

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

**DESCRIPTION**

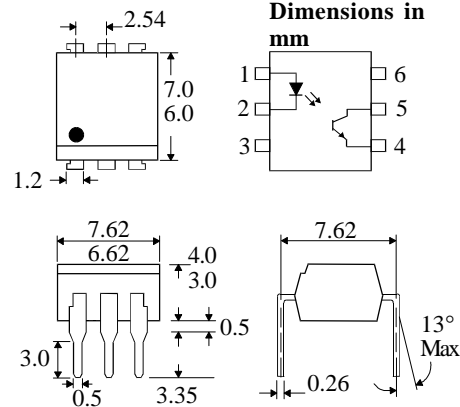
The MOC8106, MOC8107, MOC8108 series of optically coupled isolators consist of infrared light emitting diode and NPN silicon photo transistor in a standard 6 pin dual in line plastic package with the base pin unconnected.

**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<sub>RMS</sub>, 7.5kV<sub>PK</sub>)
- 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**

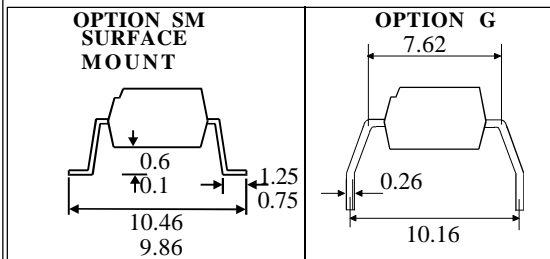
Forward Current	60mA
Reverse Voltage	6V
Power Dissipation	120mW

**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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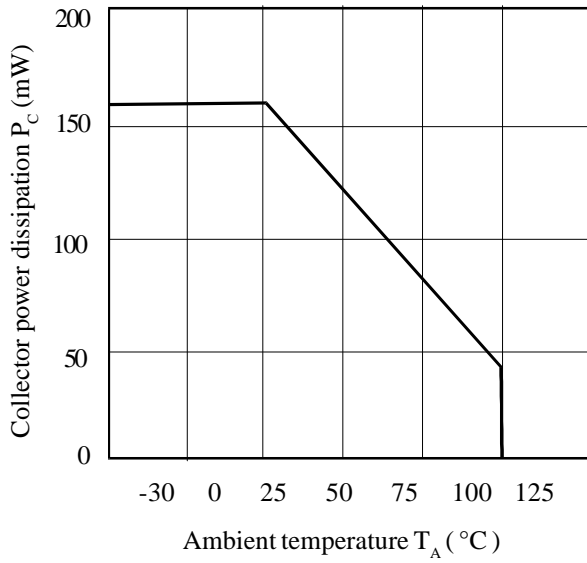
**ISOCOM INC**  
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**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C Unless otherwise noted)**

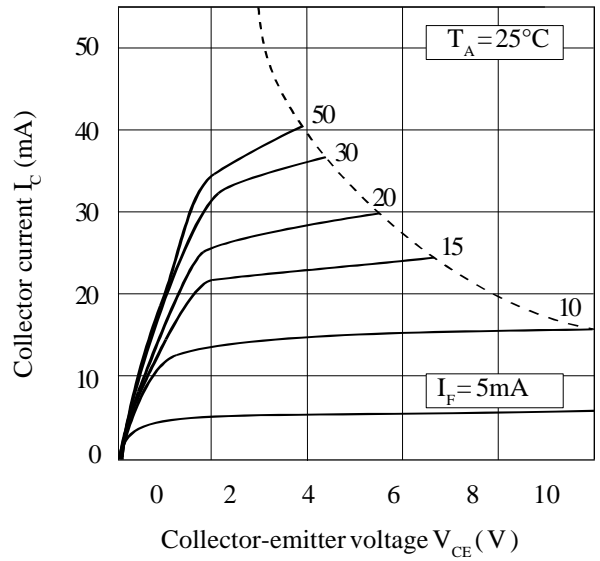
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V <sub>F</sub> )	1.0	1.15	1.5	V	I <sub>F</sub> = 10mA
	Reverse Voltage (V <sub>R</sub> )	6			V	I <sub>R</sub> = 10μA
	Reverse Current (I <sub>R</sub> )			10	μA	V <sub>R</sub> = 6V
Output	Collector-emitter Breakdown (BV <sub>CEO</sub> ) (Note 2)	70			V	I <sub>C</sub> = 1mA
	Emitter-collector Breakdown (BV <sub>ECO</sub> )	6			V	I <sub>E</sub> = 100μA
	Collector-emitter Dark Current (I <sub>CEO</sub> )		1.0	50	nA	V <sub>CE</sub> = 10V
Coupled	Output Collector Current I <sub>C</sub> (CTR) (Note 2&3)					
	MOC8106	5.0(50)		15(150)	mA(%)	10mA I <sub>F</sub> , 10V V <sub>CE</sub>
	MOC8107	10(100)		30(300)	mA(%)	10mA I <sub>F</sub> , 10V V <sub>CE</sub>
	MOC8108	25(250)		60(600)	mA(%)	10mA I <sub>F</sub> , 10V V <sub>CE</sub>
	Collector-emitter Saturation Voltage V <sub>CE(SAT)</sub>		0.15	0.4	V	5mA I <sub>F</sub> , 0.5mA I <sub>C</sub>
	Input to Output Isolation Voltage V <sub>ISO</sub>	5300 7500			V <sub>RMS</sub> V <sub>PK</sub>	See note 1 See note 1
	Input-output Isolation Resistance R <sub>ISO</sub>	5x10 <sup>10</sup>			Ω	V <sub>IO</sub> = 500V (note 1)
	Turn-on Time ton		7.5	20	μs	V <sub>CC</sub> = 10V, I <sub>C</sub> = 2mA, R <sub>L</sub> = 100Ω
	Turn-off Time toff		5.7	20	μs	
	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.  
 Note 3 Production testing - limits verified with pulse test

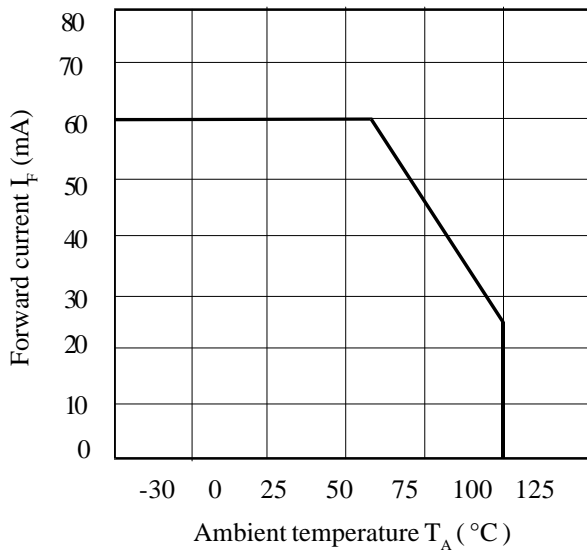
**Collector Power Dissipation vs. Ambient Temperature**



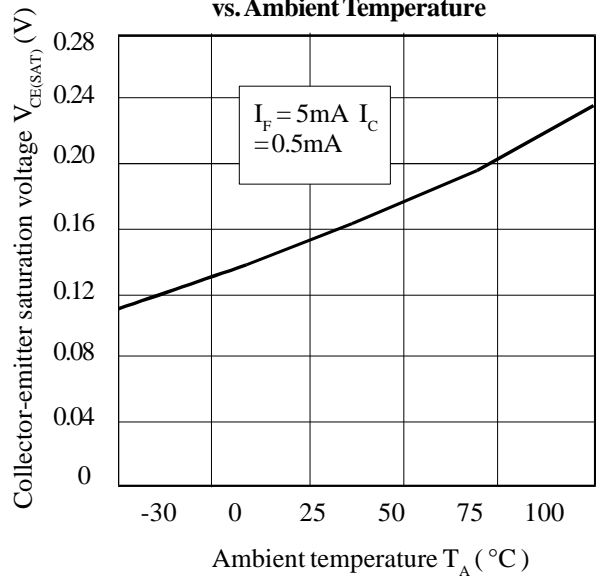
**Collector Current vs. Collector-emitter Voltage**



**Forward Current vs. Ambient Temperature**



**Collector-emitter Saturation Voltage vs. Ambient Temperature**



**Relative Current Transfer Ratio vs. Ambient Temperature**

