ISOCOUPLER®
WPPC-D11D0088 Series

Features

1. High speed response t_{PHL}, t_{PLH}
   (Max. 0.8uS at R_L = 1.9kohms)
2. High common mode rejection voltage.
   (CM_H: TYP. 1kV/uS)
3. Standard dual-in-line package.
4. Available package types: DIP(shown)/ SMD/ H (Page: 148).

   Part Numbering System: Page 2. **Part Marking System:** Page 3.

Outside Dimension: Unit (mm)

9.88
7.62
6.50
3.50
2.40
0.5
Pitch = 2.54
0.5
0.25
0.254
13.00°
13.00°

Tolerance: ± 0.2mm

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.
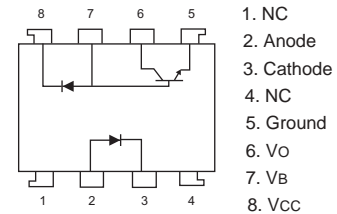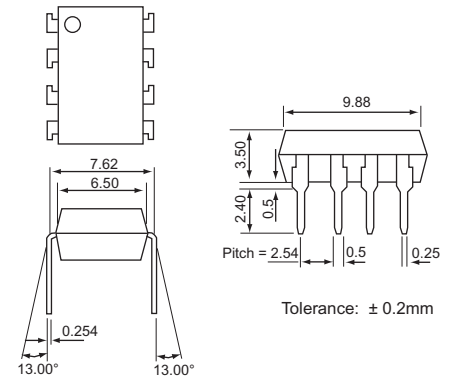
1. NC
2. Anode
3. Cathode
4. NC
5. Ground
6. V_O
7. V_B
8. V_{CC}

Absolute Maximum Ratings

(Ta=25°C)

	Parameter	Symbol	Rating	Unit
Input	Forward current	I_F	25	mA
	Peak transient forward current[1]	I_{FM}	1	A
	Reverse voltage	V_R	5	V
	Power dissipation	P_D	45	mW
Output	Supply voltage & Output voltage	V_{CC} & V_O	-0.5 to +15	V
	Emitter-base reverse with-stand voltage (Pin 5 to 7)	V_{EBO}	5	V
	Average ouput current, Peak output current	I_O, I_{OP}	8, 16	mA
	Base current (Pin 7)	I_B	5	mA
	Power dissipation	P_O	100	mW
	Isolation voltage 1 minute[2]	Viso	2500	Vrms
	Operating temperature	Topr	-55 to +100	°C
	Storage temperature	Tstg	-55 to +125	°C
	Soldering temperature 10 second[3]	Tsol	260	°C

1. Pulse width <=1uS, 300 pulse/sec. Peak forward current, 50mA, 50% duty cycle, Pulse width 1mS, Decrease at the rate of 1.6mA/°C if the external termpature is 70°C or more.
2. 40 to 60% RH, AC for 1 minute.
3. For 10 seconds.

USR/CNR Listed (File # 223387)
VDE (File # 40009585)

Electro-optical Characteristics

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

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Current transfer ratio [1]	CTR(1)	Ta = 25°C, I_F = 16mA V_O = 0.4V, V_{CC} = 4.5V	19	40	-	%
	CTR(2)	I_F = 16mA, V_O = 0.5V, V_{CC} = 4.5V	15	43	-	%
Logic (0) output voltage	V_{OL}	[2] V_{CC} = 4.5V, I_F = 16mA	-	0.1	0.4	V
Logic (1) output current	$I_{OH}(1)$	Ta = 25°C, I_F = 0 V_O = V_{CC} = 5.5V	-	3.0	500	nA
	$I_{OH}(2)$	Ta = 25°C, I_F = 0 V_O = V_{CC} = 15	-	0.01	1.0	uA
	$I_{OH}(3)$	V_{CC} = V_O = 15V, I_F = 0	-	-	50	uA
Logic (0) supply current	I_{CCL}	I_F = 16mA V_O = open, V_{CC} = 15V	-	200	-	uA
Logic (1) supply current	$I_{CCH}(1)$	Ta = 25°C, I_O = 0 V_F = open, V_{CC} = 15V	-	0.02	1.0	uA
	$I_{CCH}(2)$	I_O = 0 V_O = open, V_{CC} = 15V	-	-	2.0	uA
Input forward voltage	V_F	Ta = 25°C, I_F = 16mA	-	1.7	1.95	V
Input forward voltage temperature coefficient	$\Delta V_F / \Delta Ta$	I_F = 16mA	-	-1.9	-	mV/°C
Input reverse voltage	BV_R	Ta = 25°C, I_R = 10uA	5.0	-	-	V
Input capacitance	C_{IN}	V_F = 0, f = 1MHz	-	60	-	pF
Leak current (input-output) [3]	I_{I-0}	Ta = 25°C, 45%RH V_{I-0} = 3kVDC, t = 5s	-	-	1.0	uA
Isolation resistance (input-output) [3]	R_{I-0}	V_{I-0} = 500VDC	-	10^{12}	-	Ω
Capacitance (input-output) [3]	C_{I-0}	F = 1MHz	-	0.6	-	pF
Transistor current amplification factor	h_{FE}	V_O = 5V, I_O = 3mA	-	70	-	

1.   Current transfer ratio is the ratio of input current and output current expressed in %.
2. I_O = 2.4mA
3.   Measured as 2-pin element (Short 1, 2, 3, 4 and 5, 6, 7, 8).

Switching Characteristics

(Ta = 25°C, V_{CC} = 5V, I_F = 16mA)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Propagation delay time [1,4] Output (1) → (0)	tPHL	R_L = 1.9kohms	-	0.3	0.8	uS
Propagation delay time [1,4] Output (0) → (1)	tPLH	R_L = 1.9kohms	-	0.3	0.8	uS
Instantaneous common mode rejection voltage [2,5] Output (1)	CMH	I_F = 0, V_{CM} = 10V_{P-p}	-	1000	-	V/uS
Instantaneous common mode rejection voltage [2,5] Output (0)	CML	I_F = 16mA, V_{CM} = 10V_{P-p}	-	-1000	-	V/uS
Bandwidth [3]	BW	R_L = 100ohms	-	2.0	-	MHz

1.   R = 1.9kohms is equivalent to one LSTTL and 5.6kohms pull-up resistor.
2.   Instantaneous common mode rejection voltage "output(1)" represents a common voltage variation that can hold the output above(1) level (Vo > 2.0V).
     Instantaneous common mode rejection voltage "output (0)" represents a common voltage variation that can hold the output above (0) level (Vo < 0.8V).
3.   Bandwidth represents a point where AC input goes down by 3dB.
4.   Tset Circuit Propagation Delay Time.
5.   Tset Circuit for Instantaneous Common Mode Rejection Voltage