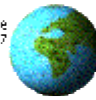




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BSI 9000 CECC 20000
APPROVED MANUFACTURER

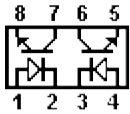
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MCT6, MCT61, MCT62, MCT66 OPTICALLY COUPLED ISOLATORS

Circuit



Features

- 2500 V Isolation.
- Choice Of 4 Current Transfer Ratios.
- Low Cost Dual-In-Line Package.
- Two Packages Fit Into a 16 Lead DIP Socket.

Description

The MCT6, MCT62, MCT61 and MCT66 optoisolators have two channels for high density applications. For four channel applications, two-packages fit into a standard 16 pin DIP socket. Each channel is an NPN silicon planar phototransistor optically coupled to a gallium arsenide infrared emitting diode. Surface Mount Option Available.

All electrical parameters are 100% tested by manufacturing. Specifications are guaranteed to a cumulative 0.65% AQL.

Absolute Maximum Ratings (Ta=25°C)

Storage Temperature:	-55°C to +150°C
Operating Temperature:	-55°C to +100°C
Lead Soldering:	250°C for 10s, 1.6mm from case
Input-to-Output Isolation Voltage:	±2500Vdc (note 1)

Input Diode (each channel)

Forward DC Current:	60mA
Reverse DC Voltage:	3V
Peak Forward Current:	3A (1µs pulse, 300pps)
Power Dissipation:	100mW
Derate Linearly:	1.33mW/°C above 25°C

Output Transistor

Collector Current:	30mA
Power Dissipation:	150mW
Derate Linearly:	2.00mW/°C above 25°C

Coupled

Input to Output breakdown Voltage:	2500Vrms
Total Package Power Dissipation:	400mW
Derate Linearly:	5.33mW/°C above 25°C

Electro-optical Characteristics (Ta=25°C)

INPUT DIODE	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
V _F	Rated Forward Voltage	I _F =20mA		1.25	1.5	V
V _R	Forward Current	I _R =10µA	3	25		V
I _R	Reverse Current	V _R =3.0V		0.001	10	µA
C _J	Junction Capacitance	V _F =0V		50		pF
OUTPUT TRANSISTOR (I_F=0)						
BV _{CEO}	Collector-Emitter Voltage	I _C =1mA	30	35		V
BV _{ECO}	Emitter-Collector Voltage	I _E =100µA	6	13		V
I _{CEO}	Leakage Current, Collector-Emitter	V _{CE} =10V		5	100	nA
C _{CE}	Capacitance Collector-Emitter	V _{CE} =0V		8		pF
COUPLED						
I _C /I _F	DC Current Transfer Ratio					
	MCT6	V _{CE} =10V, I _F =10mA	20			%
	MCT66		6			%

	MCT61	$V_{CE}=5V, I_F=5mA$	50			%
	MCT62		100			%
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage					
	MCT6, 61, 62	$I_C=2mA, I_F=16mA$		0.2	0.4	V
	MCT66	$I_C=2mA, I_F=40mA$		0.2	0.4	V

SWITCHING TIMES

	Non-saturated rise time, fall time	$I_C=2mA, V_{CE}=10V,$		2.4		μs
	(Note 2)	$R_L=100ohm$				
	Non-saturated rise time, fall time	$I_C=2mA, V_{CE}=10V,$		15		μs
	(Note 2)	$R_L=1kohm$				
	Saturated turn-on time(5V - 0.8V)	$R_L=2kohm, I_F=40mA$		5		μs
	Saturated turn-off time (from saturation to 2.0V)	$R_L=2kohm, I_F=40mA$		25		μs
B_W	Bandwidth	$I_C=2mA, V_{CC}=10V,$		150		kHz
		$R_L=100ohm$				

ISOLATION CHARACRERISTICS

BV_{I-O}	Isolation Voltage	$t=1 min$	2500			VRMS
R_{I-O}	Isolation Resistance, MCT6X	$V_{I-O}=500Vdc$	1E11			ohm
	Breakdown Voltage channel-to-channel MCT6X	Relative Humidity=40%, $f=1MHz$		500		VDC
	Capacitance between channels			0.4		pF

Notes

- 1.
2. The frequency at which I_C is 3dB down from the 1kHz value.

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