MOC8020, MOC8021

NON BASE LEAD OPTICALLY COUPLED ISOLATOR PHOTODARLINGTON OUTPUT

APPROVALS

- UL recognised, File No. E91231

'X' SPECIFICATION APPROVALS

- VDE 0884 in 3 available lead form : -
  - STD
  - G form
  - SMD approved to CECC 00802

DESCRIPTION

The MOC8020, MOC8021 series of optically coupled isolators consist of an infrared light emitting diode and NPN silicon photodarlington in a standard 6pin dual in line plastic package with the base pin unconnected.

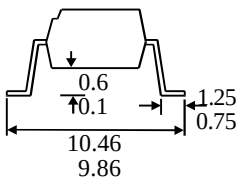
FEATURES

- Options :-
  10mm lead spread - add G after part no.
  Surface mount - add SM after part no.
  Tape&reel - add SMT&R after part no.
- High Current Transfer Ratio (500% min)
- BVceo 35V
- High Isolation Voltage ($5.3kV_{RMS}$, $7.5kV_{PK}$)
- Base pin unconnected for improved noise immunity in high EMI environment
- High sensitivity to low input drive current
- Custom electrical selections available

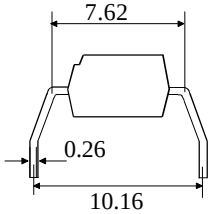
APPLICATIONS

- Computer terminals
- Industrial systems controllers
- Measuring instruments
- Signal transmission between systems of different potentials and impedances

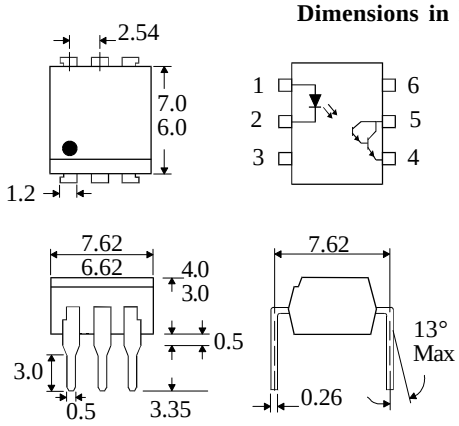
OPTION SM
SURFACE MOUNT



OPTION G



Dimensions in mm



ABSOLUTE MAXIMUM RATINGS
(25°C unless otherwise specified)

Storage Temperature	-40°C to + 125°C
Operating Temperature	-25°C to + 100°C
Lead Soldering Temperature (1/16 inch (1.6mm) from case for 10 secs)	260°C

INPUT DIODE

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

OUTPUT TRANSISTOR

Collector-emitter Voltage BV_{CEO}	35V
Emitter-collector Voltage BV_{ECO}	6V
Power Dissipation	150mW

POWER DISSIPATION

Total Power Dissipation	170mW
(derate linearly 3.3mW/°C above 25°C)	

ISOCOM COMPONENTS LTD
Unit 25B, Park View Road West,
Park View Industrial Estate, Brenda Road
Hartlepool, Cleveland, TS25 1YD
Tel: (01429) 863609 Fax :(01429) 863581

ELECTRICAL CHARACTERISTICS (T_A = 25°C Unless otherwise noted)

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)		1.2	1.4	V	I_F = 10mA
	Reverse Current (I_R)			10	µA	V_R = 4V
Output	Collector-emitter Breakdown (BV_{CEO})	35			V	I_C = 0.1mA
	Emitter-collector Breakdown (BV_{ECO})	6			V	I_E = 10µA
	Collector-emitter Dark Current (I_{CEO})			10^{-6}	A	V_{CE} = 10V
Coupled	Output Collector Current (I_C)(Note 2) MOC8020 MOC8021	 50 100			 mA mA	 10mA I_F, 5V V_{CE} 10mA I_F, 5V V_{CE}
	Input to Output Isolation Voltage V_{ISO}	5300 7500			V_{RMS} V_{PK}	(note 1) (note 1)
	Input-output Isolation Resistance R_{ISO}		10^{11}		Ω	V_{IO} = 500V (note 1)
	Response Time (Rise), tr Response Time (Fall), tf		60 53		µs µs	V_{CE} = 2V, I_C = 10mA, R_L = 100Ω, fig.1

Note 1 Measured with input leads shorted together and output leads shorted together.
Note 2 Special Selections are available on request. Please consult the factory.

FIGURE 1

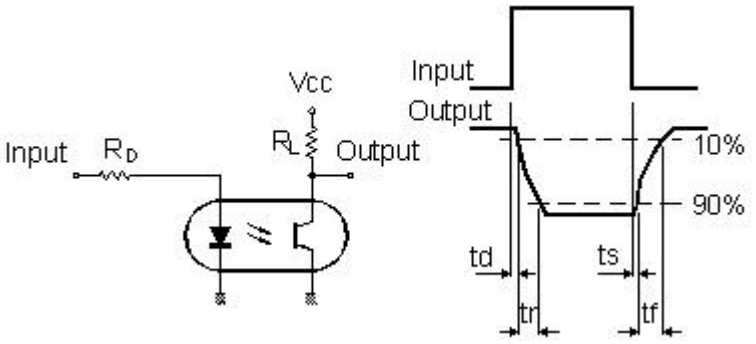


Fig.1 Forward Current vs. Ambient Temperature

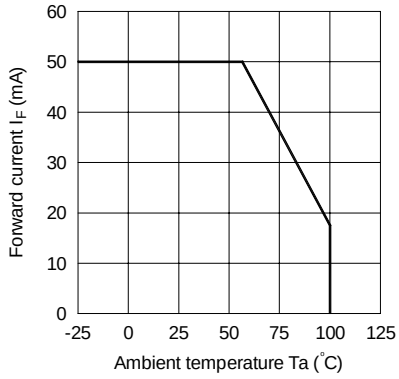


Fig.2 Collector Power Dissipation vs. Ambient Temperature

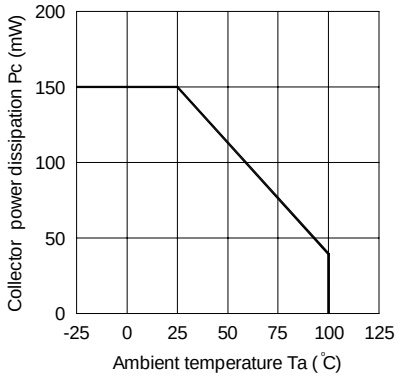


Fig.3 Current Transfer Ratio vs. Forward Current

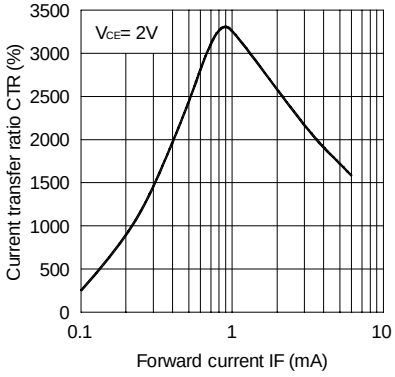


Fig.4 Forward Current vs. Forward Voltage

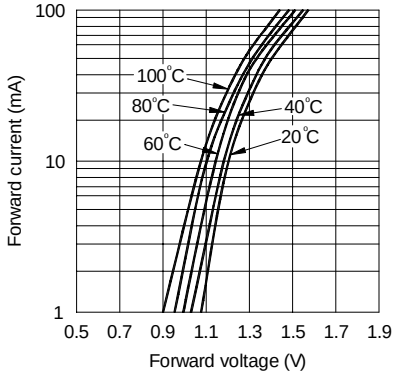


Fig.5 Collector Current vs. Collector-emitter Voltage

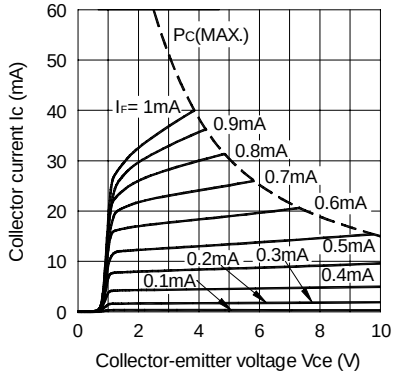


Fig.6 Collector Current vs. Collector-emitter Voltage

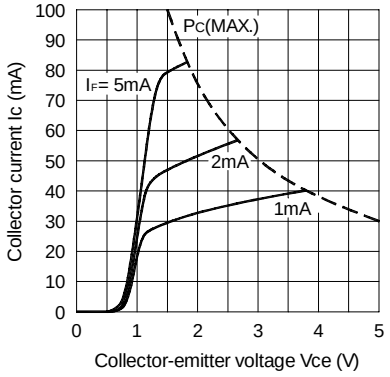


Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

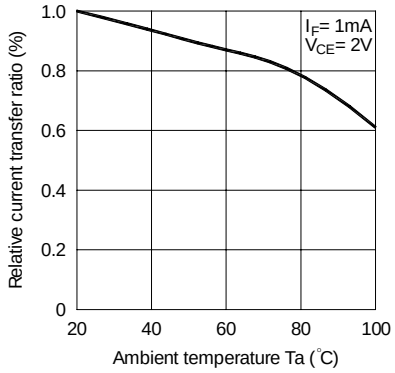


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

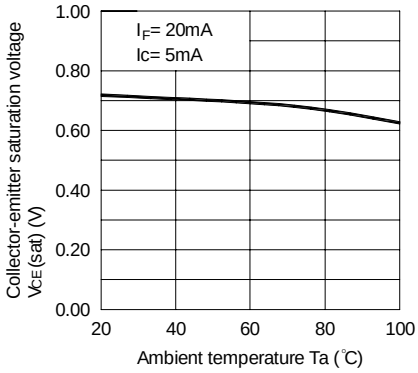


Fig.9 Collector Dark Current vs. Ambient Temperature

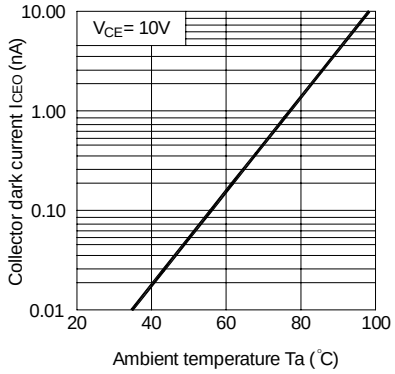


Fig.10 Response Time vs. Load Resistance

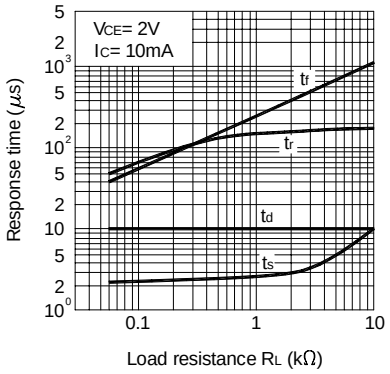
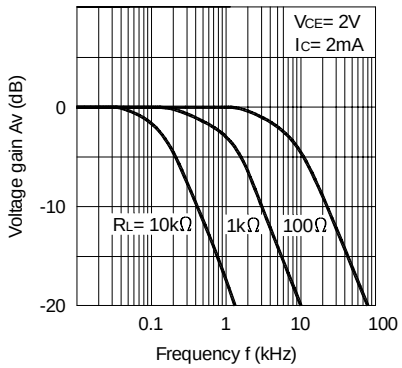
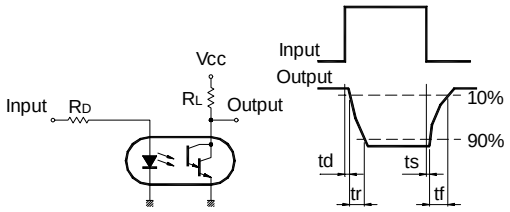


Fig.11 Frequency Response



Test Circuit for Response Time



Test Circuit for Frequency Response

