

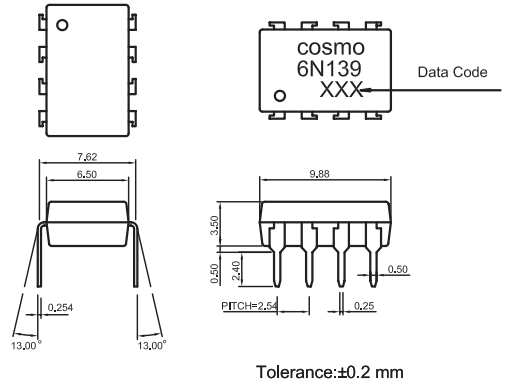
**Features**

1. High current transfer ratio  
(CTR:MIN.500% at  $I_F=1.6mA$ )
2. High speed response  
( $t_{PHL.TYP.0.2\mu s}$  at  $R=270\Omega$ )
3. High common mode rejection voltage ( $CM_H.TYP500V/\mu s$ )
4. TTL compatible output

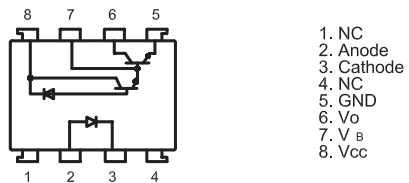
**Applications**

1. Interfaces for computer peripherals
2. Computers, measuring instruments, control equipment
3. Telephone sets.
4. Signal transmission between circuits of different potentials and impedances.

**Outside Dimension:Unit (mm)**



**Schematic:Top View**



**Absolute Maximum Ratings**

( $T_a=25^\circ C$ )

Parameter		Symbol	Rating	Unit
Input	Forward current	$I_F$	20	mA
	*1 Peak forward current	$I_F$	40	mA
	*2 Peak transient forward current	$I_{FM}$	1	A
	Reverse voltage	$V_R$	5	V
	Power dissipation	P	35	mW
Output	Supply voltage	$V_{CC}$	-0.5 to 18	V
	Output voltage	$V_o$	-0.5 to 18	V
	Emitter-base reverse withstand voltage (Pin 5 to 7)	$V_{EBO}$	0.5	V
	*3 Average output current	$I_o$	60	mA
	Power dissipation	$P_o$	100	mW
*4 Isolation voltage	$V_{iso}$	2500	Vrms	
Operating temperature	$T_{opr}$	0 to +70	$^\circ C$	
Storage temperature	$T_{stg}$	-55 to +125	$^\circ C$	
*5 Soldering temperature	$T_{sol}$	260	$^\circ C$	

\*1 50% duty cycle,Pulse width : 1ms

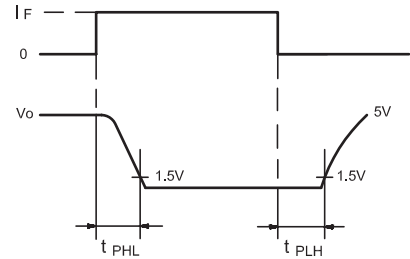
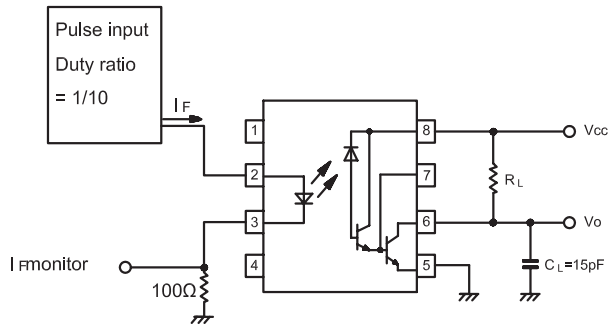
\*2 Pulse width≤1us,300pps

\*3 Decreases at the rate of 0.7mA/ $^\circ C$  if the external temperature is more than 25 $^\circ C$ .

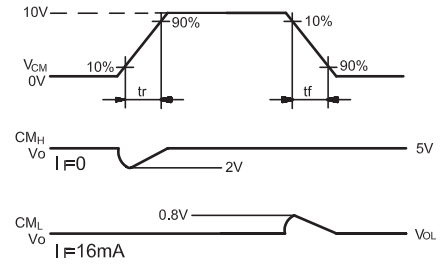
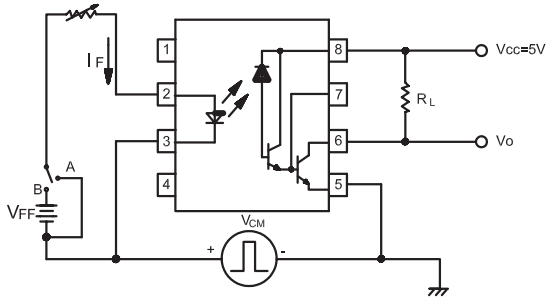
\*4 40 to 60% RH,AC for 1 minute

\*5 For 10 seconds

\*8 Tset Circuit Propagation Delay Time



\*10 Tset Circuit for Instantaneous Common Mode Rejection Voltage



### Electro-optical Characteristics

(Ta=0 to +70°C unless otherwise specified )

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
*6 Current transfer ratio	CTR(1)	I <sub>F</sub> =0.5mA, V <sub>o</sub> =0.4V, V <sub>cc</sub> =4.5V	400	1800	-	%
	CTR(2)	I <sub>F</sub> =1.6mA, V <sub>o</sub> =0.4V, V <sub>cc</sub> =4.5V	500	1600	-	%
Logic (0) output voltage	VoL(1)	I <sub>F</sub> =6.4mA, I <sub>o</sub> =1.6mA, V <sub>cc</sub> =4.5V	-	0.1	0.4	V
	VoL(2)	I <sub>F</sub> =5mA, I <sub>o</sub> =15mA, V <sub>cc</sub> =4.5V	-	0.1	0.4	V
	VoL(3)	I <sub>F</sub> =12mA, I <sub>o</sub> =24mA, V <sub>cc</sub> =4.5V	-	0.1	0.4	V
Logic (1) output current	I <sub>OH</sub>	I <sub>F</sub> =0, V <sub>cc</sub> =V <sub>o</sub> =18V	-	0.05	100	uA
Logic (0) supply current	I <sub>CCL</sub>	I <sub>F</sub> =1.6mA, V <sub>cc</sub> =5V, V <sub>o</sub> =open	-	0.5	-	mA
Logic (1) supply current	I <sub>CCH</sub>	I <sub>F</sub> =0, V <sub>cc</sub> =5V, V <sub>o</sub> =open	-	10	-	nA
Input forward voltage	V <sub>F</sub>	I <sub>F</sub> =1.6mA, Ta=25°C	-	1.5	1.7	V
Input forward voltage temperature coefficient	ΔV <sub>F</sub> /ΔTa	I <sub>F</sub> =1.6mA	-	-1.9	-	mV/°C
Input reverse voltage	BV <sub>R</sub>	I <sub>R</sub> =10uA, Ta=25°C	5.0	-	-	V
Input capacitance	C <sub>IN</sub>	V <sub>F</sub> =0, f=1MHz	-	60	-	pF
*7 Leak current(input-output)	I <sub>I-O</sub>	V <sub>I-O</sub> =3kV DC, 45%RH, t=5s, Ta=25°C	-	-	1.0	uA
*7 Isolation resistance(input-output)	R <sub>I-O</sub>	V <sub>I-O</sub> =500V DC	-	10 <sup>12</sup>	-	Ω
*7 Capacitance(input-output)	C <sub>I-O</sub>	f=1MHz	-	0.6	-	pF

\*6 Current transfer ratio is a ratio of input current and output current expressed in %.

\*7 Measured as 2-pin element ( Short 1, 2, 3, 4 and 5, 6, 7, 8 )

### Switching Characteristics

(Ta=25°C, Vcc=5V)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
*8 Propagation delay time Output (1)-->(0)	t <sub>PHL</sub>	R <sub>L</sub> =4.7kΩ, I <sub>F</sub> =0.5mA	-	5	25	uS
		R <sub>L</sub> =270Ω, I <sub>F</sub> =12mA	-	0.3	1	uS
*8 Propagation delay time Output (0)-->(1)	t <sub>PLH</sub>	R <sub>L</sub> =4.7kΩ, I <sub>F</sub> =0.5mA	-	10	60	uS
		R <sub>L</sub> =270Ω, I <sub>F</sub> =12mA	-	1.5	7	uS
*9 *10 Instantaneous common mode rejection voltage "Output (1)"	C <sub>MH</sub>	I <sub>F</sub> =0, V <sub>CM</sub> =10V <sub>p-p</sub> , R <sub>L</sub> =2.2kΩ	-	500	-	V/uS
*9 *10 Instantaneous common mode rejection voltage "Output (0)"	C <sub>ML</sub>	I <sub>F</sub> =1.6mA, V <sub>CM</sub> =10V <sub>p-p</sub> , R <sub>L</sub> =2.2kΩ	-	-500	-	V/uS

\*9 Instantaneous common mode rejection voltage "output(1)" represents a common voltage variation that can hold the output above (1) level ( V<sub>o</sub>>2.0V ).

\*10 Instantaneous common mode rejection voltage "output(1)" represents a common voltage variation that can hold the output above (0) level ( V<sub>o</sub><0.8V ).