MOC8106X,MOC8107X,MOC8108X,
MOC8106, MOC8107, MOC8108

NON-BASE LEAD OPTICALLY COUPLED ISOLATOR PHOTOTRANSISTOR OUTPUT

APPROVALS

- UL recognised, File No. E91231

'X' SPECIFICATION APPROVALS

- VDE 0884 in 3 available lead forms : -
  - STD
  - G form
  - SMD approved to CECC 00802
- Certified to EN60950 by the following Test Bodies :-
  Nemko - Certificate No. P96101299
  Fimko - Registration No. 190469-01..22
  Semko - Reference No. 962007601
  Demko - Reference No. 305567

DESCRIPTION

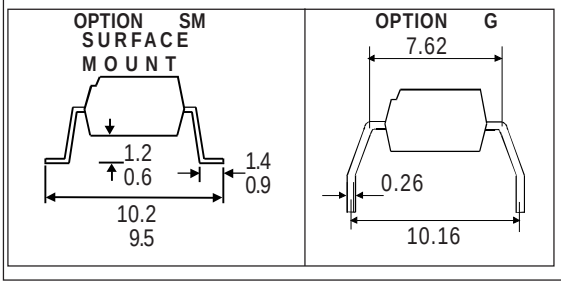
The MOC8106, MOC8107, MOC8108 series of optically coupled isolators consist of infrared light emitting diode and NPN silicon photo transistor in a standard 6 pin dual in line plastic package with the base pin unconnected.

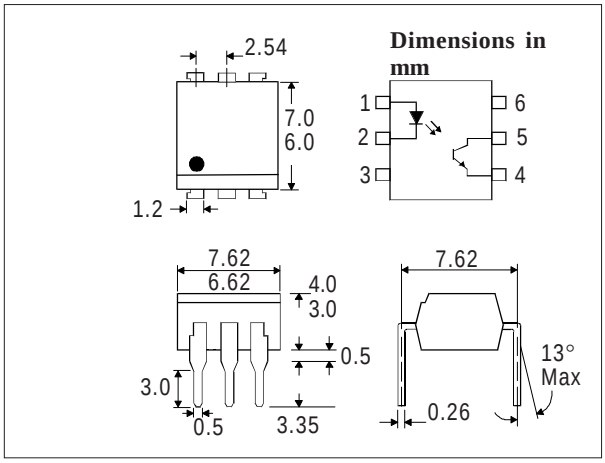
FEATURES

- 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 Isolation Voltage ($5.3kV_{RMS}$, $7.5kV_{PK}$)
- Base pin unconnected for improved noise immunity in high EMI environment

APPLICATIONS

- DC motor controllers
- Industrial systems controllers
- 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	120mW

OUTPUT TRANSISTOR

Collector-emitter Voltage BV_{CEO}	70V
Emitter-collector Voltage BV_{ECO}	7V
Power Dissipation	160mW

POWER DISSIPATION

Total Power Dissipation	200mW
(derate linearly 2.94mW/°C above 25°C)	

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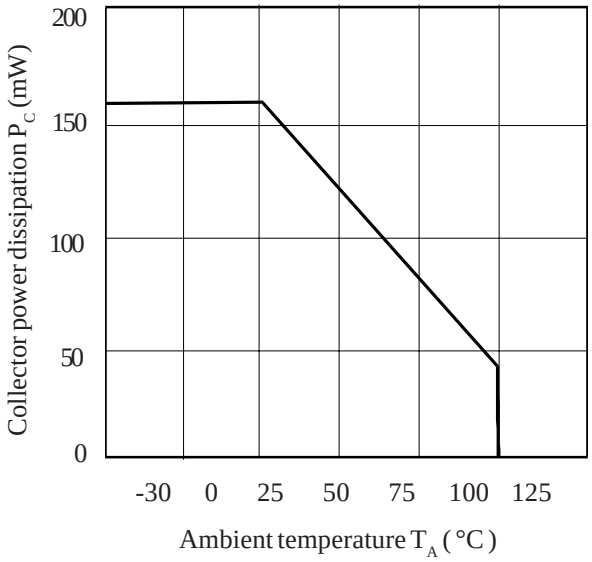
ELECTRICAL CHARACTERISTICS (T_A = 25°C Unless otherwise noted)

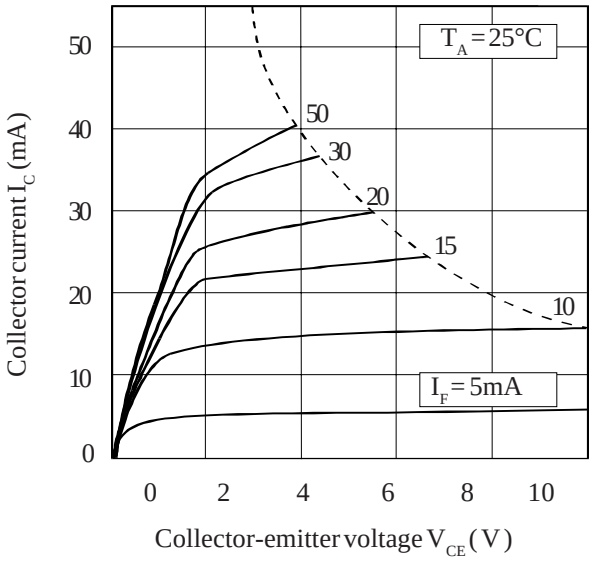
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)	1.0	1.15	1.5	V	I_F = 10mA
	Reverse Voltage (V_R)	6			V	I_R = 10µA
	Reverse Current (I_R)			10	µA	V_R = 6V
Output	Collector-emitter Breakdown (BV_{CEO}) (Note 2)	70			V	I_C = 1mA
	Emitter-collector Breakdown (BV_{ECO})	6			V	I_E = 100µA
	Collector-emitter Dark Current (I_{CEO})		1.0	50	nA	V_{CE} = 10V
Coupled	Output Collector Current I_C (CTR)(2)					
	MOC8106	5.0(50)		15(150)	mA(%)	10mA I_F, 10V V_{CE}
	MOC8107	10(100)		30(300)	mA(%)	10mA I_F, 10V V_{CE}
	MOC8108	25(250)		60(600)	mA(%)	10mA I_F, 10V V_{CE}
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$		0.15	0.4	V	5mA I_F, 0.5mA I_C
	Input to Output Isolation Voltage V_{ISO}	5300			V_{RMS}	See note 1
		7500			V_{PK}	See note 1
	Input-output Isolation Resistance R_{ISO}	$5x10^{10}$			Ω	V_{IO} = 500V (note 1)
	Turn-on Time ton		7.5	20	µs	V_{CC} = 10V,
	Turn-off Time toff		5.7	20	µs	I_C = 2mA, R_L = 100Ω
	Output Rise Time tr		3.2		µs	
	Output Fall Time tf		4.7		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.

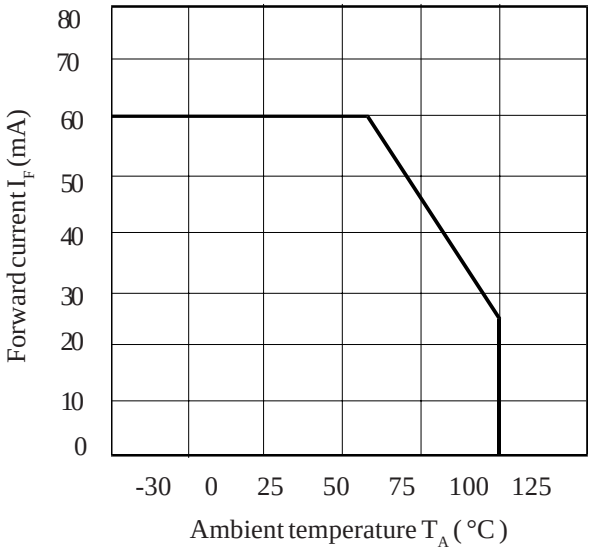
Collector Power Dissipation vs. Ambient Temperature



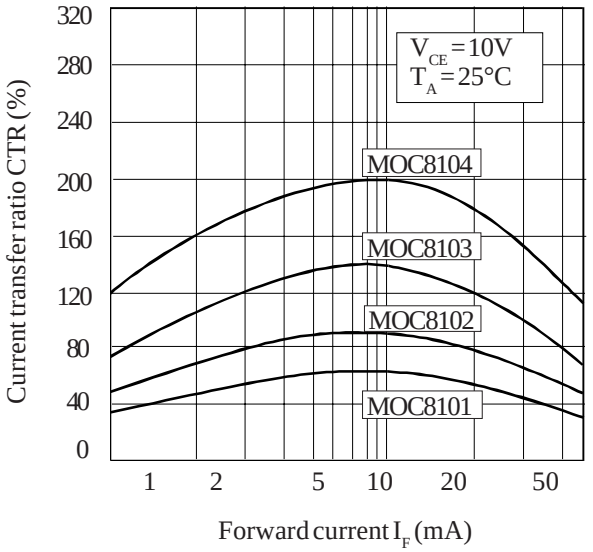
Collector Current vs. Collector-emitter Voltage



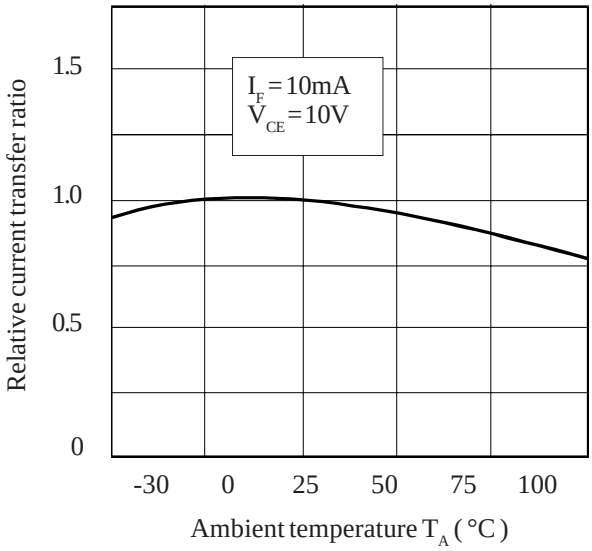
Forward Current vs. Ambient Temperature



Current Transfer Ratio vs. Forward Current



Relative Current Transfer Ratio vs. Ambient Temperature



Collector-emitter Saturation Voltage vs. Ambient Temperature