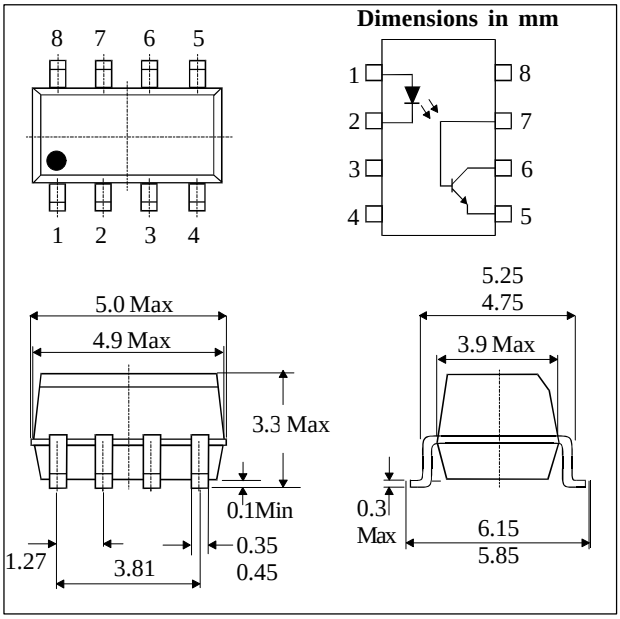
MOC205 , MOC206 , MOC207 , MOC208,
MOC211 , MOC212 , MOC213 ,
MOC215 , MOC216 , MOC217

SMALL OUTLINE OPTICALLY COUPLED ISOLATOR TRANSISTOR OUTPUT

DESCRIPTION

This series of optically coupled isolators consist of a Gallium Arsenide infrared emitting diode and NPN silicon photo transistor mounted in a standard 8 pin SOIC package,which makes them ideally suited for high density applications with limited space.



FEATURES

- Standard SOIC-8 Footprint with 0.05" Lead Spacing
- Specified min. and max. CTR at 10mA I_F, 10V V_{CE}
  MOC205, 40 - 80%
  MOC206, 63 - 125%
  MOC207, 100 - 200%
  MOC208, 160 - 320%
- Specified minimum CTR at 10mA I_F, 10V V_{CE}
  MOC211, 20%
  MOC212, 50%
  MOC213, 100%
- Specified minimum CTR at 1mA I_F, 5V V_{CE}
  MOC215, 20%
  MOC216, 50%
  MOC217, 100%
- Isolation Voltage, 2500 V_{RMS}
- High BV_{CEO} (70V min)
- All electrical parameters 100% tested
- Available in Tape and Reel - add suffix " T& R "
- Custom electrical selections available

APPLICATIONS

- Computer terminals
- Industrial systems controllers
- Hybrid substrates that require high density mounting
- Signal transmission between systems of different potentials and impedances

ABSOLUTE MAXIMUM RATINGS
(25°C unless otherwise noted)

Storage Temperature _____ -55°C to +125°C
Operating Temperature _____ -55°C to +100°C
Lead Soldering Temperature _____ 260°C
(single wave for 10 secs)
Input to Output Isolation Voltage ____ 2500V_{RMS}

INPUT DIODE

Forward Current _____ 60mA
Reverse Voltage _____ 6V
Peak Forward Current (tp ≤ 10µs) _____ 3A
Power Dissipation _____ 100mW
(derate linearly 1.33mW/°C above 25°C)
Junction Temperature _____ 125°C

OUTPUT TRANSISTOR

Collector-emitter Voltage BV_{CEO} _____ 70V
Emitter-collector Voltage BV_{ECO} _____ 7V
Collector -base Voltage BV_{CBO} _____ 70V
Collector Current _____ 50mA
Collector Current _____ 100mA
(pw ≤ 10ms , 50% duty ratio)
Power Dissipation _____ 150mW
(derate linearly 2.00mW/°C above 25°C)
Junction Temperature _____ 125°C

PACKAGE

Total Power Dissipation _____ 250mW
(derate linearly 3.3mW/°C above 25°C)

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ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input	Forward Voltage (V_F)		1.2	1.5	Volt	I_F = 10 mA
	Capacitance		50		pF	V_R = 0 , f = 1 MHz
	Reverse Current (I_R)			100	µA	V_R = 6V
Output	Collector-emitter Voltage (BV_{CEO})	70			Volt	I_C = 100 µA
	Emitter-collector Voltage (BV_{ECO})	7			Volt	I_E = 100 µA
	Collector-base Voltage (BV_{CBO})	70			Volt	I_C = 100 µA
	Collector-emitter Dark Current (I_{CEO})			50	nA	V_{CE} = 10V
Coupled	Current Transfer Ratio (CTR) MOC205	40		80	%	I_F = 10 mA, V_{CE} = 10V
	MOC206	63		125	%	
	MOC207	100		200	%	
	MOC208	160		320	%	
	MOC211	20			%	
	MOC212	50			%	
	MOC213	100			%	
	MOC205	13			%	I_F = 1 mA, V_{CE} = 10V
	MOC206	22			%	
	MOC207	34			%	
	MOC208	56			%	
	MOC215	20			%	I_F = 1 mA, V_{CE} = 5V
	MOC216	50			%	
	MOC217	100			%	
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$ (MOC205 to MOC213)			0.4	Volt	I_F = 10 mA, I_C = 2 mA
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$ (MOC215 to MOC217)			0.4	Volt	I_F = 1 mA, I_C = 0.1 mA
	Capacitance Input to Output (C_{ISO})		0.3		pF	f = 1MHz (note 1)
	Input to Output Isolation Resistance (R_{ISO})		10^{11}		Ω	V_{IO} = 500V (note 1)
	Input to Output Isolation Voltage (V_{ISO})	2500			V_{RMS}	Note 1
	Output Turn on Time (t_{on})		3.0		µs	
	Output Turn off Time (t_{off})		3.0		µs	I_C = 2 mA,
	Output Rise Time (t_r)		1.6		µs	V_{CC} = 10V, R_L = 100Ω
	Output Fall Time (t_f)		2.2		µs	

Note 1. Measured with input leads shorted together and output leads shorted together.

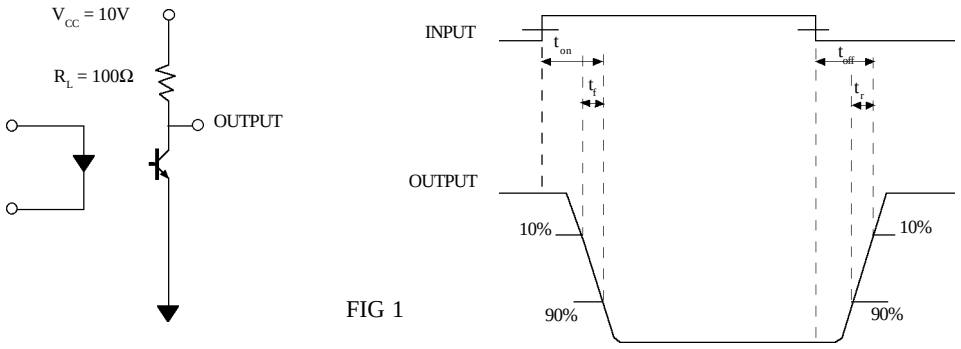
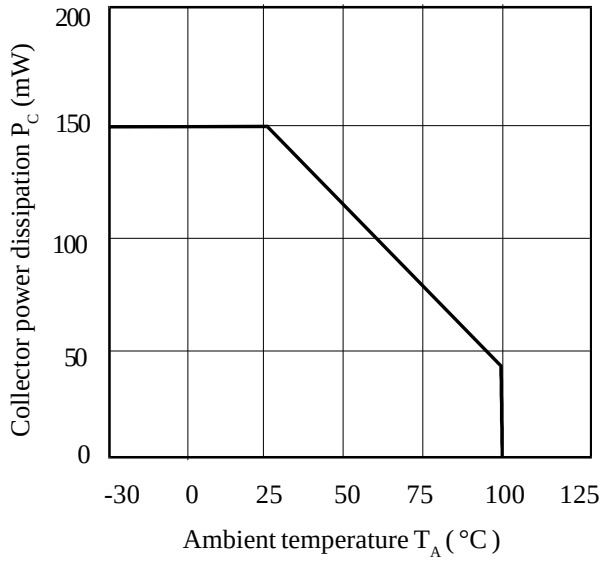
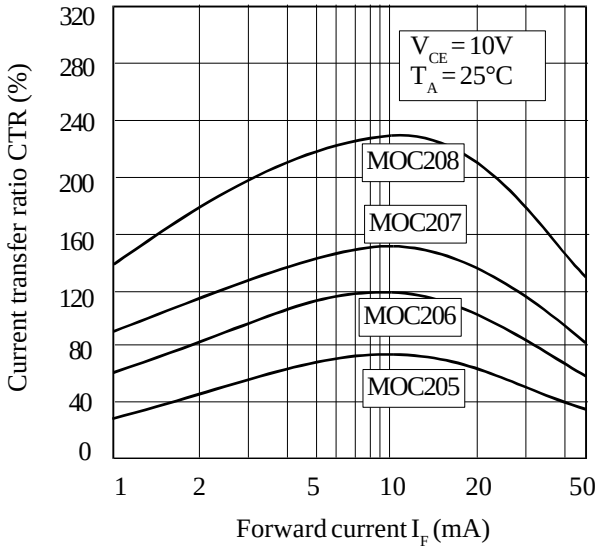


FIG 1

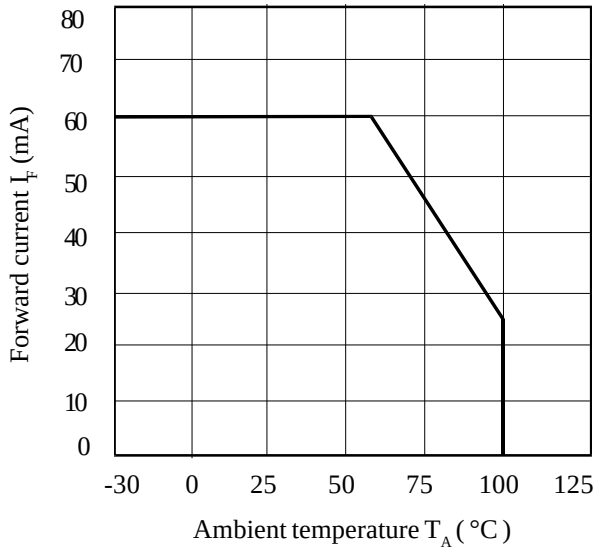
Collector Power Dissipation vs. Ambient Temperature



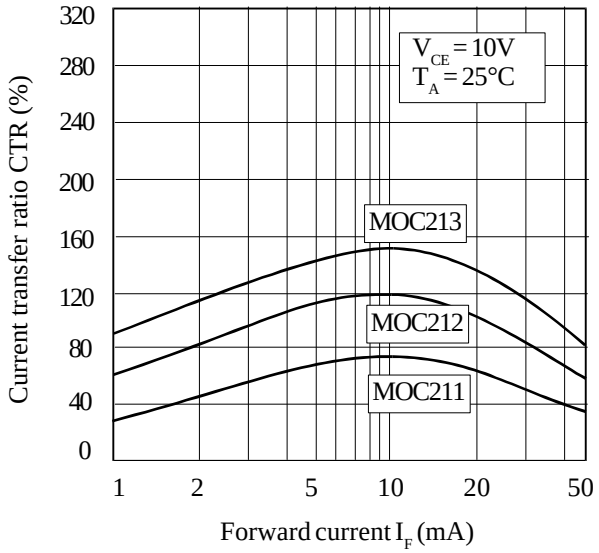
Current Transfer Ratio vs. Forward Current



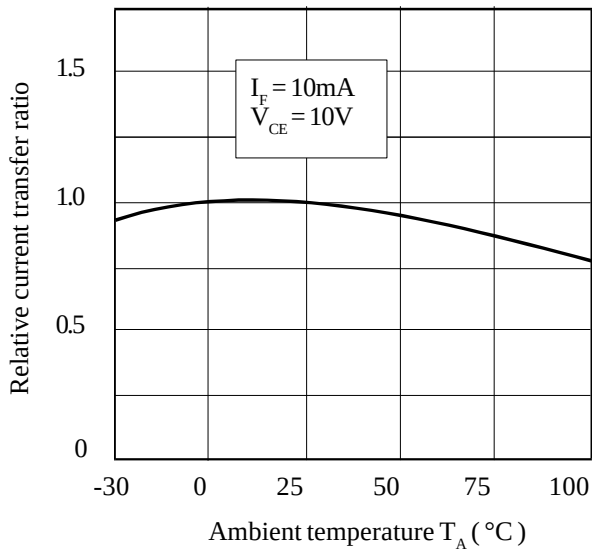
Forward Current vs. Ambient Temperature



Current Transfer Ratio vs. Forward Current



Relative Current Transfer Ratio vs. Ambient Temperature



Current Transfer Ratio vs. Forward Current