



**OPTICALLY COUPLED
ISOLATOR
PHOTOTRANSISTOR OUTPUT**

APPROVALS

- UL recognised, File No. E91231

'X' SPECIFICATION APPROVALS

- VDE 0884 approval pending
- EN60950 approval pending

DESCRIPTION

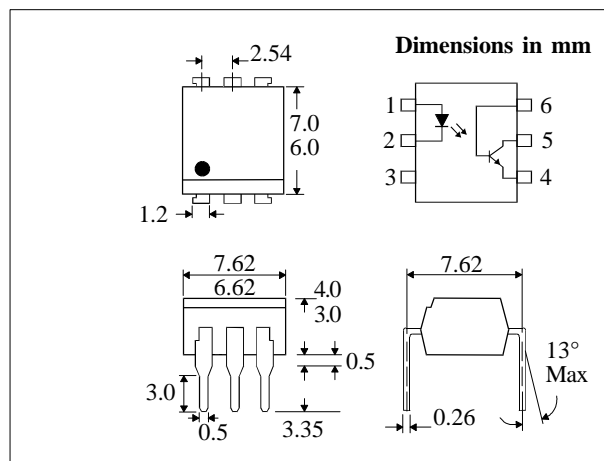
The MOC8100 optically coupled isolator consists of infrared light emitting diode and NPN silicon photo transistor in a standard 6 pin dual in line plastic package.

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 Isolation Voltage (5.3kV_{RMS}, 7.5kV_{PK})
- Low Input Current 1mA I_F
- High Current Transfer Ratio (50% min)
- All electrical parameters 100% tested
- Custom electrical selections available

APPLICATIONS

- DC motor controllers
- Industrial systems controllers
- Measuring instruments
- Signal transmission between systems of different potentials and impedances



**ABSOLUTE MAXIMUM RATINGS
(25°C unless otherwise specified)**

Storage Temperature	-55°C to + 150°C
Operating Temperature	-55°C to + 100°C
Lead Soldering Temperature (1/16 inch (1.6mm) from case for 10 secs)	260°C

INPUT DIODE

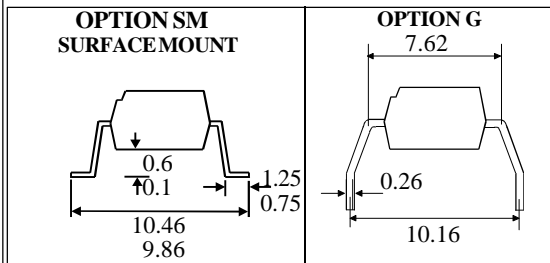
Forward Current	60mA
Reverse Voltage	6V
Power Dissipation	105mW

OUTPUT TRANSISTOR

Collector-emitter Voltage BV _{CEO}	30V
Collector-base Voltage BV _{CBO}	70V
Emitter-base Voltage BV _{EBO}	6V
Power Dissipation	160mW

POWER DISSIPATION

Total Power Dissipation	200mW
(derate linearly 2.67mW/°C above 25°C)	



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

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)		1.2	1.4	V	$I_F = 10\text{mA}$ $I_R = 10\mu\text{A}$ $V_R = 6\text{V}$
	Reverse Voltage (V_R)	6			V	
	Reverse Current (I_R)			10	μA	
Output	Collector-emitter Breakdown (BV_{CEO})	30			V	$I_C = 1\text{mA}$ (note 2) $I_C = 100\mu\text{A}$ $I_E = 100\mu\text{A}$ $V_{CE} = 5\text{V}$ $V_{CE} = 5\text{V}$
	Collector-base Breakdown (BV_{CBO})	70			V	
	Emitter-base Breakdown (BV_{EBO})	6			V	
	Collector-emitter Dark Current (I_{CEO})			25	nA	
	Collector-base Dark Current (I_{CBO})			10	nA	
Coupled	Output Collector Current (I_C)	0.5 0.3			mA mA	$1\text{mA } I_F, 5\text{V } V_{CE}$ $1\text{mA } I_F, 5\text{V } V_{CE}$ ($T_A = 0$ to $+70^\circ\text{C}$) $1\text{mA } I_F, 100\mu\text{A } I_C$ See note 1 See note 1 $V_{IO} = 500\text{V}$ (note 1) $V_{CC} = 10\text{V}, I_C = 2\text{mA}$ $R_L = 100\Omega$, fig 1 $V_{CC} = 10\text{V}, I_C = 2\text{mA}$ $R_L = 100\Omega$, fig 1
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			0.5	V	
	Input to Output Isolation Voltage V_{ISO}	5300 7500			V_{RMS} V_{PK}	
	Input-output Isolation Resistance R_{ISO}	5×10^{10}			Ω	
	Turn-on Time t_{on}			20	μs	
	Turn-off Time t_{off}			20	μs	
	Output Rise Time t_r		4		μs	
Output Fall Time t_f		6		μs		

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.

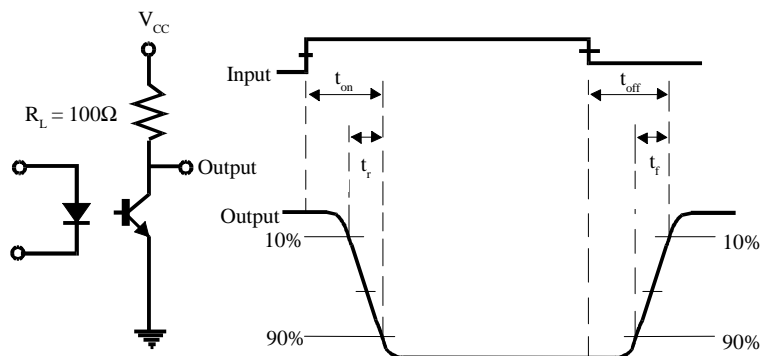
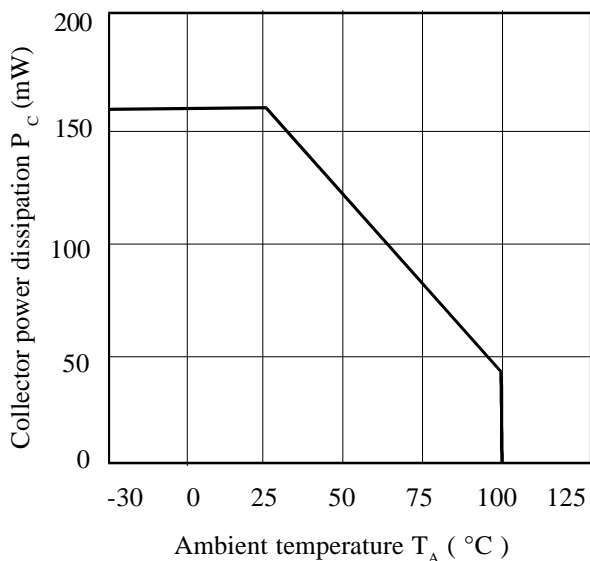
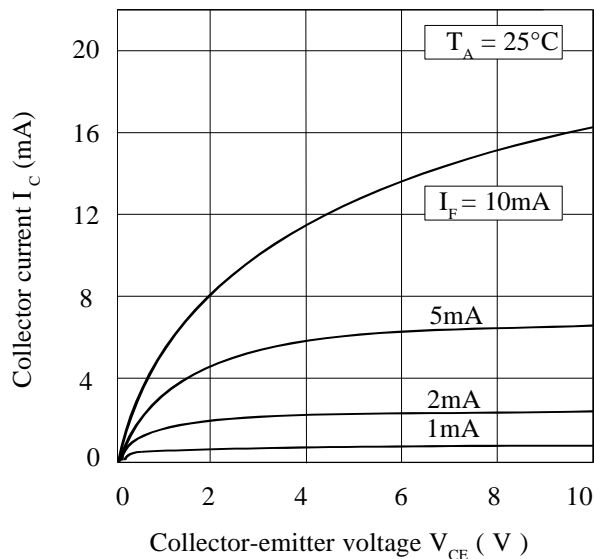


FIG 1

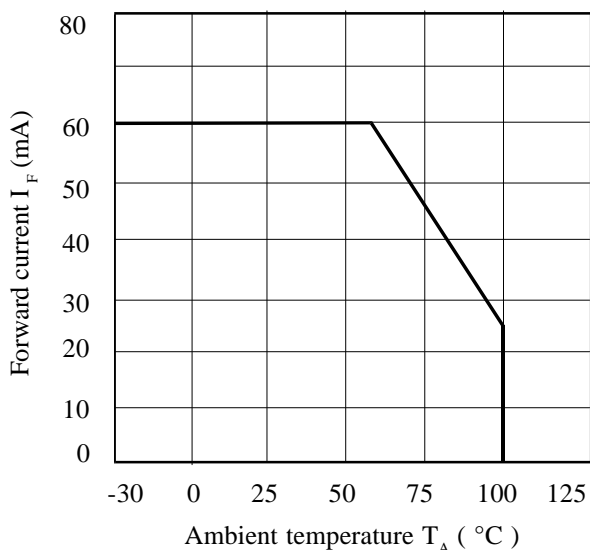
Collector Power Dissipation vs. Ambient Temperature



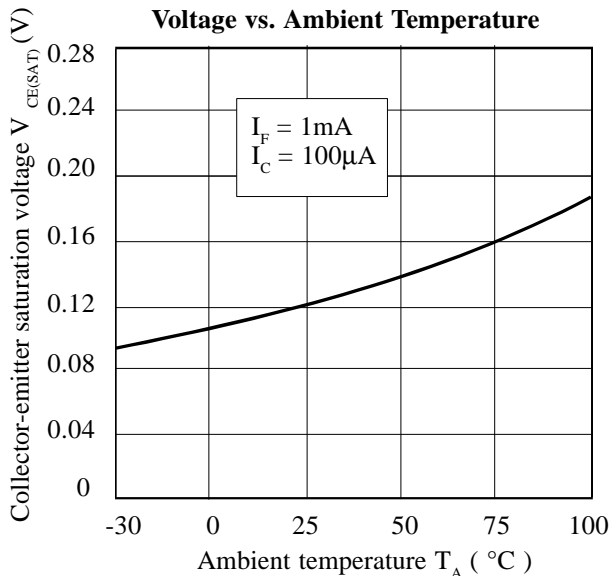
Collector Current vs. Collector-emitter Voltage



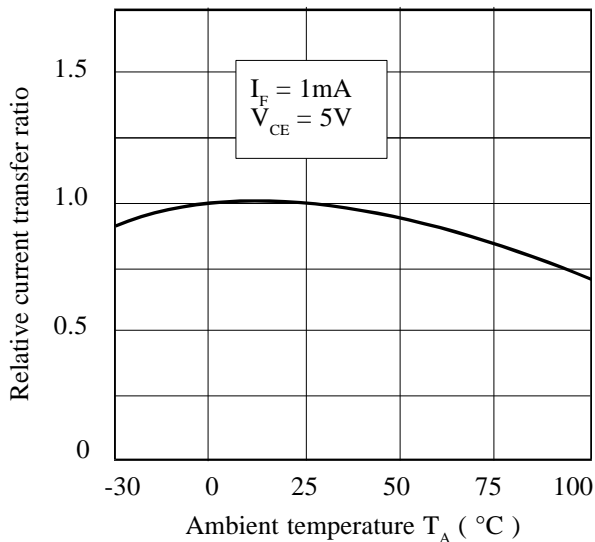
Forward Current vs. Ambient Temperature



Collector-emitter Saturation Voltage vs. Ambient Temperature



Relative Current Transfer Ratio vs. Ambient Temperature



Relative Current Transfer Ratio vs. Forward Current

