

MCT2200X, MCT2201X, MCT2202X,
MCT2200, MCT2201, MCT2202



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. 9620076 01
 - Demko - Reference No. 305567

DESCRIPTION

The MCT220_ series of optically coupled isolators consist of an infrared light emitting diode and NPN silicon photo transistor in a standard 6 pin dual in line plastic package.

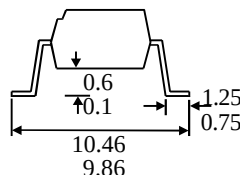
FEATURES

- 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 Isolation Voltage (5.3kV_{RMS}, 7.5kV_{PK})
- All electrical parameters 100% tested
- Custom electrical selections available

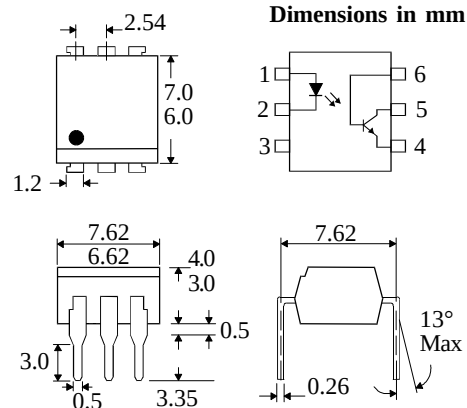
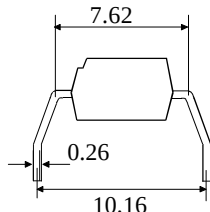
APPLICATIONS

- DC motor controllers
- Industrial systems controllers
- Measuring instruments
- Signal transmission between systems of different potentials and impedances

OPTION SM SURFACE MOUNT



OPTION G



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
Collector-base Voltage BV_{CBO} _____ 70V
Emitter-base Voltage BV_{EBO} _____ 5V
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)		1.2	1.5	V	$I_F = 20\text{mA}$
	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}) (note 2)	30			V	$I_C = 1\text{mA}$
	Collector-base Breakdown (BV_{CBO})	70			V	$I_C = 100\mu\text{A}$
	Emitter-base Breakdown (BV_{EBO})	5			V	$I_E = 100\mu\text{A}$
	Collector-emitter Dark Current (I_{CEO})			50	nA	$V_{CE} = 10\text{V}$
Coupled	Current Transfer Ratio (CTR)				%	$10\text{mA } I_F, 5\text{V } V_{CE}$
	MCT2200	20			%	
	MCT2201	100			%	
	MCT2202	63		125	%	
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			0.4	V	$10\text{mA } I_F, 2.5\text{mA } I_C$
	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}	5×10^{10}			Ω	$V_{IO} = 500\text{V}$ (note 1)
	Turn-on Time t_{ON}			10	μs	$V_{CC} = 5\text{V}, R_L = 100\Omega,$
	Turn-off Time t_{OFF}			10	μs	$I_C = 2\text{mA}$, (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.

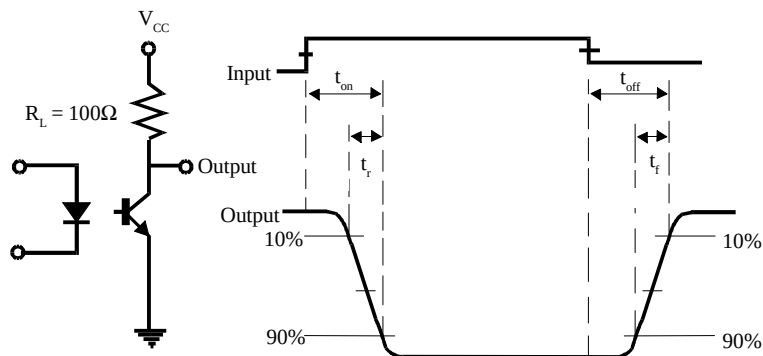
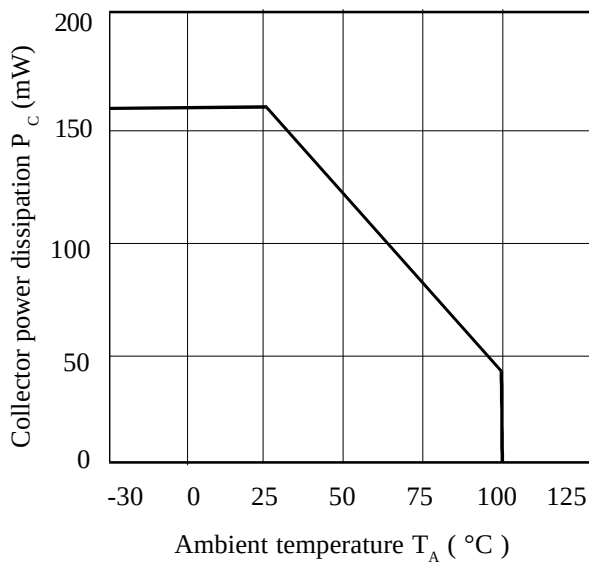
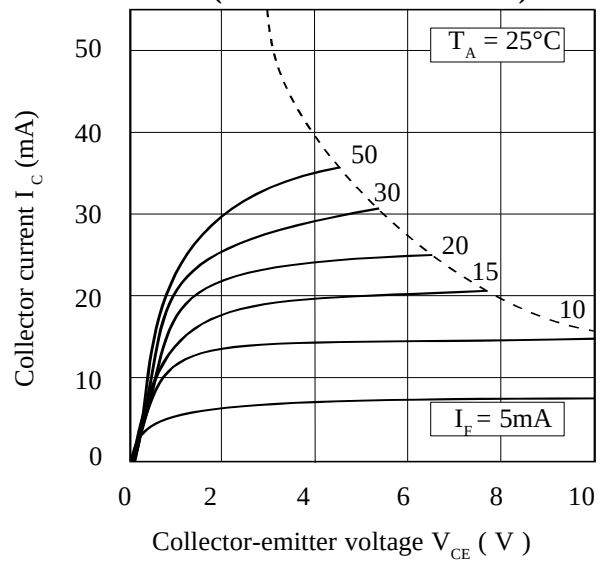


FIG 1

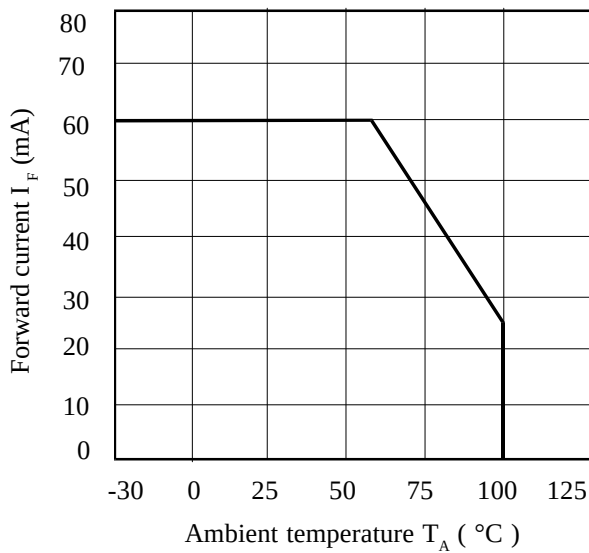
Collector Power Dissipation vs. Ambient Temperature



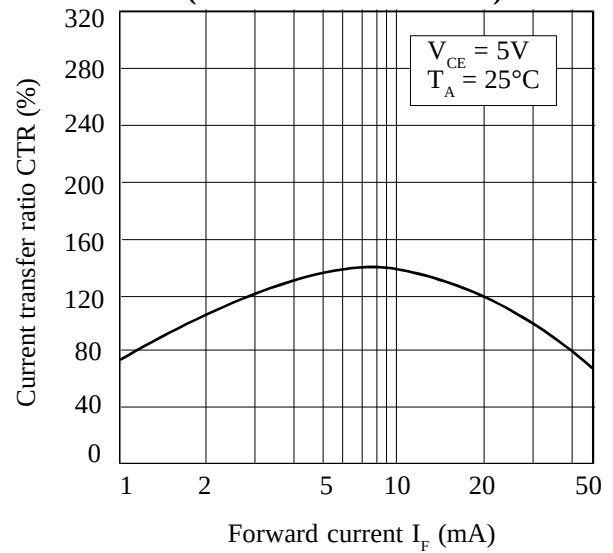
Collector Current vs. Collector-emitter Voltage (normalised to MCT2201)



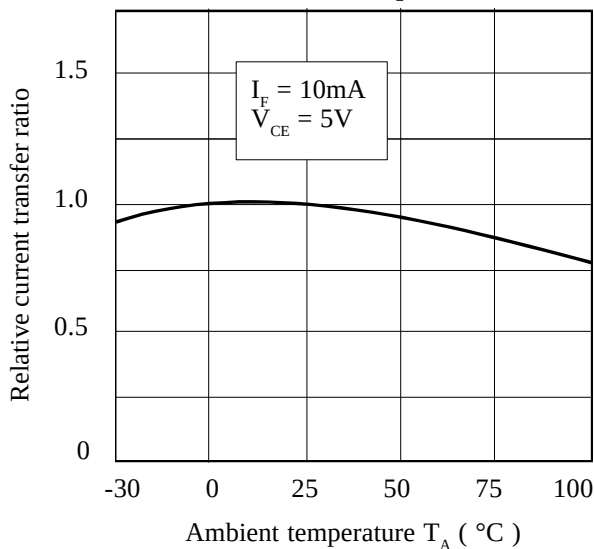
Forward Current vs. Ambient Temperature



Current Transfer Ratio vs. Forward Current (normalised to MCT2201)



Relative Current Transfer Ratio vs. Ambient Temperature



Collector-emitter Saturation Voltage vs. Ambient Temperature

