

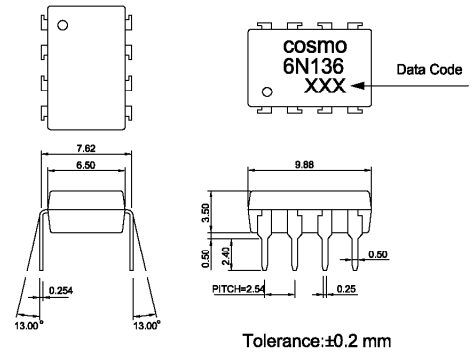
**Features**

1. High speed response  $t_{PLH}$ ,  $t_{PHL}$   
(MAX.0.8us at  $R_L=1.9k\Omega$ )
2. High common mode rejection voltage  
(CM:TYP.1kV/us)
3. Standard dual-in-line package
4. Recognized by UL, file No.

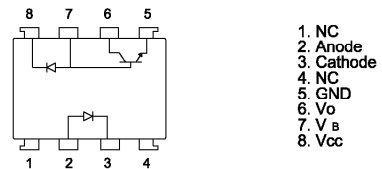
**Applications**

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

**Outside Dimension:Unit (mm)**



**Schematic:Top View**



**Absolute Maximum Ratings**

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

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	$V_{CC}$	-0.5 to 15	V
	Output voltage	$V_o$	-0.5 to 15	V
	Emitter-base reverse with-stand voltage (Pin 5 to 7)	$V_{EBO}$	5	V
	Average output current	$I_o$	8	mA
	Peak output current	$I_{op}$	16	mA
	Base current ( Pin 7 )	$I_B$	5	mA
	Power dissipation	$P_o$	100	mW
*3 Isolation voltage 1 minute		$V_{iso}$	2500	Vrms
Operating temperature		$T_{opr}$	-55 to +100	$^\circ\text{C}$
Storage temperature		$T_{stg}$	-55 to +125	$^\circ\text{C}$
*4 Soldering temperature		$T_{sol}$	260	$^\circ\text{C}$

\*1 50% duty cycle,Pulse width : 1mS  
Decreases at the rate of  $1.6\text{mA}/^\circ\text{C}$  if the external temperature is  $70^\circ\text{C}$  or more.  
\*2 Pulse width $\leq 1\mu\text{S}$ ,300pulse/sec  
\*3 40 to 60% RH,AC for 1 minute  
\*4 For 10 seconds

**Electro-optical Characteristics**

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

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
*5 Current transfer ratio	CTR (1)	Ta= 25°C , IF= 16mA Vo = 0.4V , Vcc = 4.5V	19	40	-	%
	CTR (2)	IF= 16mA Vo = 0.5V , Vcc = 4.5V	15	43	-	%
Logic (0) output voltage	VOL	*6 Vcc = 4.5V, I F = 16mA	-	0.1	0.4	V
Logic (1) output current	IOH(1)	Ta= 25°C , IF= 0 Vo = Vcc = 5.5V	-	3.0	500	nA
	IOH(2)	Ta'= 25°C , IF= 0 Vo = Vcc = 15V	-	0.01	1.0	uA
	IOH(3)	Vcc = Vo = 15V, I F = 0	-	-	50	uA
Logic (0) supply current	ICCL	IF = 16mA Vo = open , Vcc = 15V	-	200	-	uA
Logic (1) supply current	ICCH(1)	Ta = 25°C , IO = 0 Vf = open , Vcc = 15V	-	0.02	1.0	uA
	ICCH(2)	IO = 0 Vo = open , Vcc = 15V	-	-	2.0	uA
Input forward voltage	Vf	Ta = 25°C , IF = 16mA	-	1.7	1.95	V
Input forward voltage temperature coefficient	$\Delta V_f / \Delta T_a$	IF = 16mA	-	-1.9	-	mV/°C
Input reverse voltage	BVR	Ta = 25°C , IR = 10uA	5.0	-	-	V
Input capacitance	CIN	Vf=0 , f=1MHz	-	60	-	pF
*7 Leak current(input-output)	II-O	Ta = 25°C , 45 % RH VI-O= 3kVDC , t = 5s	-	-	1.0	uA
*7 Isolation resistance(input-output)	RI-O	VI-O= 500VDC	-	10 <sup>12</sup>	-	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 = 2.4mA

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

**Switching Characteristics**

(Ta=25°C, Vcc=5V, I =16mA)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
*8 Propagation delay time Output (1)-->(0)	t PHL	RL=1.9kΩ	-	0.3	0.8	uS
*8 Propagation delay time Output (0)-->(1)	t PLH	RL=1.9kΩ	-	0.3	0.8	uS
*10 Instantaneous common mode rejection voltage "Output (1)"	CMH	IF=0, VCM=10Vp-p	-	1000	-	V/uS
*11 Instantaneous common mode rejection voltage "Output (0)"	CML	IF=16mA, VCM=10Vp-p	-	-1000	-	V/uS
*12 Bandwidth	BW	RL=100Ω	-	2.0	-	MHz

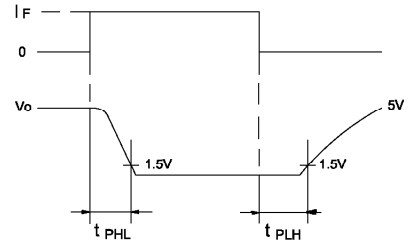
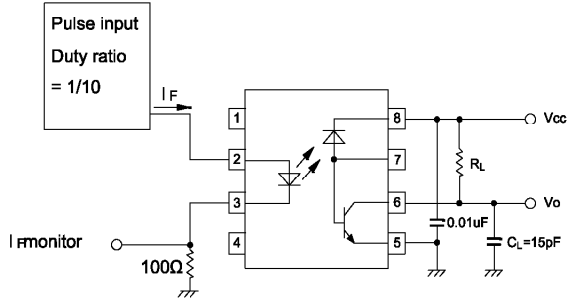
\*8 RL=1.9kΩ is equivalent to one LSTTL and 5.6kΩ pull-up resistor.

\*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 goes down by 3dB.

\*9 Tset Circuit Propagation Delay Time



\*11 Tset Circuit for Instantaneous Common Mode Rejection Voltage

