

ISP624-1, ISP624-2, ISP624-4 Series



DESCRIPTION

The ISP624-1 , ISP624-2 , ISP624-4 series of optically coupled isolators consist of infrared light emitting diodes and NPN silicon photo transistors in space efficient dual in line plastic packages.

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.

FEATURES

- High Current Transfer Ratio (50% min)
- High Isolation Voltag (5.3kVRMS ,7.5kVPK)
- High BVCEO (55Vmin)
- All electrical parameters 100% tested
- Low Input Current 0.5mA IF
- VDE Approval Certificate No. 40028086

Input

Forward Current	50mA
Reverse Voltage	5V
Power dissipation	70mW

Output

Collector to Emitter Voltage BV _{CEO}	55V
Emitter to Collector Voltage BV _{ECO}	6V
Power Dissipation	150mW

APPLICATIONS

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ORDER INFORMATION

- Add X after PN for VDE Approval
- Add G after PN for 10mm lead spacing
- Add SM after PN for Surface Mount
- Add SMT&R after PN for Surface Mount Tape & Reel

Total Package

Total Power Dissipation	200mW
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 125°C
Lead Soldering Temperature (10s)	260°C

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ISP624-1, ISP624-2, ISP624-4 Series

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

INPUT

Parameter	Symbol	Test Condition	Min	Typ.*	Max	Unit
Forward Voltage	V_F	$I_F = 10\text{mA}$	1.0	1.15	1.3	V
Reverse Voltage	V_R	$I_R = 10\text{mA}$	5			V
Reverse Current	I_R	$V_R = 5\text{V}$			10	μA

OUTPUT

Parameter	Symbol	Test Condition	Min	Typ.*	Max	Unit
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = 0.5\text{mA}$	55			V
Emitter-Collector Breakdown Voltage	BV_{ECO}	$I_E = 100\mu\text{A}$	6			V
Collector-Emitter Dark Current	I_{CEO}	$V_{CE} = 24\text{V}$			100	nA

COUPLED

Parameter	Symbol	Test Condition	Min	Typ.*	Max	Unit
Current Transfer Ratio ISP624-1,ISP624-2,ISP624-4	CTR	$1\text{mA}, I_F 0.5\text{V } V_{CE}$ $0.5\text{mA}, I_F 1.5\text{V } V_{CE}$	100 50		1200	%
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_F = 1\text{mA}, I_F = 0.5\text{mA } I_C$ $I_F = 1\text{mA}, I_F = 1\text{mA } I_C$		0.2	0.4	V
Input-output Isolation Resistance	R_{ISO}	$V_{I0} = 500\text{V}$	5×10^{10}			Ω
Rise Time	t_r	$V_{I0} = 500\text{V}$ $V_{CC} = 10\text{V}$ $I_C = 2\text{mA}, R_L = 100\Omega$		8		μs
Fall Time	t_f			8		μs
Turn-on Time	t_{ON}			10		μs
Turn off Time	t_{OFF}			8		μs

ISP624-1, ISP624-2, ISP624-4 Series

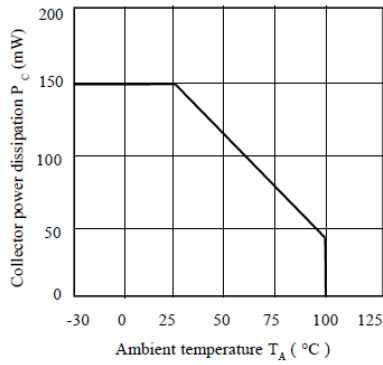


Fig 1 Collector Power Dissipation vs Ambient Temperature

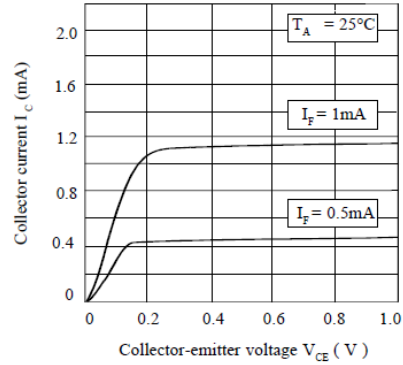


Fig 2 Collector Current vs Low Collector-emitter Voltage

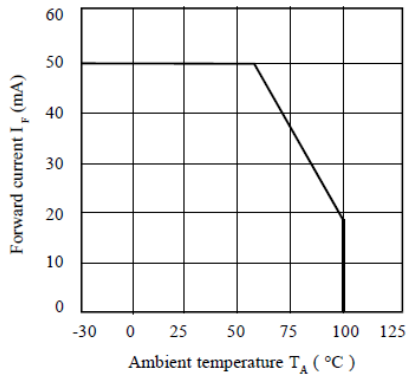


Fig 3 Forward Current vs Ambient Temperature

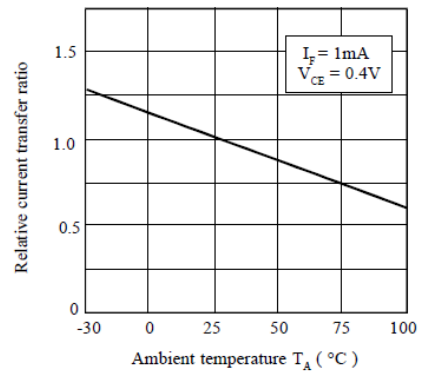


Fig 4 Relative Current Transfer Ratio vs Ambient Temperature

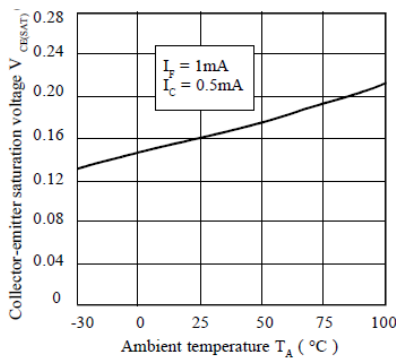


Fig 5 Collector-Emitter Saturation Voltage vs Ambient Temperature

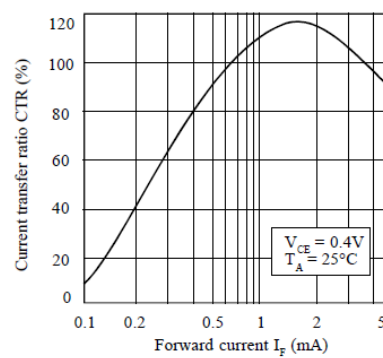


Fig 6 Relative Current Transfer Ratio vs Forward Current

ISP624-1, ISP624-2, ISP624-4 Series

Order Information

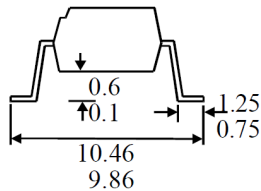
ISP624 (UL Approved)			
After PN	Part Number	Description	Packing Quantity
None	ISP624-1, ISP624-2, ISP624-4	Standard DIP4	100 pcs per tube
G	ISP624-1G, ISP624-2G, ISP624-4G	10mm Lead Spacing	100 pcs per tube
SM	ISP624-1SM, ISP624-2SM, ISP624-4SM	Surface Mount	100 pcs per tube
SMT&R	ISP624-1SMT&R, ISP624-2SMT&R, ISP624-4SMT&R	Surface Mount Tape & Reel	1000 pcs per tube

ISP624 (UL and VDE Approved)			
After PN	Part Number	Description	Packing Quantity
None	ISP624-1X, ISP624-2X, ISP624-4X	Standard DIP4	100 pcs per tube
G	ISP624-1XG, ISP624-2XG, ISP624-4XG	10mm Lead Spacing	100 pcs per tube
SM	ISP624-1XSM, ISP624-2XSM, ISP624-4XSM	Surface Mount	100 pcs per tube
SMT&R	ISP624-1XSMT&R, ISP624-2XSMT&R, ISP624-4XSMT&R	Surface Mount Tape & Reel	1000 pcs per tube

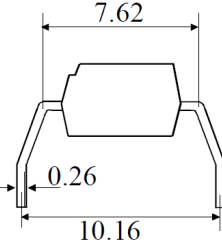
ISP624-1, ISP624-2, ISP624-4 Series

DIMENSIONS (mm)

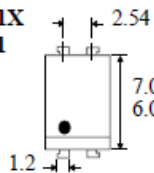
OPTION SM SURFACE MOUNT



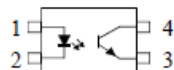
OPTION G



ISP624-1X ISP624-1



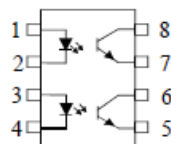
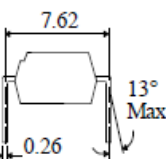
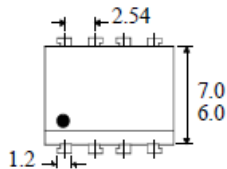
Dimensions in mm



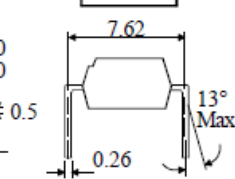
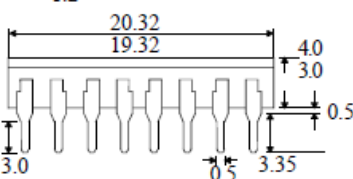
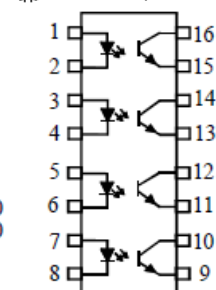
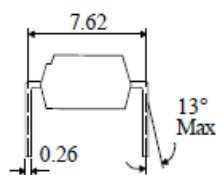
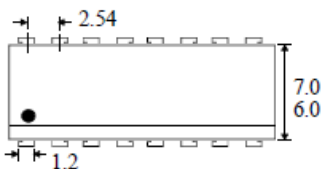
DEVICE MARKING

- I Isocom
- YY Year code
- WW 2 digit Week code

ISP624-2X ISP624-2



ISP624-4X ISP624-4





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