

**OPTICALLY COUPLED ISOLATOR
PHOTODARLINGTON OUTPUT**

APPROVALS

- UL recognised, File No. E91231

'X' SPECIFICATION APPROVALS

- VDE 0884 in 2 available lead form :
- STD
- G form
- VDE 0884 in SMD approval pending
- SETI approved, reg. no.151786-18

DESCRIPTION

The MOC8080 is an optically coupled isolator consisting of an infrared light emitting diode and NPN silicon photodarlington in a space efficient dual in line plastic package.

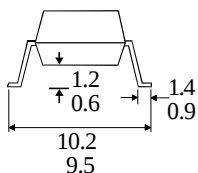
FEATURES

- 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 Current Transfer Ratio
- High BV_{ceo} (55V)
- High Isolation Voltage (5.3kV_{RMS}, 7.5kV_{PK})
- All electrical parameters 100% tested
- Custom electrical selections available

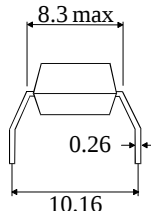
APPLICATIONS

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

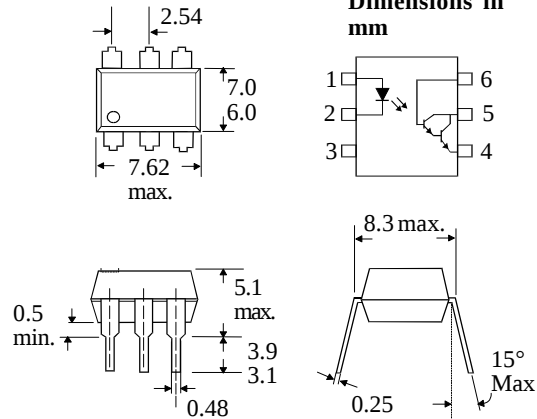
**OPTION SM
SURFACE MOUNT**



OPTION G



**Dimensions in
mm**



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

Storage Temperature _____ -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 _____ 80mA
Reverse Voltage _____ 5V
Power Dissipation _____ 105mW

OUTPUT TRANSISTOR

Collector-emitter Voltage BV_{CEO} _____ 55V
Collector-base Voltage BV_{CBO} _____ 55V
Emitter-collector Voltage BV_{ECO} _____ 5V
Power Dissipation _____ 150mW

POWER DISSIPATION

Total Power Dissipation _____ 250mW
(derate linearly 3.3mW/°C above 25°C)

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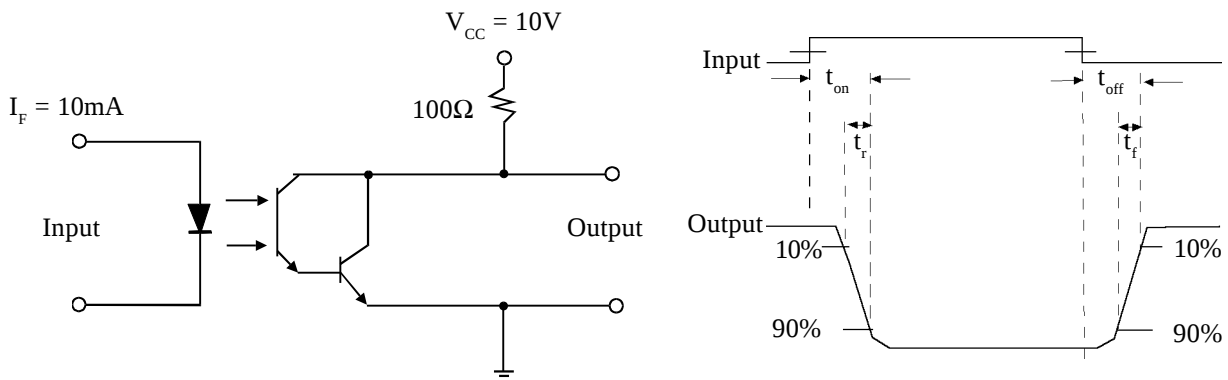
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)		1.2	1.5	V	$I_F = 10\text{mA}$
	Reverse Voltage (V_R)	3			V	$I_R = 10\mu\text{A}$
	Reverse Current (I_R)			10	μA	$V_R = 3\text{V}$
Output	Collector-emitter Breakdown (BV_{CEO})	55			V	$I_C = 1\text{mA}$ (note 2)
	Collector-base Breakdown (BV_{CBO})	55			V	$I_C = 100\mu\text{A}$
	Emitter-collector Breakdown (BV_{ECO})	5			V	$I_E = 100\mu\text{A}$
	H_{FE}		16K			$V_{CE} = 5\text{V}, I_C = 5\text{mA}$
	Collector-emitter Dark Current (I_{CEO})			100	nA	$V_{CE} = 10\text{V}$
	Collector-base Dark Current (I_{CBO})			20	nA	$V_{CB} = 10\text{V}$
Coupled	Output Collector Current (I_C)(Note 2)	50			mA	$10\text{mA } I_F, 5\text{V } V_{CE}$
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			1.0	V	$1\text{mA } I_F, 1\text{mA } I_C$
	Input to Output Isolation Voltage V_{ISO}	5300 7500			V_{RMS} V_{PK}	(note 1) (note 1)
	Input-output Isolation Resistance R_{ISO}	5×10^{10}			Ω	$V_{IO} = 500\text{V}$ (note 1)
	Output Turn on Time t_{on}		3.5		μs	$V_{CC} = 10\text{V}, I_F = 5\text{mA},$ $R_L = 100\Omega$, fig.1
	Output Turn off Time t_{off}		95		μs	
	Output Rise Time t_r		1		μs	
	Output Fall Time t_f		2		μs	

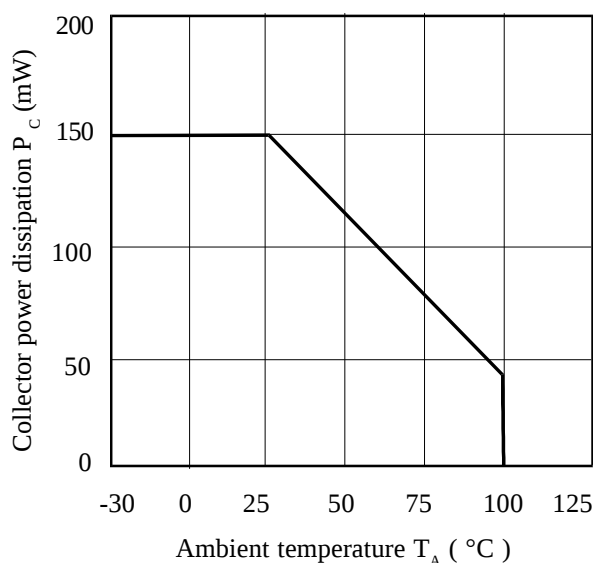
Note 1 Measured with input leads shorted together and output leads shorted together.

Note 2 Special Selections are available on request. Please consult the factory.

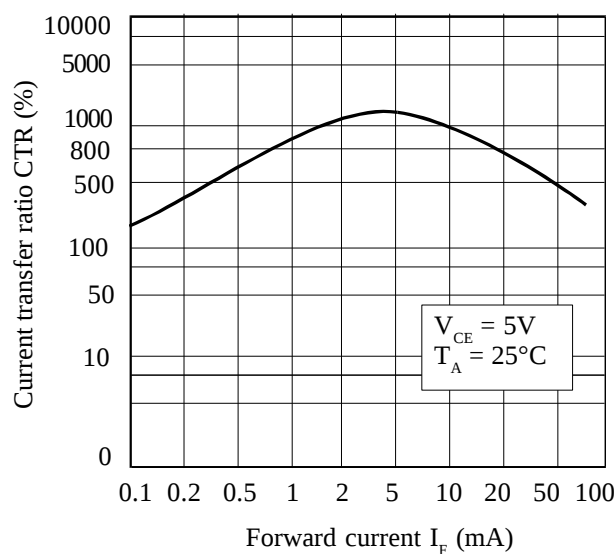
FIGURE 1



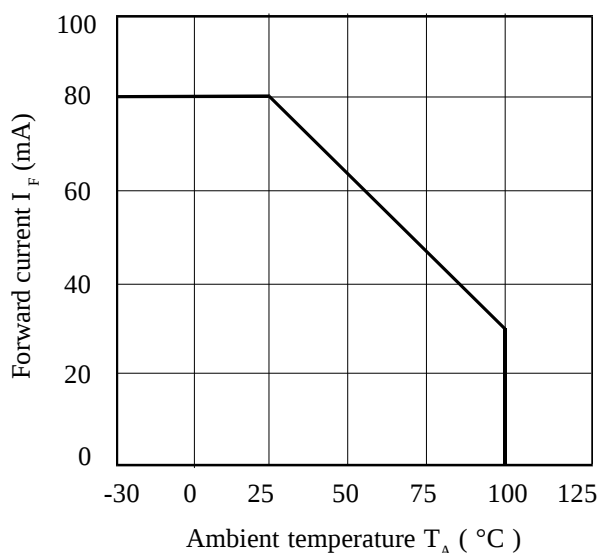
Collector Power Dissipation vs. Ambient Temperature



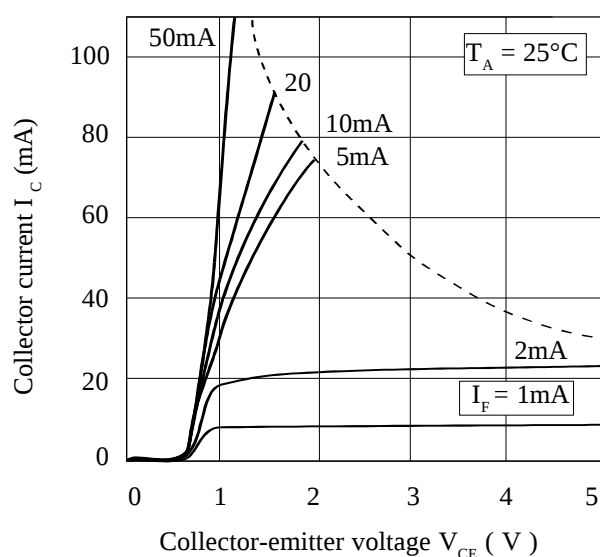
Current Transfer Ratio vs. Forward Current



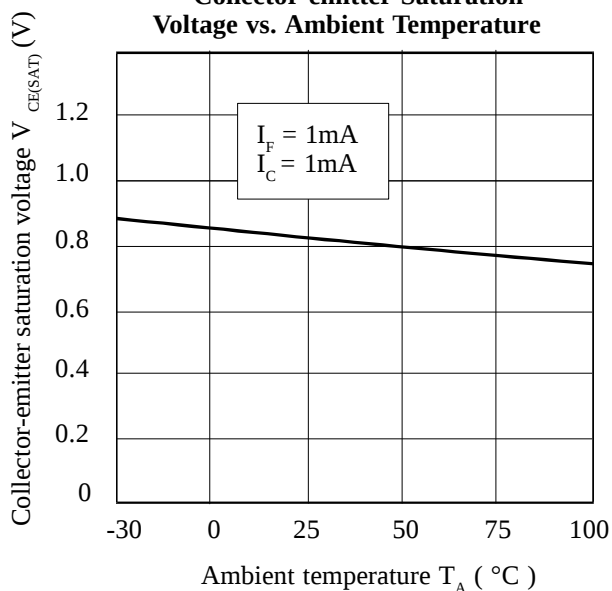
Forward Current vs. Ambient Temperature



Collector Current vs. Collector-emitter Voltage



Collector-emitter Saturation Voltage vs. Ambient Temperature



Normalised Current Transfer Ratio vs. Ambient Temperature

