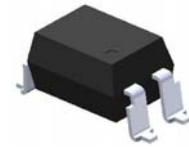


Description

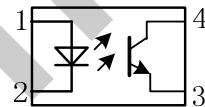
The 817 series of devices each consist of an infrared emitting diodes, optically coupled to a phototransistor detector encapsulated with green compound. The devices are in a 4-pin DIP package and available in wide-lead spacing and SMD option.



Features

- ◆ Current transfer ratio(CTR: 50~600% at $I_F = 5\text{mA}$, $V_{CE} = 5\text{V}$)
- ◆ High isolation voltage between input and output ($V_{ISO} = 5000\text{ V rms}$)
- ◆ Creepage distance $> 7.62\text{ mm}$.
- ◆ Operating temperature up to $+110^\circ\text{C}$
- ◆ Compact small outline package
- ◆ Pb free and RoHS compliant.

Schematic



Pin Configuration

1. Anode
2. Cathode
3. Emitter
4. Collector

Applications

- ◆ Programmable controllers.
- ◆ System appliances, measuring instruments.
- ◆ Telecommunication equipments.
- ◆ Home appliances, such as fan heaters, etc.
- ◆ Signal transmission between circuits of different potentials and impedances.

Absolute maximum ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Rating	Unit	
Input	Forward current	I_F	50	mA
	Reverse voltage	V_R	6	V
	Power dissipation Derating factor (above $T_a = 100^\circ\text{C}$)	P_D	70 2.9	mW mW/ $^\circ\text{C}$
Output	Power dissipation 150 mW Derating factor (above $T_a = 100^\circ\text{C}$)	P_C	150 5.8	mW mW/ $^\circ\text{C}$
	Collector current	I_C	50	mA
	Collector-Emitter voltage	V_{CEO}	35	V
	Emitter-Collector voltage	V_{ECO}	6	V
	Total power dissipation	P_{TOT}	200	mW
Isolation voltage ^{*1}	V_{ISO}	5000	V rms	
Operating temperature	T_{opr}	-40~+110	$^\circ\text{C}$	
Storage temperature	T_{stg}	-55~+125	$^\circ\text{C}$	
Soldering temperature ^{*2}	T_{sol}	260	$^\circ\text{C}$	

Notes

- 1.AC for 1 minute, R.H.= 40 ~ 60% R.H. In this test, pins 1 & 2 are shorted together, and pins 3 & 4 are shorted together.
- 2.For 10 seconds

Electrical characteristics (Ta=25°C unless specified otherwise)

Input

Parameter	Symbol	Min.	Typ.*	Max.	Unit	Condition
Reverse current	I _R	-		10	uA	V _R = 4V
Input capacitance	C _t		30	250	pF	V = 0, f = 1kHz

Output

Parameter	Symbol	Min.	Typ.*	Max.	Unit	Condition
Collector-Emitter darkcurrent	I _{CEO}	-	-	100	nA	V _{CE} = 20V, I _F = 0mA
Collector-Emitter breakdown voltage	BV _{CEO}	35	-	-	V	I _C = 0.1mA
Emitter-Collector breakdown voltage	BV _{ECO}	6	-	-	V	I _E = 0.1mA

Transfer characteristics (Ta=25°C unless specified otherwise)

Parameter	Symbol	Min.	Typ.*	Max.	Unit	Condition
Current Transfer ratio	817	50	-	600	%	I _F = 5mA, V _{CE} = 5V
	817A	80	-	160		
	817B	130	-	260		
	817C	200	-	400		
	817D	300	-	600		
	817L	50	-	100		
Collector-Emitter saturation voltage	V _{CE(sat)}		0.1	0.2	V	I _F = 20mA, I _C = 1mA
Isolation resistance	R _{ISO}	5×10 ¹⁰			Ω	V _{IO} = 500Vdc, 40~60% R.H
Floating capacitance	C _f		0.6	1.0	pF	V _{IO} = 0, f = 1MHz
Cut-off frequency	f _c		35		kHz	V _{CE} = 5V, I _C = 2mA R _L = 100Ω, -3dB
Rise time	t _r		4	18	μs	V _{CE} = 2V, I _C = 2mA, R _L = 100Ω
Fall time	t _f		3	18	μs	

Typical values at Ta = 25°C

Typical Performance Curves

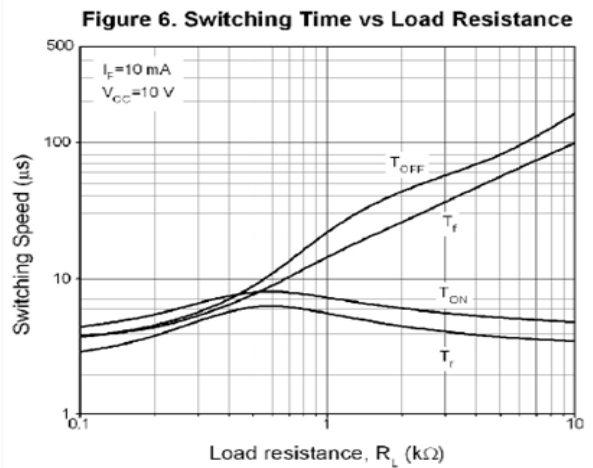
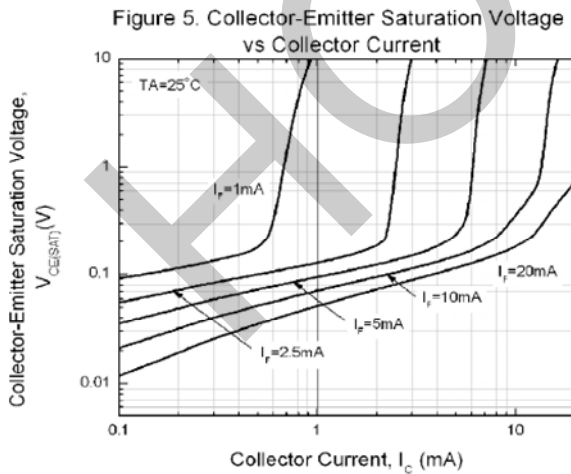
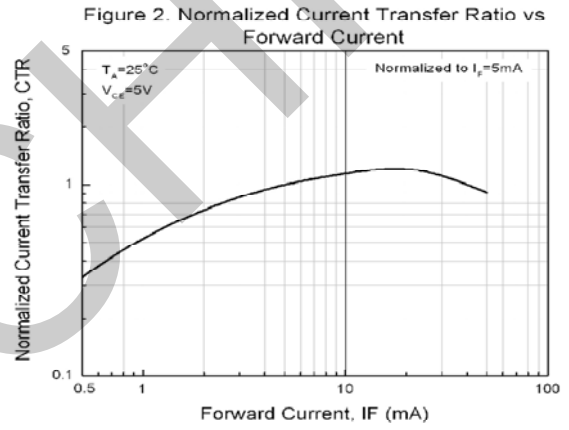
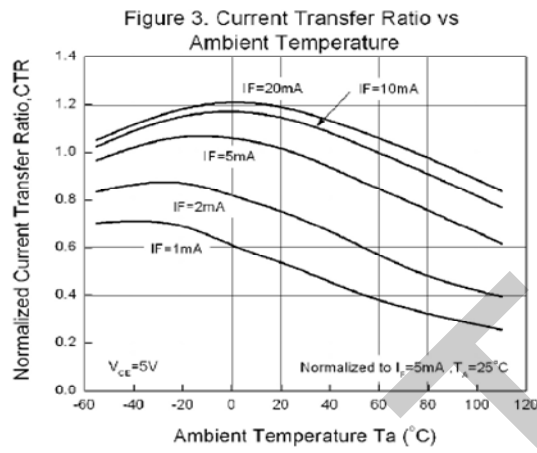
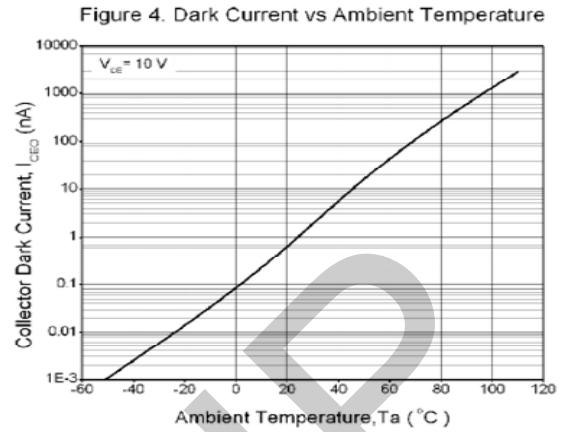
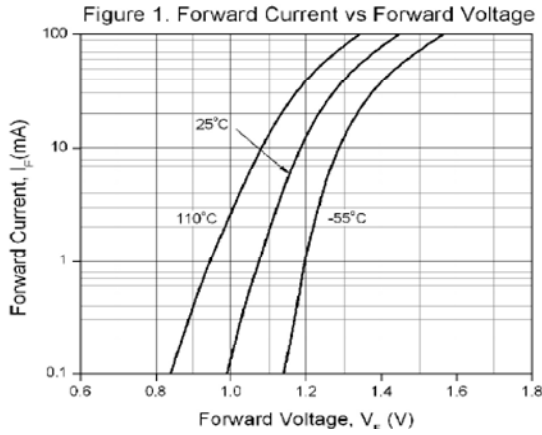
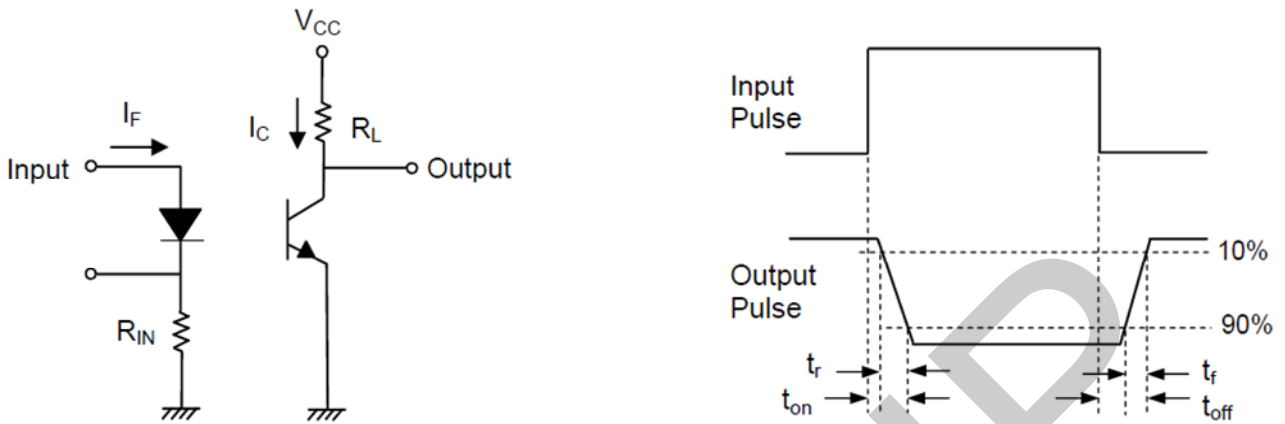
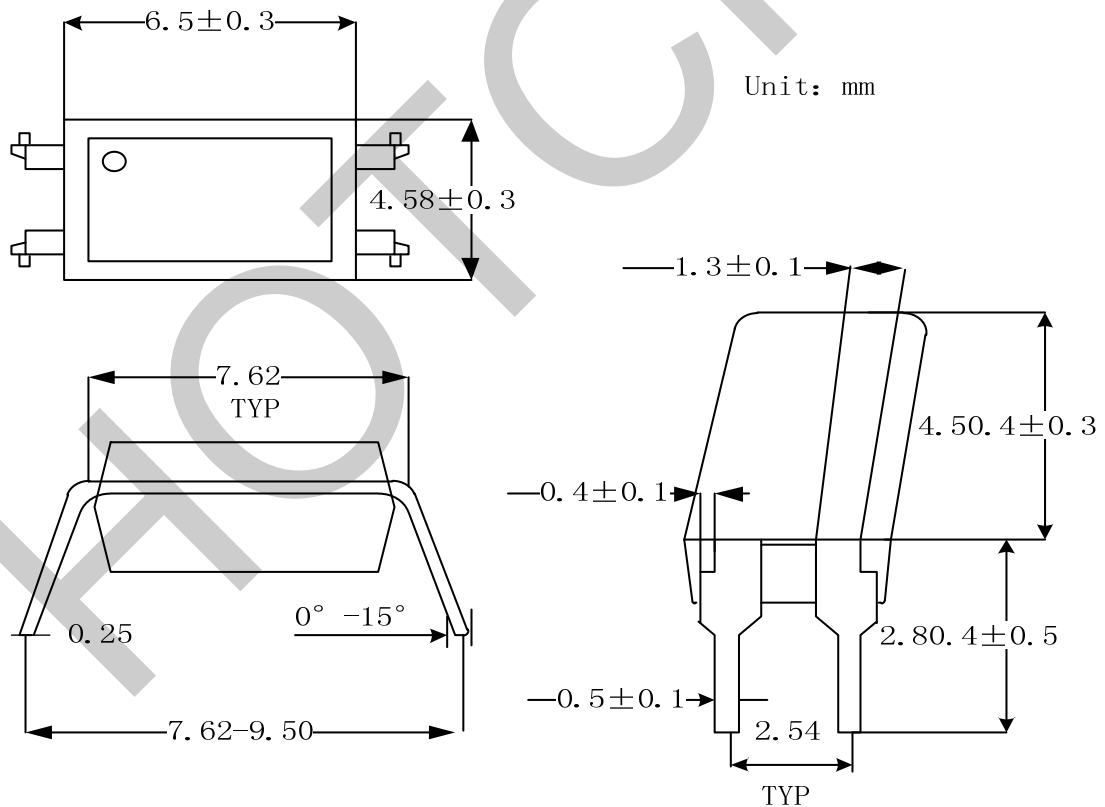


Figure:7. Switching Time Test Circuit & Waveforms



Package Drawing(Dimensions in mm)

Standard DIP Type



Option SOT Type