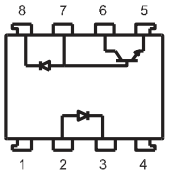
Schematic:



For dimensions and pin-outs, see the last page of this document.

Features:

1. High speed response t_{PLH} , t_{PHL} (MAX.1.5us at RL=4.1kΩ)
2. High common mode rejection voltage (CM:TYP.1kV/us)
3. Standard dual-in-line package

Ordering:

Suffix to Standard Part Number

- V = VDE Approved
- G = 10mm Lead Spread
- S = Surface Mount Lead-form
- T = Tape & Reel

Applications:

- Computers,measuring instruments, control equipment.
- High speed line receivers high speed logic.
- Telephone sets.
- Signal transmission between circuits of different potentials and impedances.

Absolute Maximum Ratings:

(Ta=25℃)

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	25	mA
	*1 Peak forward current	I_F	50	mA
	*2 Peak transient forward current	I_{FM}	1	A
	Reverse voltage	V_R	5	V
	Power dissipation	P	45	mW
Output	Supply voltage	Vcc	-0.5 to 15	V
	Output voltage	Vo	-0.5 to 15	V
	Emitter-base reverse with-stand voltage (Pin 5 to 7)	V_{EBO}	5	V
	Average output current	Io	8	mA
	Peak output current	Iop	16	mA
	Base current (Pin 7)	I_B	5	mA
	Power dissipation	Po	100	mW
*3 Isolation voltage 1 minute		Viso	2500	Vrms
Operating temperature		Topr	-55 to +100	°C
Storage temperature		Tstg	-55 to +125	°C
*4 Soldering temperature		Tsol	260	°C

*1 50% duty cycle,Pulse width : 1mS
Decreases at the rate of 1.6mA/℃ if the external temperature is 70℃ or more.
*2 Pulse width<=1uS,300pulse/sec
*3 40 to 60% RH,AC for 1 minute
*4 For 10 seconds

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Electrical Characteristics:

(Ta=0 to +70℃ unless otherwise specified)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
*5 Current transfer ratio	CTR (1)	Ta= 25℃, IF=16mA Vo = 0.4V , Vcc = 4.5V	7	40	-	%
	CTR (2)	IF=16mA Vo = 0.5V , Vcc = 4.5V	5	43	-	%
Logic (0) output volage	VOL	*6 Vcc = 4.5V,I F=16mA	-	0.1	0.4	V
Logic (1) output current	I OH(1)	Ta= 25℃, IF=0 Vo = Vcc = 5.5V	-	3.0	500	nA
	I OH(2)	Ta'= 25℃, IF=0 Vo = Vcc = 15V	-	0.01	1.0	uA
	I O (8)	Vcc = Vo = 15V,I F=0	-	-	50	uA
Logic (0) supply current	I CCL	IF=16mA Vo = open , Vcc = 15V	-	200	-	uA
Logic (1) supply current	I CCH(1)	Ta= 25℃, IO=0 VF = open , Vcc = 15V	-	0.02	1.0	uA
	I CCH(2)	IO=0 Vo = open , Vcc = 15V	-	-	2.0	uA
Input forward voltage	VF	Ta= 25℃, IF=16mA	-	1.7	1.95	V
Input forward voltage temperature coefficient	△VF/△Ta	IF =16mA	-	-1.9	-	mV/℃
Input reverse voltage	BAR	Ta=25℃, IR=10uA	5.0	-	-	V
Input capacitance	CIN	VF=0 , f=1MHz	-	60	-	pF
*7 Leak current(input-output)	I I-O	Ta= 25℃, 45 % RH VI-O=3kVDC , t = 5s	-	-	1.0	uA
*7 Isolation resistance(input-output)	RI-O	VI-O=500VDC	-	10^{12}	-	Ω
*7 Capacitance(input-output)	CI-O	f=1MHz	-	0.6	-	pF
Transistor current amplification factor	hFE	Vo = 5V , Io = 3mA	-	70	-	

*5 Current transfer ratio is the ratio of input current and output current expressed in %
*6 Io = 1.1mA
*7 Measured as 2-pin element (Short 1,2,3,4 and 5,6,7,8)

Switching Characteristics

(Ta=25℃,Vcc=5V,I F=16mA)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
*8 *9 Propagation delay time Output (1)–>(0)	t PHL	RL= 4.1kΩ	-	0.3	1.5	uS
*8 *9 Propagation delay time Output (0)–>(1)	t PLH	RL= 4.1kΩ	-	0.4	1.5	uS
*10 *11 Instantaneous common mode rejection voltage "Output (1)"	CMH	I F=0,V C=M10V p-p	-	1000	-	V/uS
*10 *11 Instantaneous common mode rejection voltage "Output (0)"	CML	I F=16mA,VCM=10Vp-p	-	-1000	-	V/uS
*12 Bandwidth	BW	RL= 100Ω	-	2.0	-	MHz

*8 R L=4.1kΩ is equivalent to one LSTTL and 6.1kΩ pull-up resistor.
*10 Instantaneous common mode rejection voltage "output(1)" represents a common mode voltage variation that can hold the output above (1) level (Vo > 2.0V)
Instantaneous common mode rejection voltage "output(0)" represents a common mode voltage variation that can hold the output above (0) level (Vo < 0.8V)
*12 Bandwidth represents a point where AC input gose down by 3dB.

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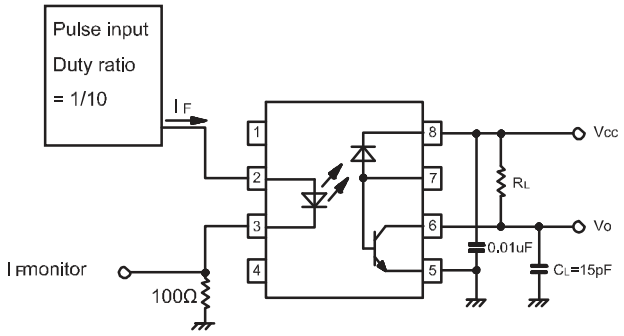
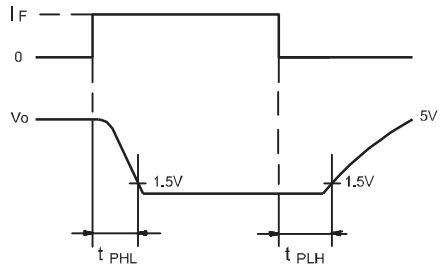
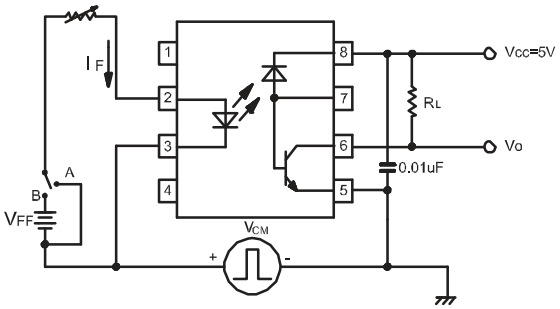
*9 Tset Circuit Propagation Delay Time





*11 Tset CIrcult for Instantaneous Common Mode Rejectlon Voltage



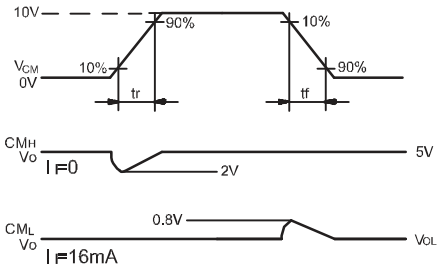
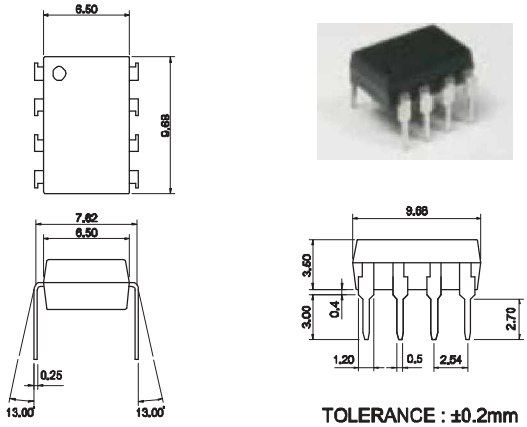
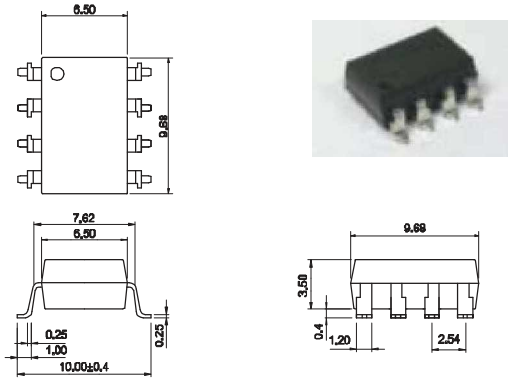


Fig.7 : 8-pin DIP type



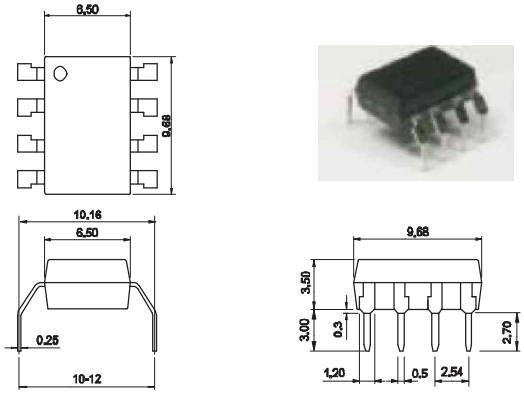
TOLERANCE : ±0.2mm

Fig.8 : 8-pin SMD type



TOLERANCE : ±0.2mm

Fig.9 : 8-pin G type



TOLERANCE : ±0.2mm