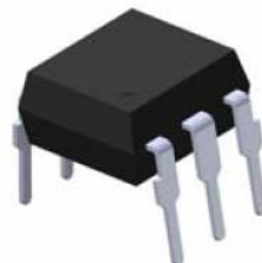


6 Pin Dip Phototransistor Photocoupler

Features

- High isolation voltage between input and output (Viso=5000Vrms)
- Creepage distance>7.62mm
- Operation temperature up to +110° C
- Compact dual-in-line package
- RoHS compliant



Applications

- Power supply regulators
- Digital logic inputs
- Microprocessor inputs

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Absolute Maximum Ratings (T_a=25°C)

Input Parameter	Symbol	Rating	Unit
Forward Current	I _F	50	mA
Peak Forward Current (t=10μS)	I _{FM}	1	A
Reverse Voltage	V _R	6	V
Power Dissipation (T _A =25°C)	P _D	70	mW
Derating Factor (above 100° C)		3.8	mW/° C
Output Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage	V _{CEO}	80	V
Collector-Base Voltage	V _{CBO}	80	V
Emitter-Collector Voltage	V _{ECO}	7	V
Emitter-Base Voltage	V _{EBO}	7	V
Power Dissipation (T _A =25°C)	P _D	150	mW
Derating Factor (above 100° C)		9.0	mW/° C
Parameter	Symbol	Rating	Unit
Total Power Dissipation	P _{tot}	200	mW
Isolation Voltage (Note 1)	V _{iso}	5000	V _{rms}
Operating Temperature	T _{opr}	-55 to +110	° C
Storage Temperature	T _{stg}	-55 to +125	° C
Soldering Temperature (For 10 Seconds)	T _{sol}	260	° C

Note: 1. AC for 1 minute, R.H.=40~60% R.H. In this test, pins 1, 2 & 3 are shorted together, and pins 4, 5 & 6 are shorted together.

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Electrical Characteristics (T_a=25°C unless specified otherwise)

Input Parameter	Symbol	Min.	Typ.*	Max.	Unit	Condition
Forward Voltage	V _F	-	1.2	1.5	V	I _F =10mA
Reverse Current	I _R	-	-	10	μA	V _R =6V
Input Capacitance	C _{in}	-	30	-	pF	V=0, f=1MHz
Output Parameter	Symbol	Min.	Typ.*	Max.	Unit	Condition
Collector-Base Dark Current	I _{CBO}	-	-	20	nA	V _{CB} =10V
Collector-Emitter Dark Current	I _{CEO}	-	-	50	nA	V _{CE} =60V, I _F =0mA
Collector-Emitter Breakdown Voltage	BV _{CEO}	80	-	-	V	I _C =1mA
Collector-Base Breakdown Voltage	BV _{CBO}	80	-	-	V	I _C =0.1mA
Emitter-Collector Breakdown Voltage	BV _{ECO}	7	-	-	V	I _E =0.1mA
Emitter-Base Breakdown Voltage	BV _{EBO}	7	-	-	V	I _E =0.1mA
Collector-Emitter Capacitance	C _{CE}	-	8	-	pF	V _{CE} =0V, f=1MHz

Transfer Characteristics (T_a=25°C unless specified otherwise)

Parameter	Symbol	Min.	Typ.*	Max.	Unit	Condition
Current Transfer Ratio	CTR	100	-	-	%	I _F =10mA, V _{CE} =10V
Collector-Emitter Saturation Voltage	V _{CE(sat)}	-	-	0.3	V	I _F =10mA, I _C =0.5mA
Isolation Resistance	R _{IO}	10 ¹¹	-	-	Ω	V _{IO} =500Vdc
Input-Output Capacitance	C _{IO}	-	0.2	-	pF	V _{IO} =0, f=1MHz
Turn-on Time	T _{on}	-	10	12	μS	V _{CC} =10V, I _C =2mA, R _L =100Ω
Turn-off Time	T _{off}	-	9	12	μS	V _{CC} =10V, I _C =2mA, R _L =100Ω

*Typical values at T_a=25°C

Typical Performance Curves

Fig.1 Forward Current vs. Forward Voltage

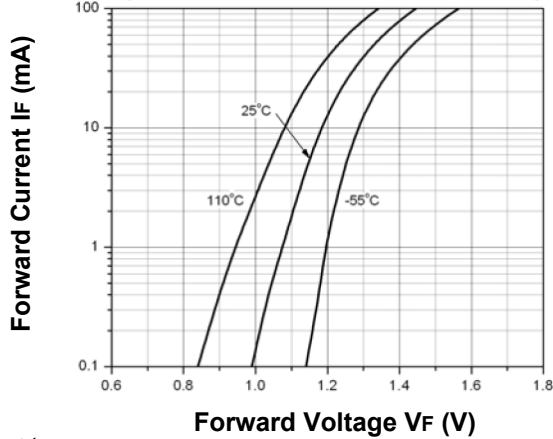
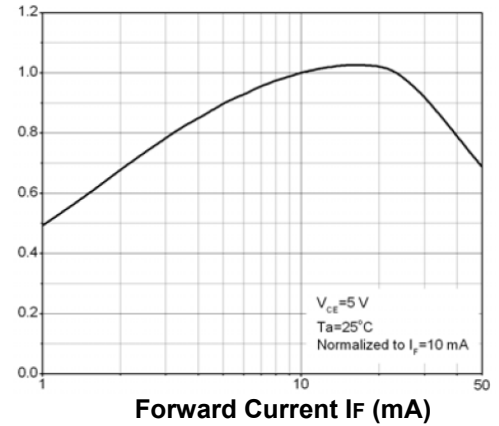


Fig.2 Current Transfer Ratio vs. Forward Current

Normalized Current Transfer Ratio, CTR



Normalized Current Transfer Ratio, CTR

Fig.3 Current Transfer Ratio vs. Ambient Temperature

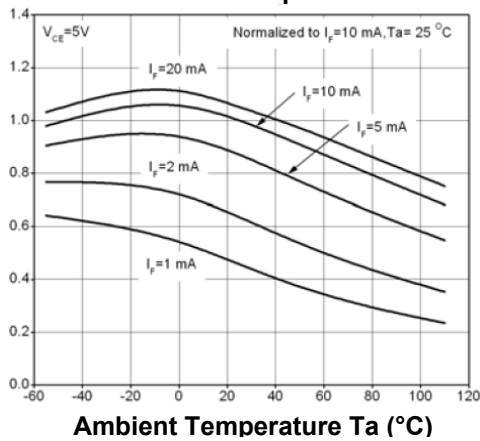
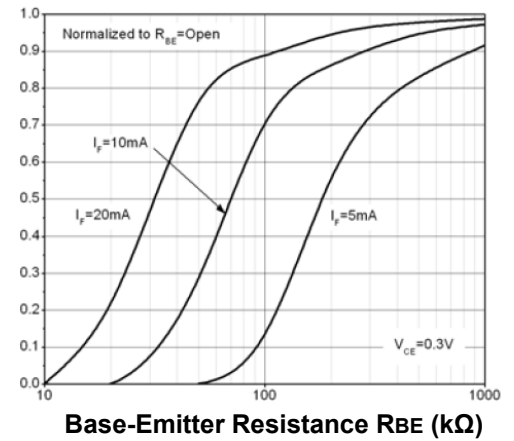


Fig.4 Current Transfer Ratio (Saturated) vs. Base-Emitter Resistance

Normalized Current Transfer Ratio, CTR



Normalized Current Transfer Ratio, CTR

Fig.5 Current Transfer Ratio (Saturated) vs. Base-Emitter Resistance

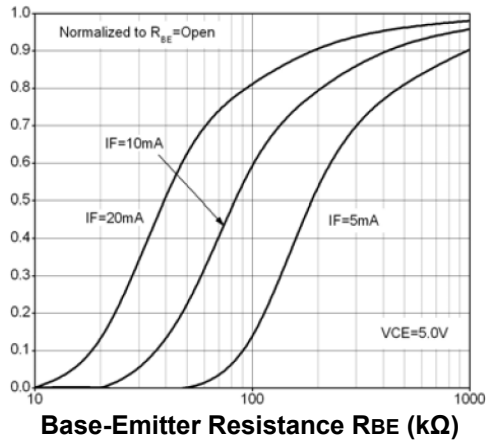
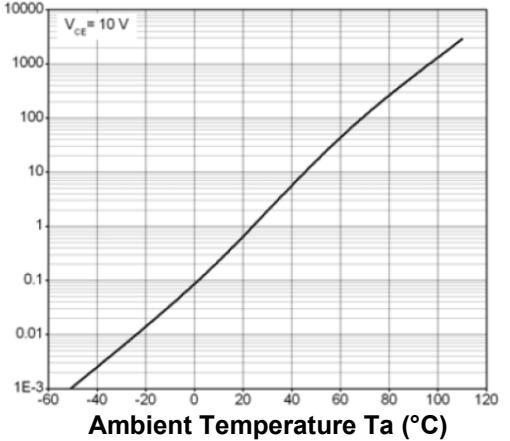


Fig.6 Dark Current vs. Ambient Temperature

Collector Dark Current ICEO (nA)



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Collector-Emitter Saturation Voltage $V_{CE(sat)}$ (V)

Fig.7 Collector-Emitter Saturation Voltage vs. Collector Current

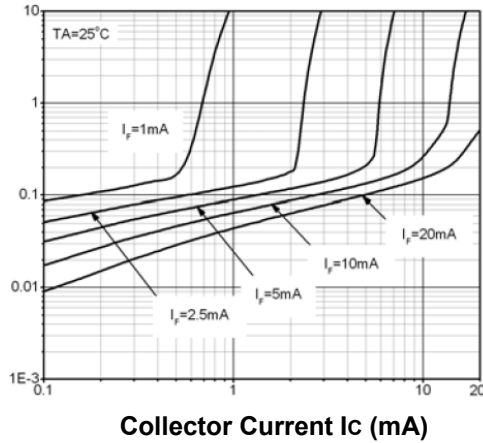


Fig.8 Switching Time vs. Load Resistance

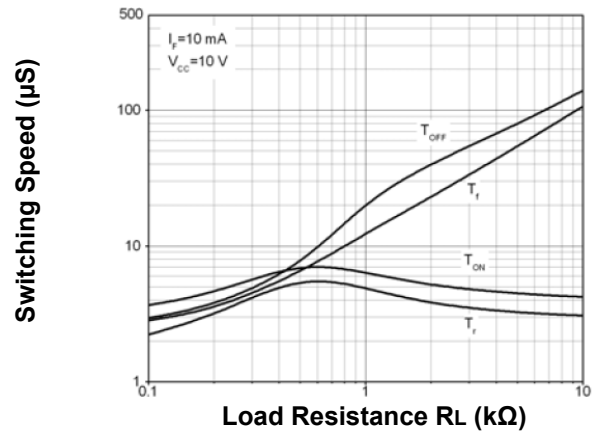


Fig.9 Turn-on Time vs. Base-Emitter Resistance

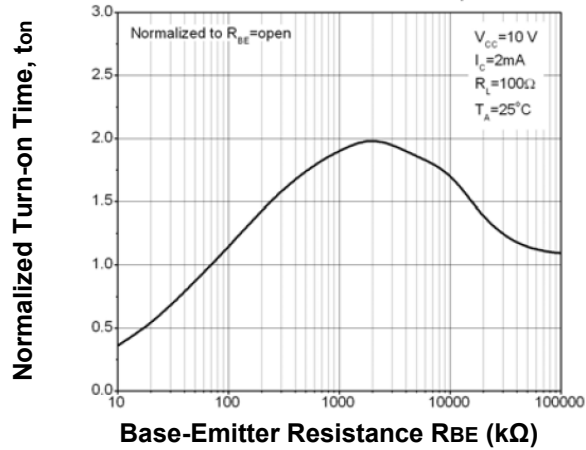


Fig.10 Turn-off Time vs. Base-Emitter Resistance

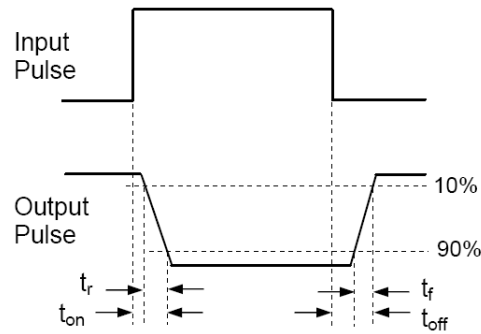
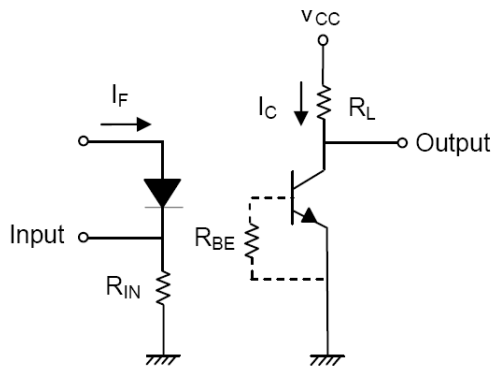
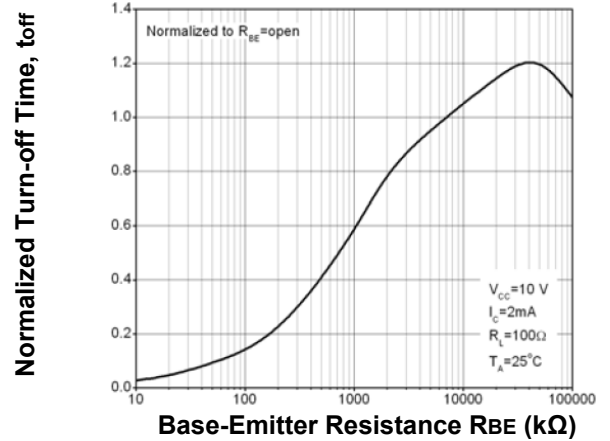
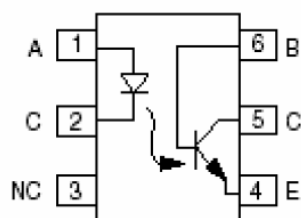
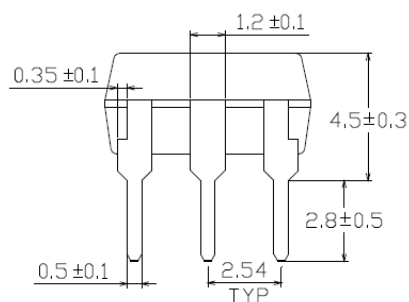
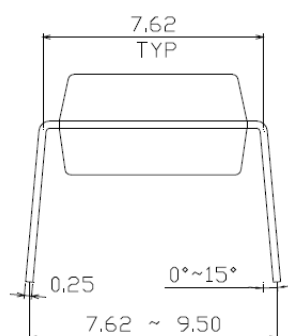
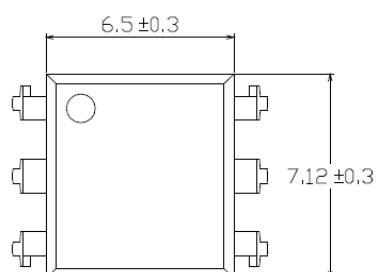


Figure 11. Switching Time Test Circuit & Waveforms

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Package Dimensions in mm

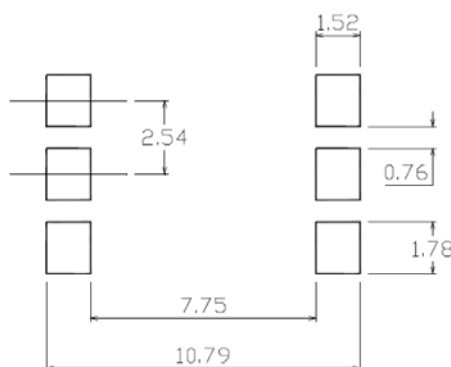


- 1. Anode
- 2. Cathode
- 3. No Connection
- 4. Emitter
- 5. Collector
- 6. Base

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Mounting Pad Layout in mm



Packing Quantity Information:

Quantity	PCS per Tube
Tube	65/Tube

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