HIGH DENSITY PHOTOTRANSISTOR OPTICALLY COUPLED ISOLATORS

APPROVALS

- UL recognised, File No. E91231

'X' SPECIFICATION APPROVALS

- **MCT6 -**
  VDE 0884 in 3 available lead form : -
  - STD
  - G form
  - SMD approved to CECC 00802

  MCT61, MCT62, MCT66 -
  VDE 0884 approval pending
- EN60950 approval pending

DESCRIPTION

The MCT6, MCT61, MCT62 & MCT66 series of optically coupled isolators consist of infrared light emitting diodes and NPN silicon photo transistors in space efficient dual in line plastic packages mounted two channels per unit.

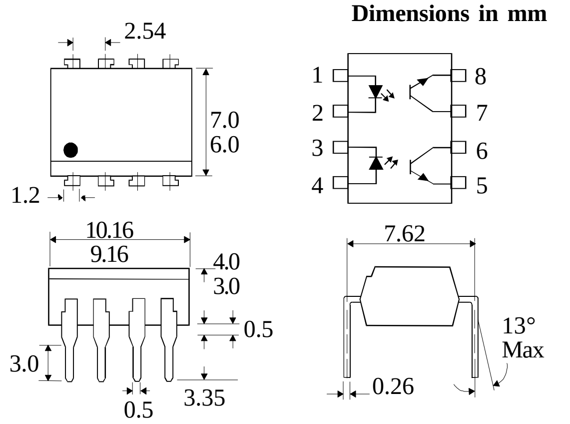
FEATURES

- 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 ($5.3kV_{RMS}$, $7.5kV_{PK}$)

APPLICATIONS

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

Dimensions in mm



ABSOLUTE MAXIMUM RATINGS
(25°C unless otherwise specified)

Storage Temperature	-55°C to + 125°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	50mA
Reverse Voltage	6V
Power Dissipation	70mW

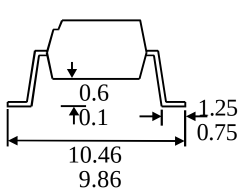
OUTPUT TRANSISTOR

Collector-emitter Voltage BV_{CEO}	30V
Emitter-collector Voltage BV_{ECO}	6V
Power Dissipation	150mW

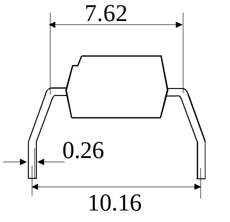
POWER DISSIPATION

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

OPTION SM
SURFACE MOUNT



OPTION G



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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)			1.50	V	I_F = 20mA
	Reverse Voltage (V_R)	3			V	I_R = 10µA
	Reverse Current (I_R)			10	µA	V_R = 3V
Output	Collector-emitter Breakdown (BV_{CEO})	30			V	I_C = 1mA (note 2)
	Emitter-collector Breakdown (BV_{ECO})	6			V	I_E = 100µA
	Collector-emitter Dark Current (I_{CEO})			100	nA	V_{CE} = 10V
Coupled	Current Transfer Ratio (CTR) (Note 2)					
	MCT6	20			%	10mA I_F , 10V V_{CE}
	MCT61	50			%	5mA I_F , 5V V_{CE}
	MCT62	100			%	5mA I_F , 5V V_{CE}
	MCT66	6			%	10mA I_F , 10V V_{CE}
	Collector-emitter Saturation Voltage V_{CESAT}					
	MCT6,61,62			0.4	V	16mA I_F , 2mA I_C
	MCT66			0.4	V	40mA I_F , 2mA I_C
	Input to Output Isolation Voltage V_{ISO}	5300			V_{RMS}	See note 1
	Input to Output Isolation Voltage V_{ISO}	7500			V_{PK}	See note 1
	Input-output Isolation Resistance R_{ISO}	5×10^{10}			Ω	V_{IO} = 500V (note 1)
	Output Rise Time, Fall Time tr , tf		2.4		µs	I_C = 2mA, V_{CC} = 10V, R_L = 100Ω (Fig. 1)
	Output Rise Time, Fall Time tr , tf		15		µs	I_C = 2mA, V_{CC} = 10V, R_L = 1kΩ (Fig. 2)

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.

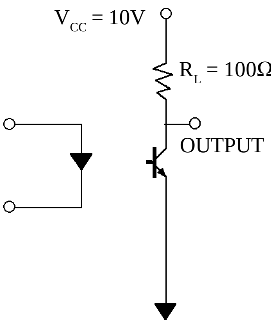


FIG 1

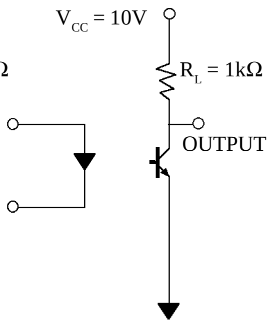
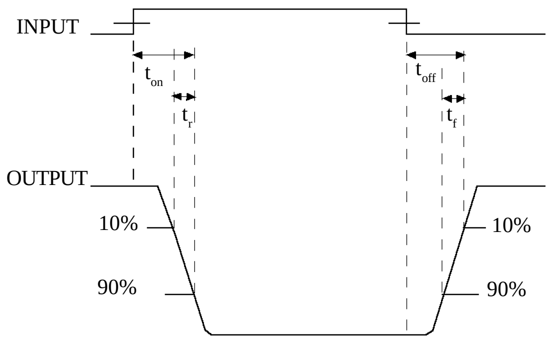
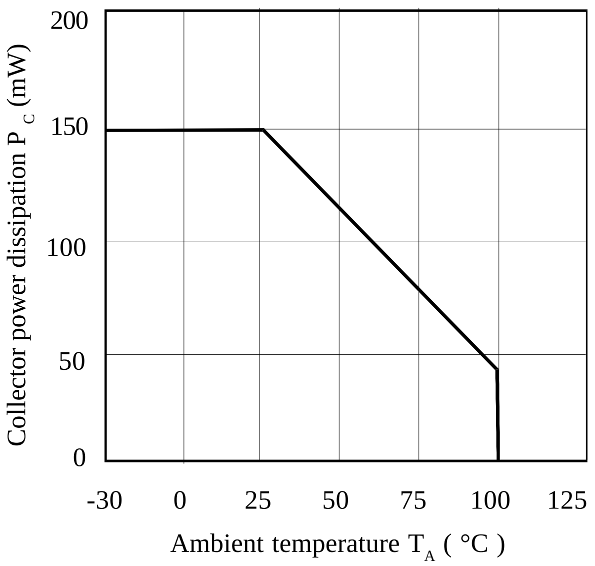


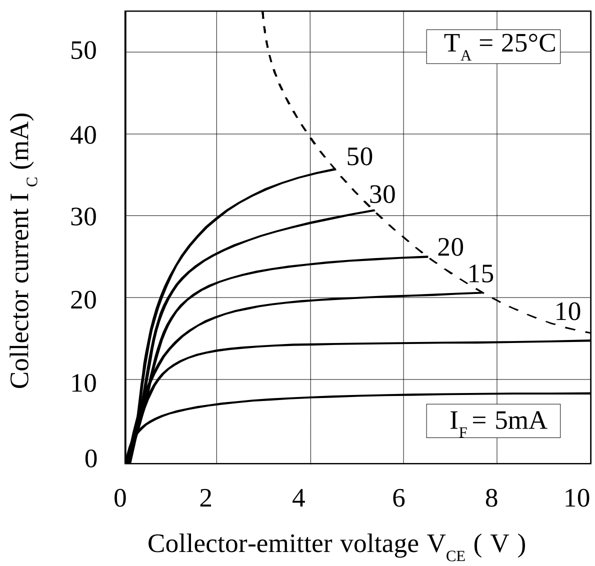
FIG 2



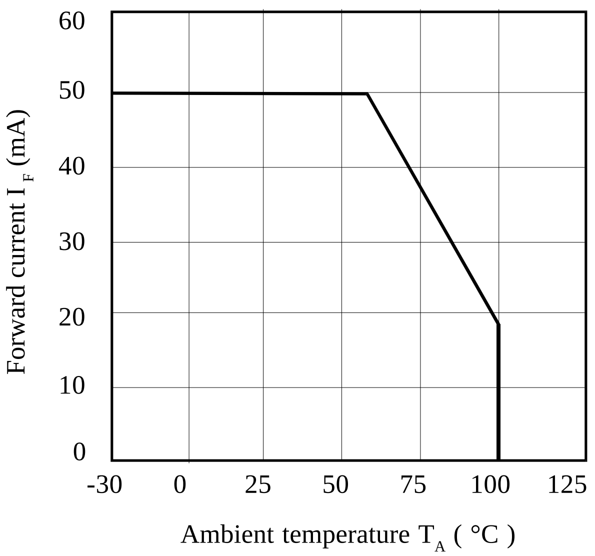
Collector Power Dissipation vs. Ambient Temperature



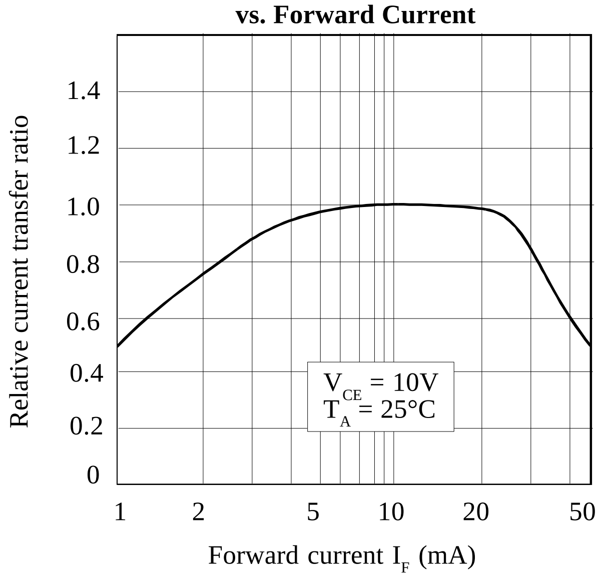
Collector Current vs. Collector-emitter Voltage



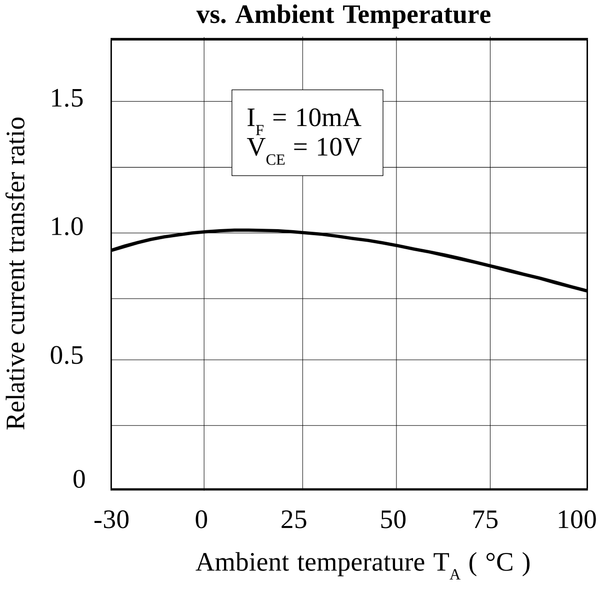
Forward Current vs. Ambient Temperature



Relative Current Transfer Ratio vs. Forward Current



Relative Current Transfer Ratio vs. Ambient Temperature



Collector-emitter Saturation Voltage vs. Ambient Temperature