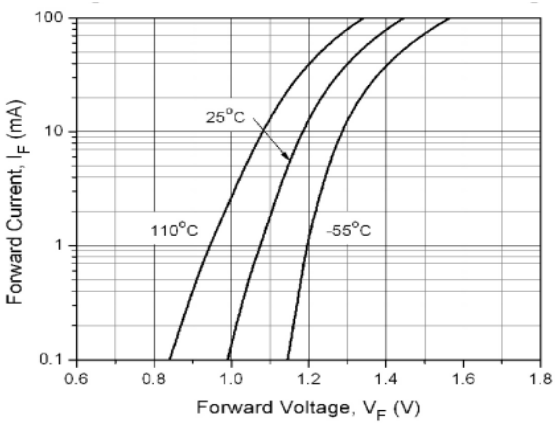


Fig 3 Forward Current vs Forward Voltage

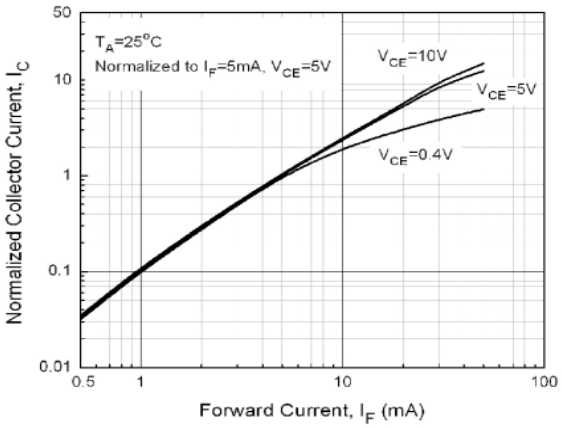


Fig 4 Normalized Collector Current vs Forward Current

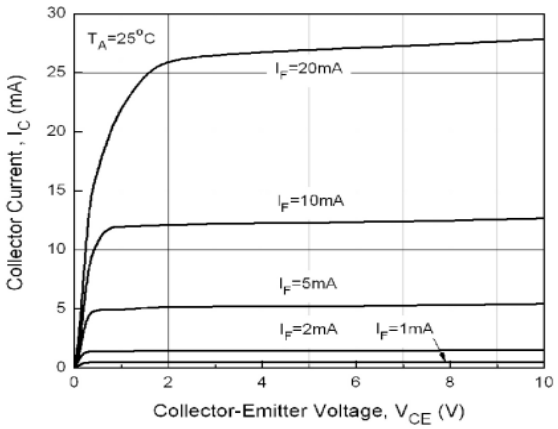


Fig 5 Collector Current vs Collector-Emitter Voltage (1)

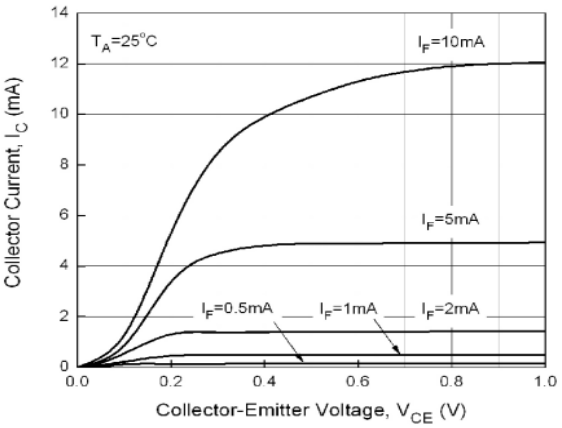


Fig 6 Collector Current vs Collector-Emitter Volatge (2)

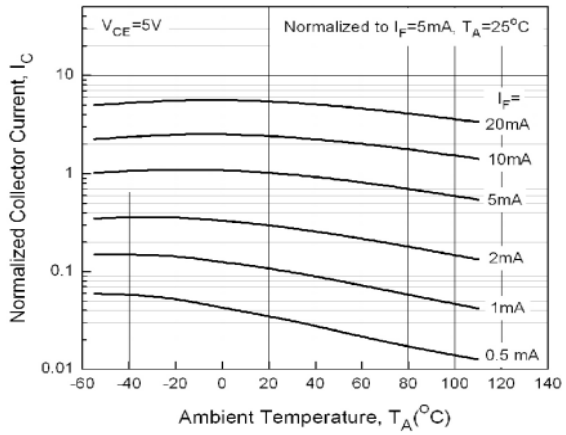


Fig 7 Normalized Collector Current vs Ambient Temperature

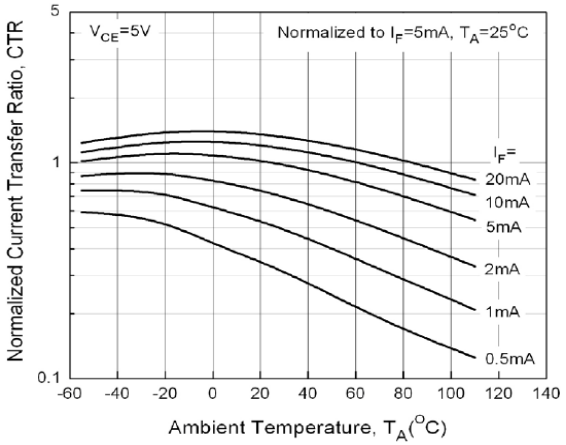


Fig 8 Normalized CTR vs Ambient Temperature

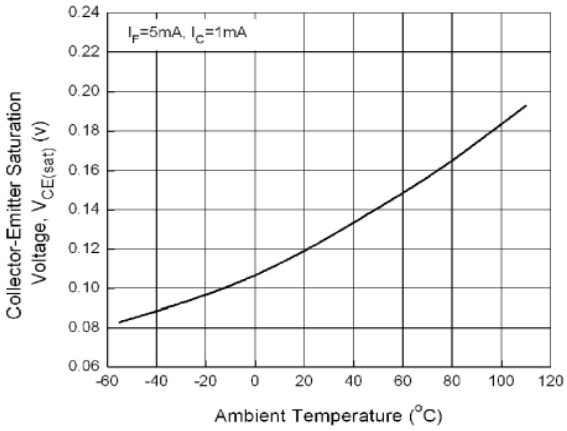


Fig 9 Collector-Emitter Voltage vs Ambient Temperature

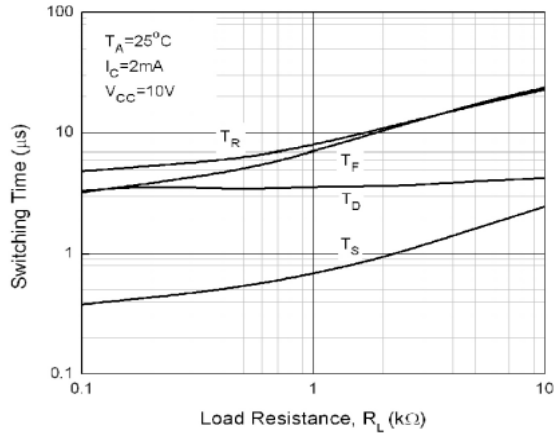
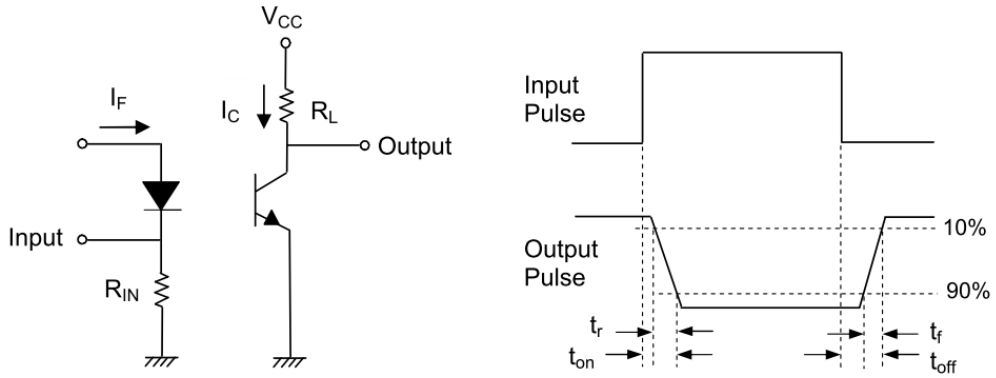


Fig 10 Switching Time vs Load Resistance

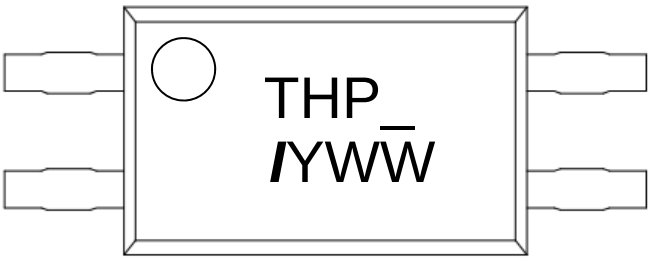


Switching Time Test Circuit

ORDER INFORMATION

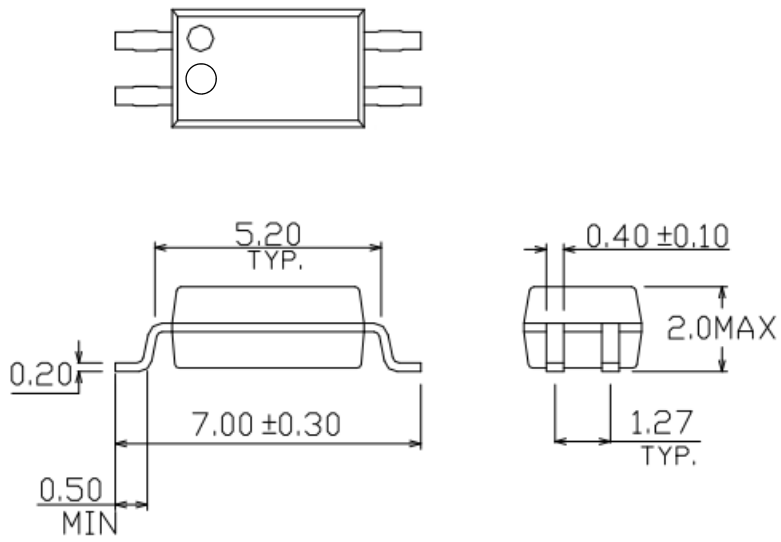
IS1100			
After PN	**PN**	**Description**	**Packing quantity**
None	IS1100	Surface Mount Tape & Reel	1000 pcs per reel
Any CTR Grade	IS1101, IS1102, IS1103, IS1104, IS1105, IS1106, IS1107, IS1108, IS1109,	Surface Mount Tape & Reel	1000 pcs per reel

Device Marking

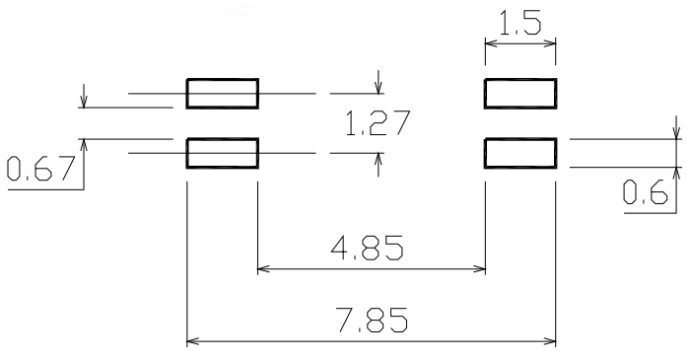


THP_ denotes Device Part Number where "_" denoted CTR Grade
I denotes Isocom
Y denotes 1 digit Year code
WW denotes 2 digit Week code

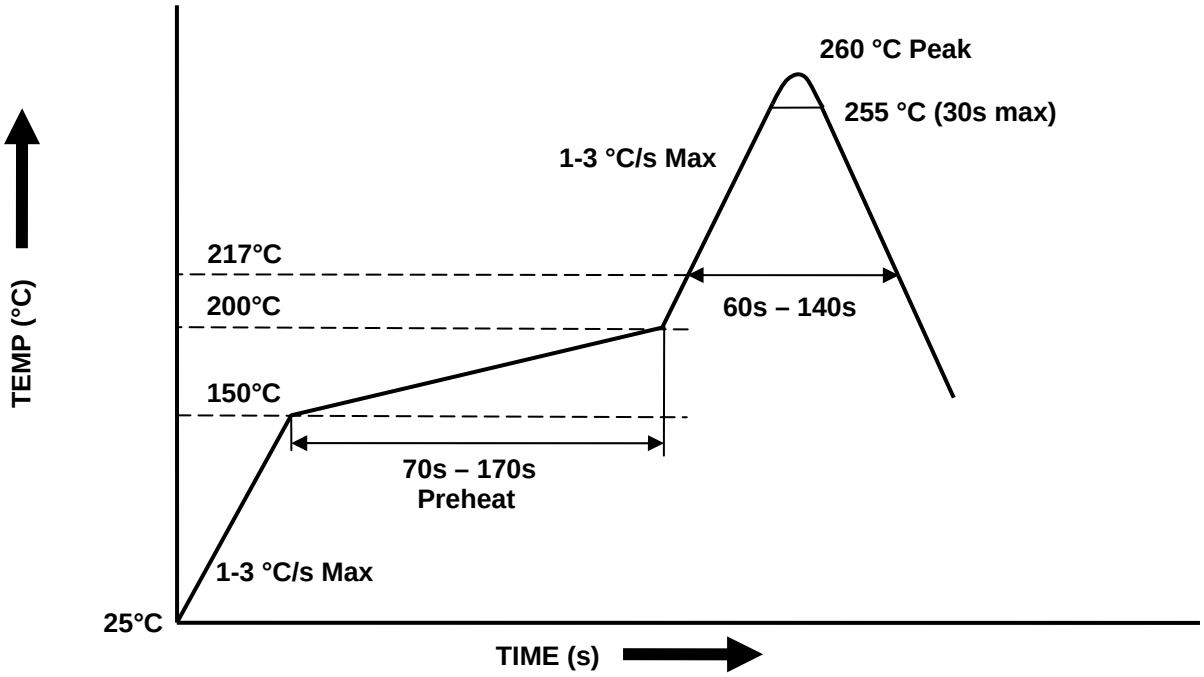
PACKAGE DIMENSIONS (mm)



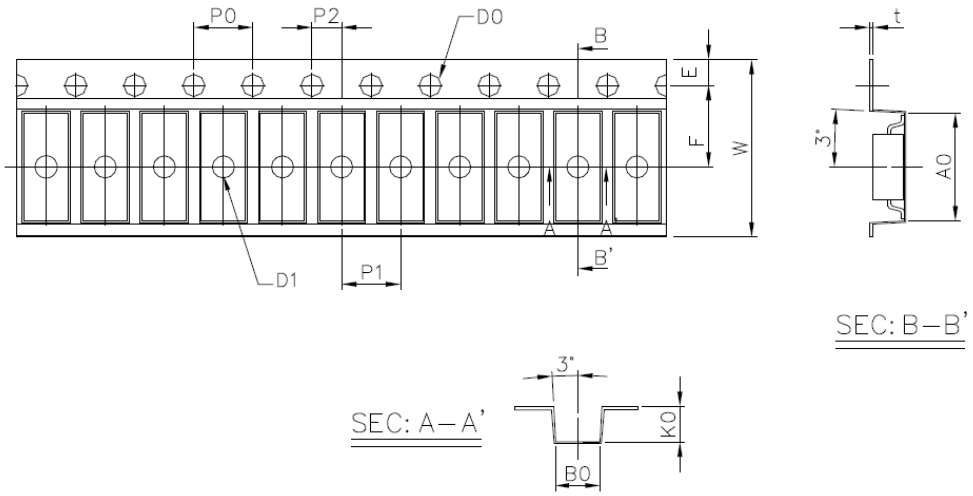
Recommended Solder Pad Layout (mm)



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



Tape and Reel Packaging



Dimension No.	A	B	Do	D1	E	F
Dimension (mm)	3.0 ± 0.1	7.3 ± 0.1	1.5 + 0.1/-0	1.5 ± 0.1	1.7 5± 0.1	5.5 ± 0.1

Dimension No.	Po	P1	P2	t	W	K
Dimension (mm)	4.0 ± 0.15	4.0 ± 0.1	2.0 ± 0.1	0.25 ± 0.03	12.0 ± 0.2	2.4 ± 0.1

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.