

MOC8111X, MOC8112X, MOC8113X
MOC8111, MOC8112, MOC8113



ISOCOM
COMPONENTS

**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
- BSI approved - Certificate No. 8001

DESCRIPTION

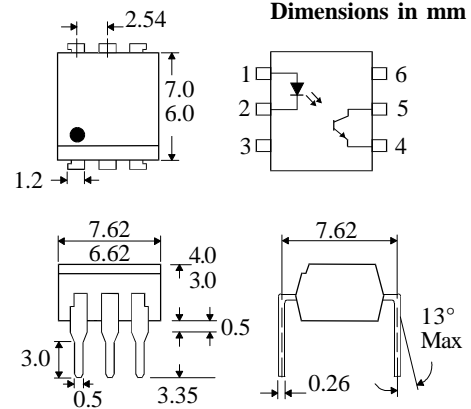
The MOC8111, MOC8112, MOC8113 series of optically coupled isolators consist of infrared light emitting diode and NPN silicon photo transistor in a standard 6 pin dual in line plastic package with the base pin unconnected.

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

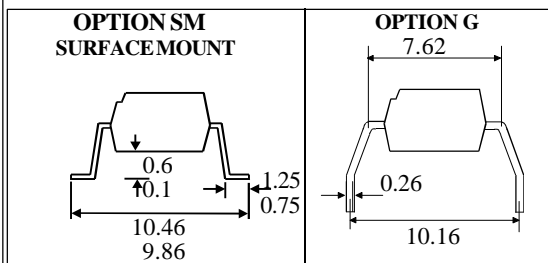
Forward Current _____ 60mA
Reverse Voltage _____ 6V
Power Dissipation _____ 105mW

OUTPUT TRANSISTOR

Collector-emitter Voltage BV_{CEO} _____ 30V
Emitter-collector Voltage BV_{ECO} _____ 6V
Power Dissipation _____ 160mW

POWER DISSIPATION

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



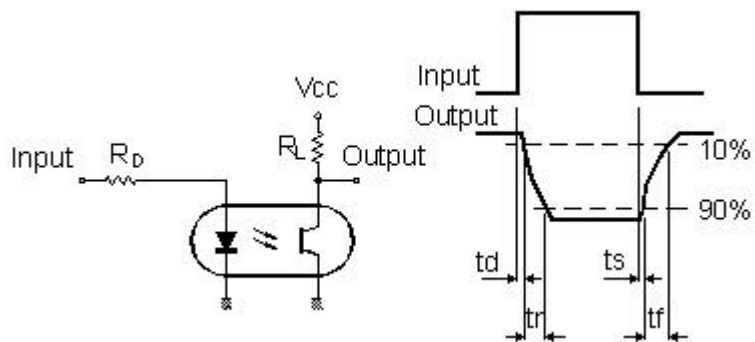
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ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

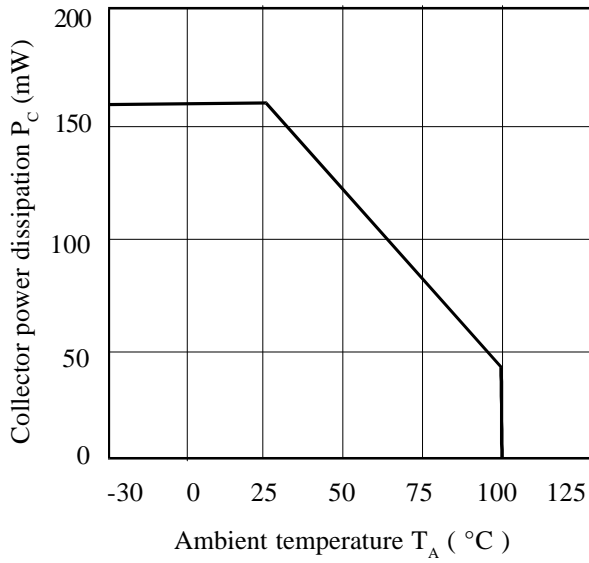
| PARAMETER | | MIN | TYP | MAX | UNITS | TEST CONDITION |
|-----------|--|--------------------|--------|-----|--------------------------------|---|
| Input | Forward Voltage (V_F) | | 1.15 | 1.5 | V | $I_F = 10\text{mA}$ |
| | Reverse Current (I_R) | | | 10 | μA | $V_R = 6\text{V}$ |
| Output | Collector-emitter Breakdown (BV_{CEO}) (Note 2) | 30 | | | V | $I_C = 1\text{mA}$ |
| | Emitter-collector Breakdown (BV_{ECO}) | 6 | | | V | $I_E = 100\mu\text{A}$ |
| | Collector-emitter Dark Current (I_{CEO}) | | | 50 | nA | $V_{CE} = 10\text{V}$ |
| Coupled | Output Collector Current (I_C) MOC8111 | 2 | | | mA | $10\text{mA } I_F, 10\text{V } V_{CE}$ |
| | MOC8112 | 5 | | | mA | $10\text{mA } I_F, 10\text{V } V_{CE}$ |
| | MOC8113 | 10 | | | mA | $10\text{mA } I_F, 10\text{V } V_{CE}$ |
| | Collector-emitter Saturation Voltage $V_{CE(SAT)}$ | | 0.15 | 0.4 | V | $10\text{mA } I_F, 0.5\text{mA } I_C$ |
| | Input to Output Isolation Voltage V_{ISO} | 5300 7500 | | | V_{RMS} V_{PK} | See note 1 See note 1 |
| | Input-output Isolation Resistance R_{ISO} | 5×10^{10} | | | Ω | $V_{IO} = 500\text{V}$ (note 1) |
| | Response Time (Rise), tr Response Time (Fall), tf | | 2 2 | | μs μs | $V_{CC} = 5\text{V}, I_F = 10\text{mA}$ $R_L = 75\Omega$ (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.

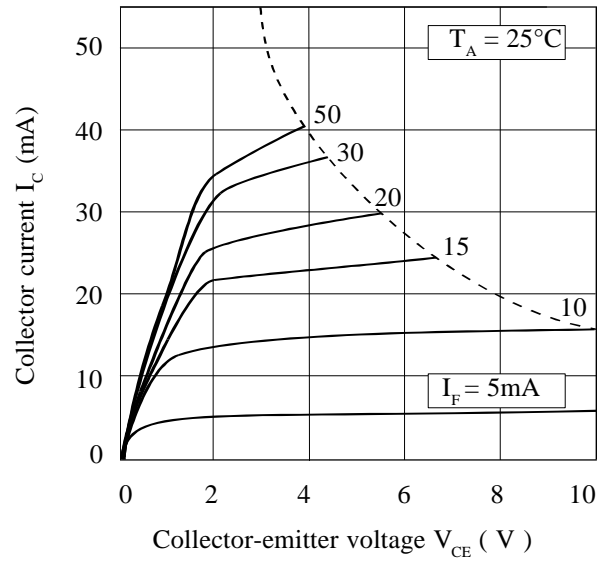
FIGURE 1



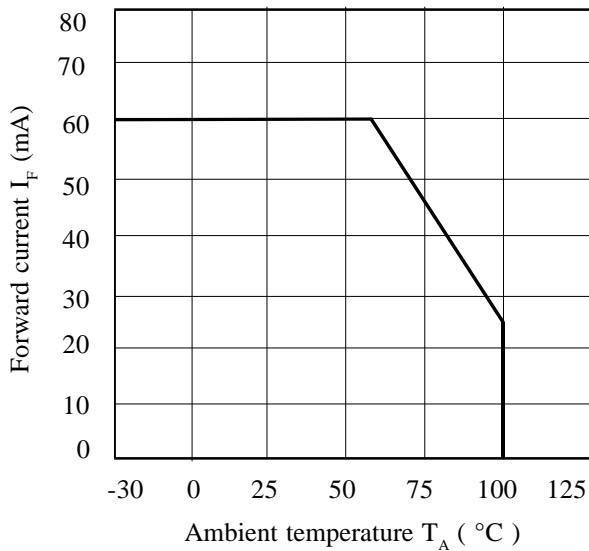
Collector Power Dissipation vs. Ambient Temperature



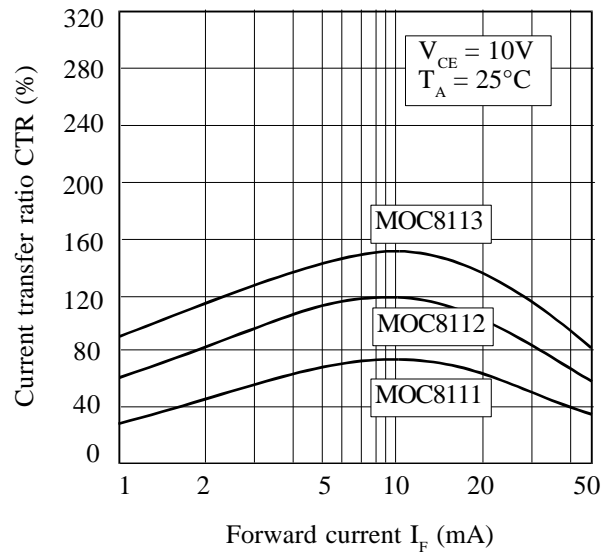
Collector Current vs. Collector-emitter Voltage



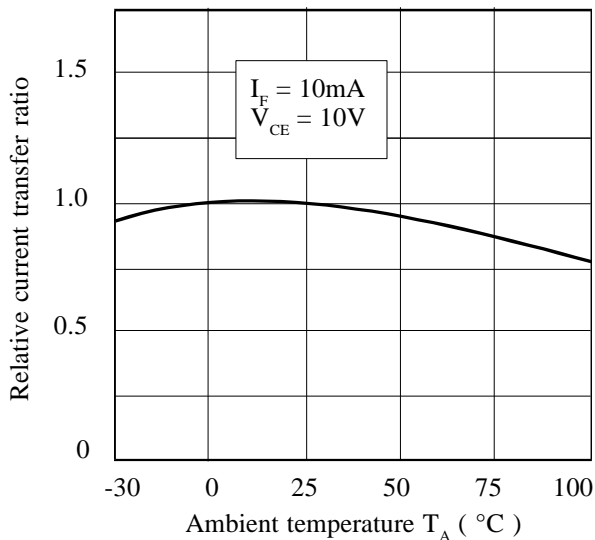
Forward Current vs. Ambient Temperature



Current Transfer Ratio vs. Forward Current



Relative Current Transfer Ratio vs. Ambient Temperature



Collector-emitter Saturation Voltage vs. Ambient Temperature

