

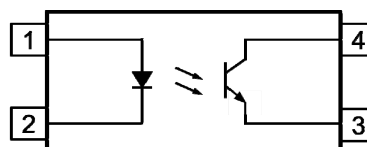
ISLT100xV



DESCRIPTION

The ISLT100xV series optocouplers consists of an infrared emitting diode optically coupled to an NPN silicon photo transistor.

These devices belong to Isocom Long Creepage Range of Optocouplers.



1 Anode
2 Cathode
3 Emitter
4 Collector

FEATURES

- Long Creepage 8mm
- High AC Isolation voltage 5000V_{RMS}
- CTR Selections Available
- Wide Operating Temperature Range -55°C to 110°C
- Pb Free and RoHS Compliant
- UL Approval E91231
- VDE Approval 40042752

APPLICATIONS

- Switching Mode Power Supply
- System Appliances
- Measuring Instruments
- Telecommunication Equipments
- Signal Transmission between Systems of Different Potentials and Impedances

ORDER INFORMATION

- Available in Tape and Reel with 3000pcs per reel

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

Stresses exceeding the absolute maximum ratings can cause permanent damage to the device. Exposure to absolute maximum ratings for long periods of time can adversely affect reliability.

Input

Forward Current	60mA
Peak Forward Current (1μs, pulse)	1.5A
Reverse Voltage	6V
Power dissipation	100mW

Output

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

Total Package

Isolation Voltage	5000V _{RMS}
Total Power Dissipation	250mW
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 1PE, 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

ISLT100xV

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

INPUT

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward Voltage	V_F	$I_F = 50\text{mA}$		1.45	1.5	V
Reverse Current	I_R	$V_R = 6\text{V}$			10	μA
Input Capacitance	C_{IN}	$V_F = 0\text{V}, f = 1\text{kHz}$		50		pF

OUTPUT

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = 0.1\text{mA}, I_F = 0\text{mA}$	80			V
Emitter-Collector Breakdown Voltage	BV_{ECO}	$I_E = 0.1\text{mA}, I_F = 0\text{mA}$	7			V
Collector-Emitter Dark Current	I_{CEO}	$V_{CE} = 20\text{V}, I_F = 0\text{mA}$			100	nA



ISLT100xV

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

COUPLED

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit	
Current Transfer Ratio	CTR	$I_F = 5\text{mA}, V_{CE} = 5\text{V}$				%	
		ISLT1001V	50		600		
		ISLT1007V	80		160		
		ISLT1008V	130		260		
		ISLT1009V	200		400		
		$I_F = 10\text{mA}, V_{CE} = 5\text{V}$					
		ISLT1002V	63		125		
		ISLT1003V	100		200		
		ISLT1004V	160		320		
		$I_F = 1\text{mA}, V_{CE} = 5\text{V}$					
		ISLT1002V	22				
		ISLT1003V	34				
ISLT1004V	56						
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_F = 10\text{mA}, I_C = 1\text{mA}$			0.3	V	
Floating Capacitance	C_f	$V_F = 0\text{V}, f = 1\text{MHz}$			1.0	pF	
Turn On Time	t_{on}	$V_{CE} = 2\text{V}, I_c = 5\text{mA}, R_L = 100\Omega$		4		μs	
Turn Off Time	t_{off}			3		μs	
Output Rise Time	t_r				18	μs	
Output Fall Time	t_f				18	μs	

ISOLATION

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Isolation Voltage	V_{ISO}	R.H. = 40% to 60%, $t = 1\text{ min}$ (Note 1)	5000			V_{AC}
Input - Output Isolation Resistance	R_{I-O}	R.H. = 40% to 60% $V_{I-O} = 500\text{VDC}$ (Note 1)	5×10^{10}			Ω

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

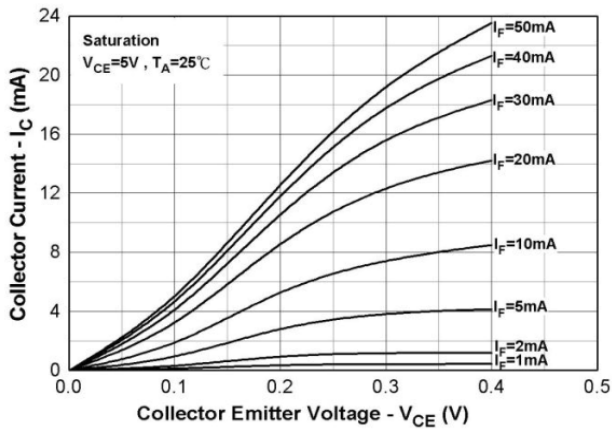


Fig 1 Collector Current vs Collector-Emitter Voltage (1)

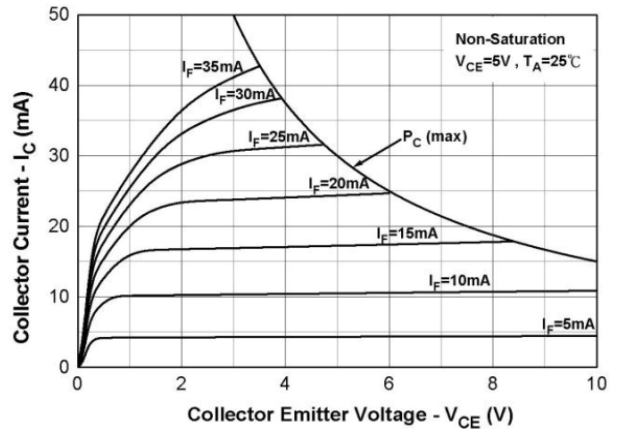


Fig 2 Collector Current vs Collector-Emitter Voltage (2)

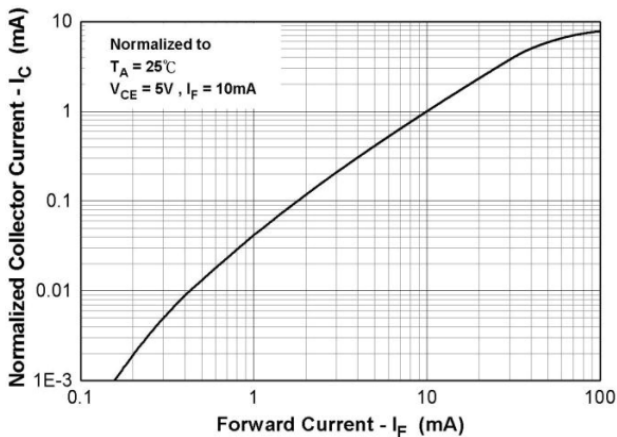


Fig 3 Normalized Collector Current vs Forward Current

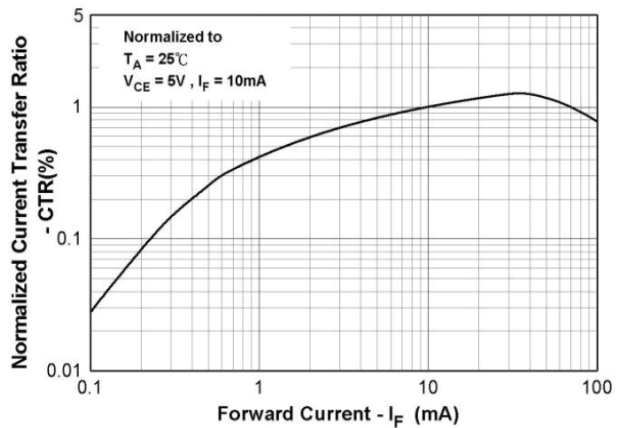


Fig 4 Normalized Current Transfer Ratio vs Forward Current

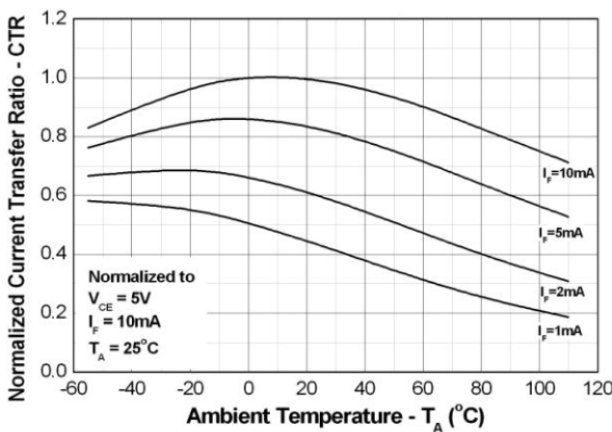


Fig 5 Normalized Current Transfer Ratio vs Ambient Temperature (1)

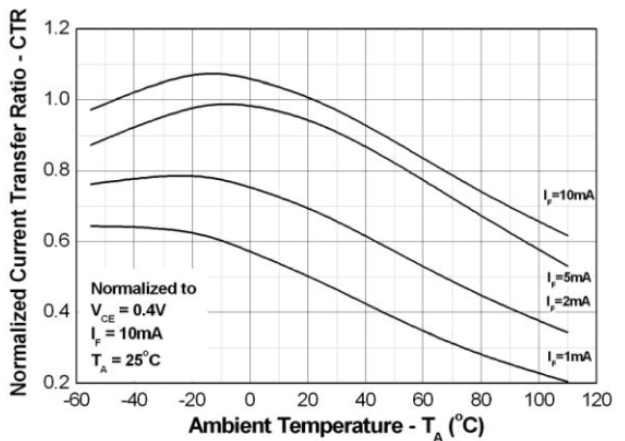


Fig 6 Normalized Current Transfer Ratio vs Ambient Temperature (2)

ISLT100xV

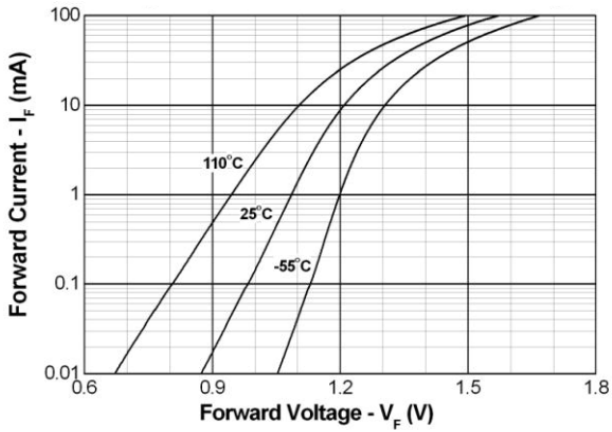


Fig 7 Forward Current vs Forward Voltage

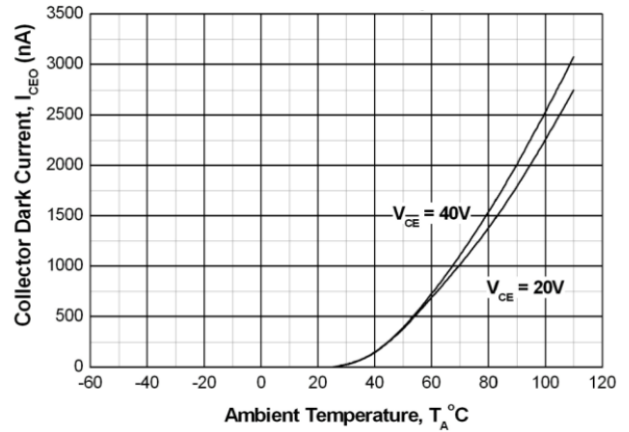


Fig 8 Collector Dark Current vs Ambient Temperature

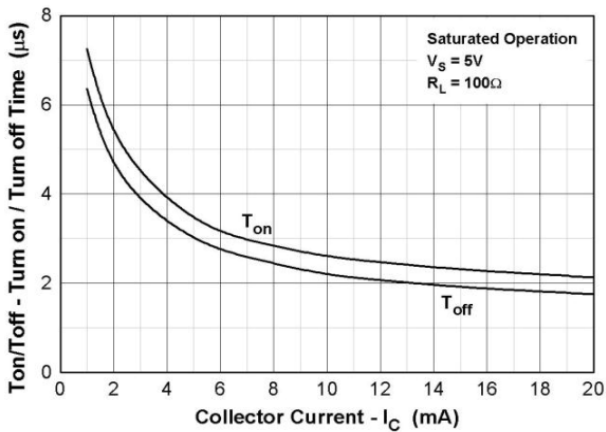


Fig 9 Turn on/off Time vs Collector Current

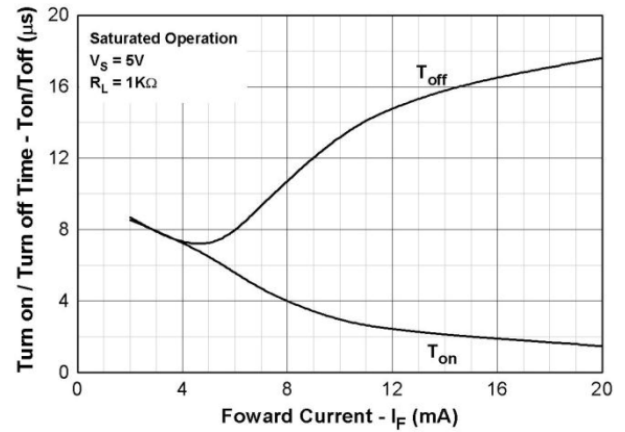
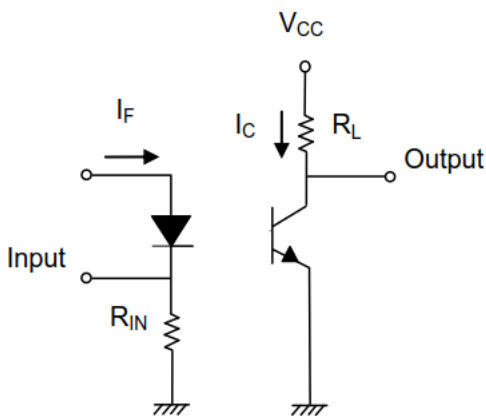


Fig 10 Turn on/off Time vs Forward Current



Switching Time Test Circuit and Waveforms

ISLT100xV

ORDER INFORMATION

ISLT100xV			
After PN	PN	Description	Packing quantity
Any CTR Grade	ISLT1001V, ISLT1002V, ISLT1003V, ISLT1004V, ISLT1007V, ISLT1008V, ISLT1009V	Surface Mount Tape & Reel	3000 pcs per reel

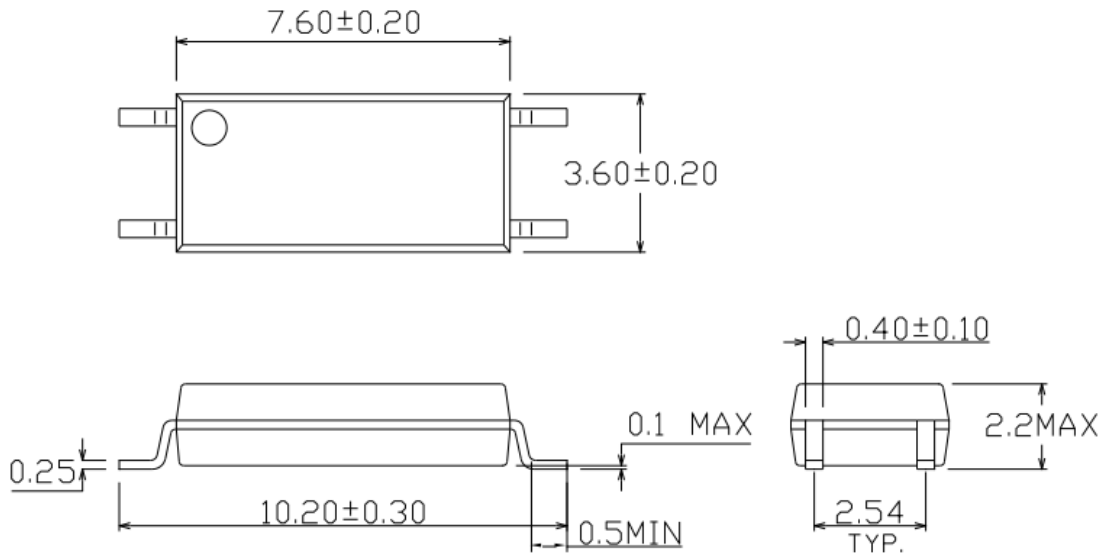
DEVICE MARKING



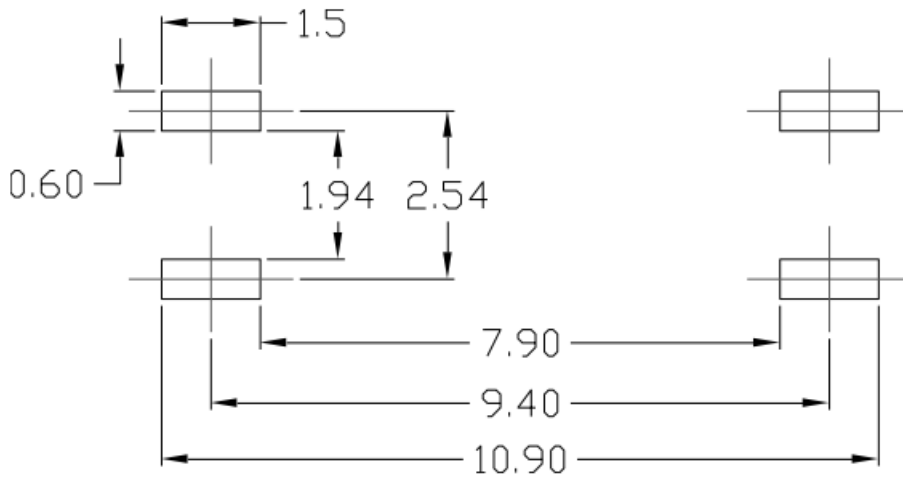
ISLT101_V denotes Device Part Number where “_” denotes the CTR Grade
 I denotes Isocom
 Y denotes 1 digit Year code
 WW denotes 2 digit Week code

ISLT100xV

PACKAGE DIMENSIONS (mm)

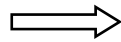
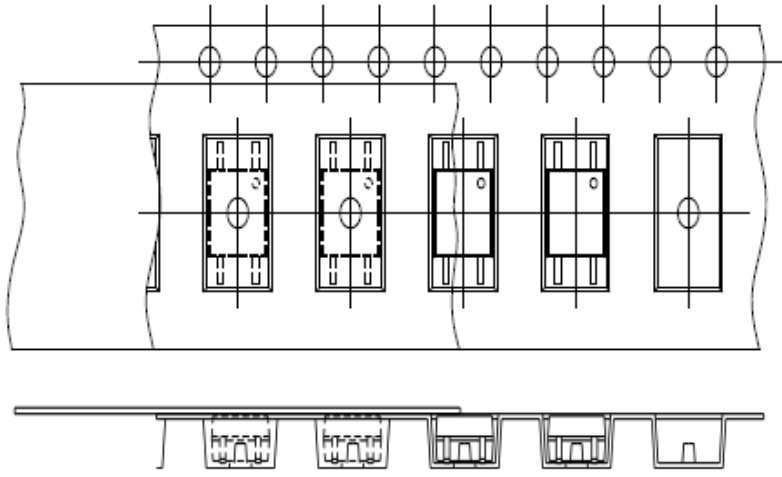


RECOMMENDED SOLDER PAD LAYOUT (mm)

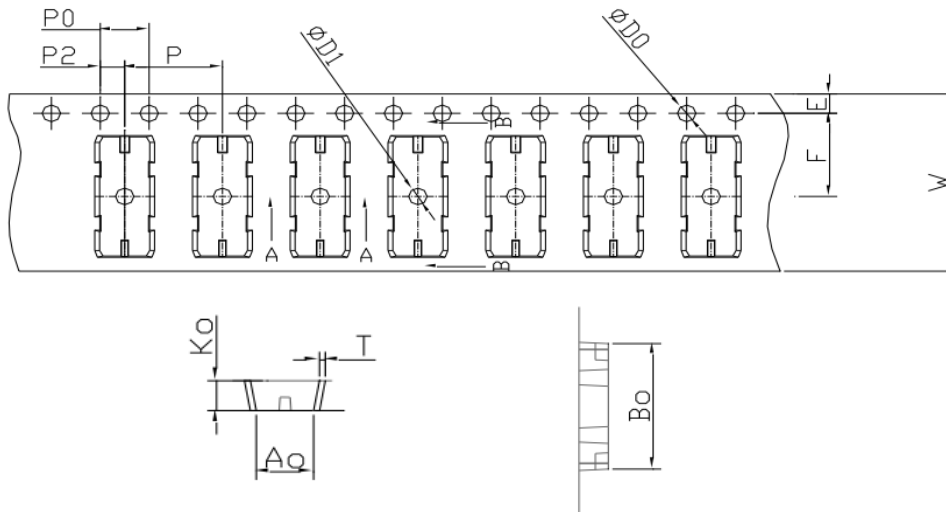


ISLT100xV

TAPE AND REEL PACKAGING



Direction of feed from reel

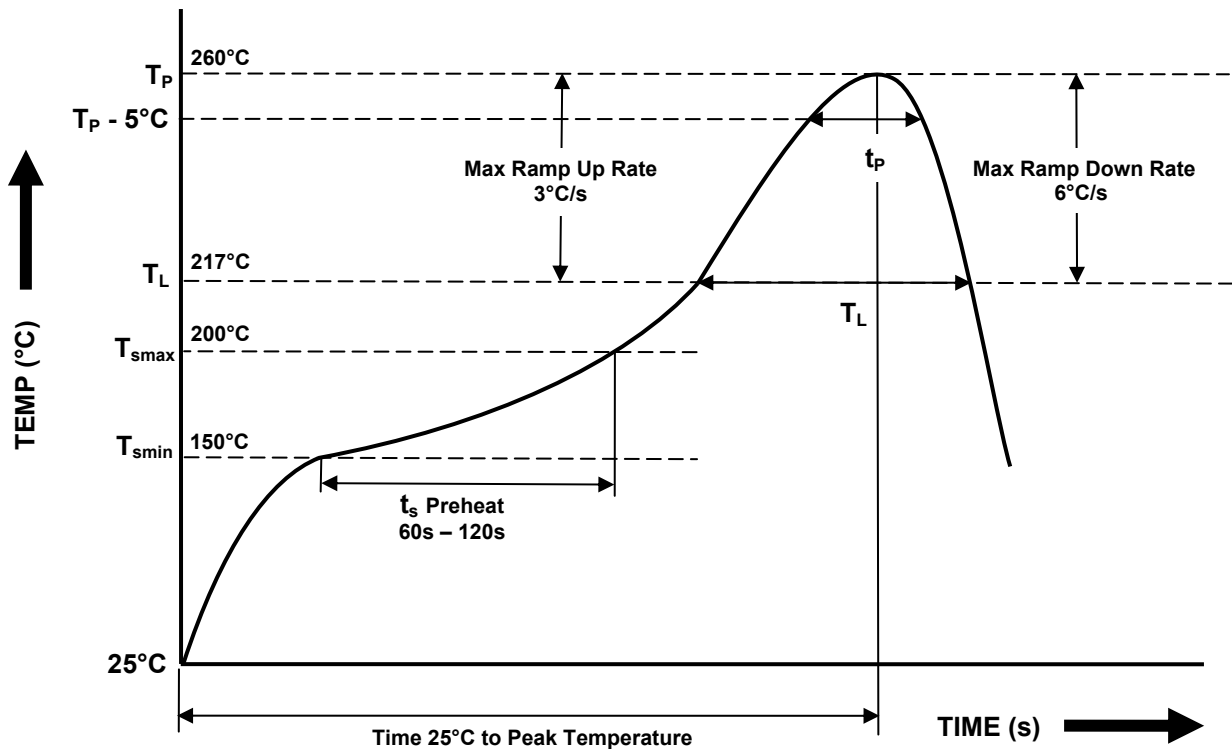


Dimension No.	A₀	B₀	D₀	D₁	E	F
Dimension (mm)	3.9±0.10	10.82±0.10	1.5+0.1/-0	1.5±0.10	1.75±0.10	7.5±0.10
Dimension No.	P₀	P	P₂	T	W	K₀
Dimension (mm)	4.0±0.15	8.0±0.10	2.0±0.10	0.4±0.05	16.0±0.3	2.25±0.1

IR REFLOW SOLDERING TEMPERATURE PROFILE

One Time Reflow Soldering is Recommended.

Do not immerse device body in solder paste.



Profile Details	Conditions
Preheat - Min Temperature (T _{SMIN}) - Max Temperature (T _{SMAX}) - Time T _{SMIN} to T _{SMAX} (t _s)	150°C 200°C 60s - 120s
Soldering Zone - Peak Temperature (T _P) - Liquidous Temperature (T _L) - Time within 5°C of Actual Peak Temperature (T _P - 5°C) - Time maintained above T _L (t _L) - Ramp Up Rate (T _L to T _P) - Ramp Down Rate (T _P to T _L)	260°C 217°C 30s 60s - 100s 3°C/s max 6°C/s max
Average Ramp Up Rate (T _{smax} to T _P)	3°C/s max
Time 25°C to Peak Temperature	8 minutes max



DISCLAIMER

Isocom Components is continually working to improve the quality and reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing Isocom Components products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such Isocom Components products could cause loss of human life, bodily injury or damage to property.

In developing your designs, please ensure that Isocom Components products are used within specified operating ranges as set forth in the most recent Isocom Components products specifications.

The Isocom Components products listed in this document are intended for usage in general electronics applications (computer, personal equipment, office equipment, measuring equipment, industrial robotics, domestic appliances, etc.). These Isocom Components products are neither intended nor warranted for usage in equipment that requires extraordinarily high quality and/or reliability or a malfunction or failure of which may cause loss of human life or bodily injury ("Unintended Usage"). Unintended Usage include atomic energy control instruments, airplane or spaceship instruments, transportation Instruments, traffic signal instruments, combustion control instruments, medical Instruments, all types of safety devices, etc... Unintended Usage of Isocom Components products listed in this document shall be made at the customer's own risk.

Gallium arsenide (GaAs) is a substance used in the products described in this document. GaAs dust and fumes are toxic. Do not break, cut or pulverize the product, or use chemicals to dissolve them. When disposing of the products, follow the appropriate regulations. Do not dispose of the products with other industrial waste or with domestic garbage.

The products described in this document are subject to the foreign exchange and foreign trade laws.

The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by Isocom Components for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of Isocom Components or others.

The information contained herein is subject to change without notice.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Transistor Output Optocouplers](#) category:

Click to view products by [Isocom](#) manufacturer:

Other Similar products are found below :

[LTV-814S-TA](#) [LTV-852S](#) [66095-001](#) [PS2561-1-A](#) [PS2561A-1-W-A](#) [PS2561L1-1-A](#) [PS2561L-1-V-A](#) [PS2706-1-A](#) [PS2815-1-A](#) [MRF658](#)
[ILD2-X006](#) [ILQ615-3X016](#) [LDA102S](#) [SFH615A-4XSM TR](#) [PS2561DL-1Y-F3-A](#) [PS2561L1-1-L-A](#) [PS2562-1-V-A](#) [PS2565L-1-A](#)
[PS2581L2-A](#) [PS2701A-1-F3-P-A](#) [PS2711-1-A](#) [PS2801-1-F3-P-A](#) [PS2833-4-A](#) [PS2841-4A-AX](#) [LTV-702FS](#) [LTV-702V](#) [LTV-702VB](#) [LTV-](#)
[816S-TA](#) [LTV-825S](#) [TCET2100](#) [TLP290-4\(E\(T](#) [IL215AT](#) [WPPC-A11066AA](#) [WPPC-A11066AD](#) [WPPC-A11084ASS](#) [WPPC-A21068AA](#)
[WPPC-D11066AA](#) [WPPC-D21068ED](#) [WPPC-D410616EA](#) [WPPC-D410616ED](#) [X4IAC24A](#) [4N26-X001](#) [EL1010\(TA\)-VG](#) [SFH600-2X007](#)
[TCMT1118](#) [VO206AT](#) [WPPC-D21068EA](#) [WPPC-D11064AD](#) [WPPC-A410616AD](#) [WPPC-A21068AD](#)