

IS650A IS651A MATCHED EMITTER DETECTOR PAIR PHOTO TRANSISTOR OUTPUT

ISOCOM[®] LTD

| PACKAGES | CIRCUIT |
|----------|---------------------------------------|
| | <p>IS650A IS651A</p> |

DESCRIPTION

The IS650A (Gallium Arsenide Infrared Emitting Diode) and the IS651A (NPN Silicon Photo Transistor) are matched Emitter Detector Pair mounted in clear plastic lateral side looking packages which enables these devices to display superior mechanical resolution, coupled characteristics and reliability in a low cost housing.

Isocom Ltd supplies a multitude of plastic optocouplers for all applications varying from standard transistor optos through to Darlington and Schmitt Trigger devices. It's massive family of optos vary in speed allowing maximum opportunity to engineers worldwide.

All devices are performance guaranteed between -20°C and +80°C and have completed rigorous testing. The Company's customers can be assured of our commitment to stringent quality, reliability and inspection standards, as demonstrated by our existing approvals. Other customer specific options can also be offered.

FEATURES

- Lateral Side Looking Clear Plastic
- High Current transfer ratio

Isocom Ltd reserves the right to change the details on this specification without notice. Please consult Isocom Ltd prior to use. Isocom Ltd cannot accept liability for any errors or omissions.

For sales enquiries, or further information, please contact our sales office at:

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Or go to the Isocom Website @: [Http://www.isocom.uk.com](http://www.isocom.uk.com)

ABSOLUTE MAXIMUM RATINGS

| | |
|----------------------------|-------------------------------|
| Storage Temperature | -55°C to +150°C |
| Operating Temperature | -55°C to +100°C |
| Lead Soldering Temperature | 260°C 1.6mm from case for 10S |

Infrared Emitting Diode

| | | |
|----------------------|-------|--|
| Forward DC Current | 50mA | |
| Reverse DC Voltage | 5V | |
| Peak forward Current | 3.0A | 1µS p.w. 300 pps |
| Power Dissipation | 100mW | Derate linearly above 25°C at 1.33mW/°C. |

Output Photo Darlington Transistor

| | | |
|---------------------------|------|-------------------|
| Collector-Emitter Voltage | 30V | BV _{CEO} |
| Emitter-collector voltage | 5V | BV _{ECO} |
| Power Dissipation | 75mW | |

ELECTRICAL CHARACTERISTICS

T_A = 25°C U.O.S. (each channel where appropriate).

Input Diode Electrical Characteristics

| Parameter | Symbol | Test Conditions | Device | Min | Typ | Max | Units |
|---------------------------|----------------|-----------------------|--------|-----|-----|-----|-------|
| Forward Voltage | V _F | I _F = 10mA | | 1.0 | | 1.3 | V |
| Reverse Current | I _R | V _R = 5.0V | | | | 10 | µA |
| Reverse Breakdown Voltage | V _R | I _R = 10µA | | 5.0 | | | V |

Output Detector Electrical Characteristics

| | | | | | | | |
|--------------------------------|-------------------|--|--|----|--|-----|----|
| Collector-emitter Voltage | BV _{CEO} | I _C = 1mA | | 30 | | | V |
| Emitter-collector Voltage | BV _{ECO} | I _E = 100µA | | 5 | | | V |
| Collector-emitter Dark Current | I _{CEO} | V _{CE} = 10V, E _c = 0* | | | | 100 | nA |

Coupled Electrical Characteristics

| | | | | | | | |
|--|----------------------|---|--|-----|-----|-----|----|
| Collector-Emitter Saturation Voltage | V _{CE(Sat)} | I _F = 20mA, I _C = 1.0mA | | | | 0.4 | V |
| On-State Collector Current (Distance from Tip of Lens to Tip of Lens is 0.125" (3.18mm)) | I _{C(ON)} | I _F = 20mA, V _{CE} = 10V | | 1.0 | | | mA |
| Output Rise Time | T _R | V _{CC} = 5V, I _C = 1mA, R _L = 100Ω | | | 6.0 | | µS |
| Output Fall Time | T _F | | | | 6.0 | | µS |

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