ISOCOUPLER™
WPPC-D220358 Series

High Reliability Photo Coupler
DIP/SMD/H

USR/CNR Listed (File# E223387)

Features

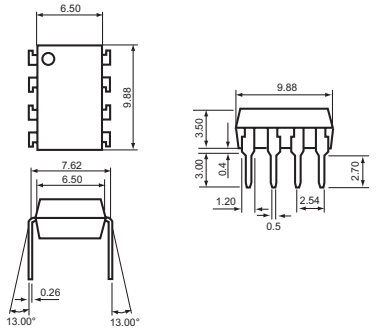
1. High current transfer ratio.
   (CTR: MIN. 600% at I_F = 1mA, V_{CE} = 2V)
2. High isolation voltage between input and output
   (Viso: 5000Vrms).
3. Compact dual-in-line package.
4. Available package types: DIP(shown)/ SMD/ H(Page 4).

Applications

2. System appliances, measuring instruments.
2. Industrial robots.
3. Copiers, automatic vending machines.
7. Signal transmission between circuits of different potentials and impedances.

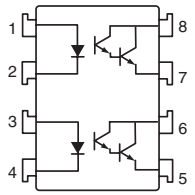
Part Numbering System: Page 1. **Part Marking System:** Page 1.

Outside Dimension: Unit (mm)



Tolerance: ±0.2mm

Schematic: Top View



1, 3 Anode
2, 4 Cathode
5,7 Emitter
6, 8 Collector

Absolute Maximum Ratings

(Ta = 25°C)

Parameter		Symbol	Rating	Unit
Input	Forward Current	I_F	50	mA
	Peak Forward Current	I_{FM}	1	A
	Reverse Voltage	V_R	6	V
	Power Dissipation	P_D	70	mW
Output	Collector-emitter voltage	V_{CEO}	35	V
	Emitter-collector voltage	V_{ECO}	6	V
	Collector current	I_C	80	mA
	Collector power dissipation	P_C	150	mW
Total Power Dissipation		Ptot	200	mW
Isolation Voltage 1 minute		Viso	5000	Vrms
Operating Temperature		Topr	-30 to +100	°C
Storage Temperature		Tstg	-55 to +125	°C
Solder Temperature 10 seconds		Tsol	260	°C

Electro-optical Characteristics

(Ta = 25°C)

Parameter		Symbol	Conditions	Min.	Typ.	Max.	Unit
Input	Forward Voltage	V_F	I_F = 20mA	-	1.2	1.4	V
	Peak Forward Voltage	V_{FM}	I_{FM} = 0.5A	-	-	3.5	V
	Reverse Current	I_R	V_R = 4V	-	-	10	uA
	Terminal Capacitance	C_t	V = 0, f = 1kHz	-	30	250	pF
Output	Collector dark current	I_{CEO}	V_{CE} = 10V, I_F = 0	-	-	1.0	uA
Transfer Characteristics	Current transfer ratio	CTR	I_F = 1mA, V_{CE} = 2V	600	-	7500	%
	Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_F = 20mA, I_C = 5mA	-	0.8	1.0	V
	Isolation resistance	Riso	DC500V, 40 to 60% RH	5×10^{10}	-	-	ohm
	Floating capacitance	C_f	V = 0, f = 1MHz	-	0.6	1.0	pF
	Cut-off frequency	fc	V_{CC} = 2V, I_C = 20mA, R_L = 100Ω	1	6	-	kHz
	Response time (Rise)	tr	Vce = 2V, I_C = 20mA, R_L = 100Ω	-	80	300	us
	Response time (Fall)	tf		-	72	250	us

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Data Curves

Rank	CTR(%)
E	600-7500

Fig.1 Forward Current vs. Ambient Temperature

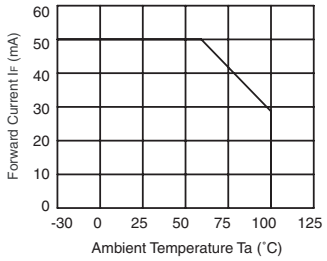


Fig.2 Collector Power Dissipation vs. Ambient Temperature

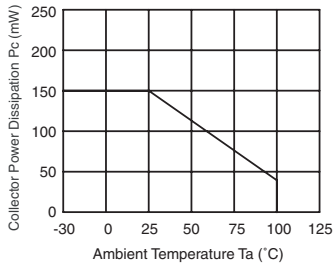


Fig.3 Collector-emitter Saturation Voltage vs. Forward Current

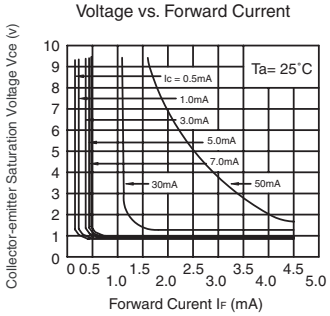


Fig.4 Forward Current vs. Forward Voltage

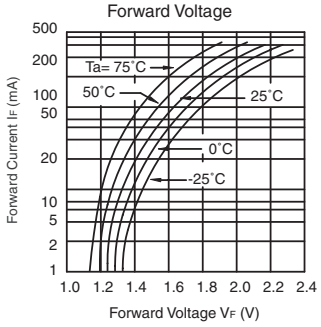


Fig.5 Current Transfer Ratio vs. Forward Current

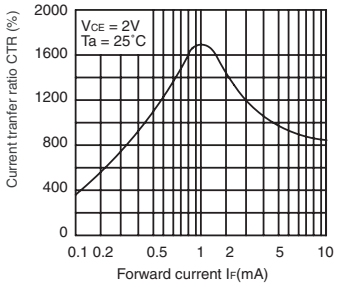


Fig.6 Collector Current vs. Collector-emitter Voltage

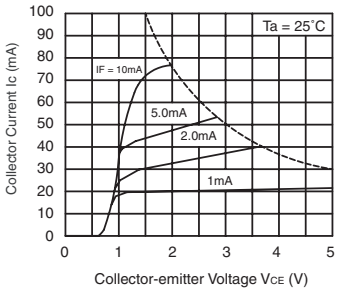


Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

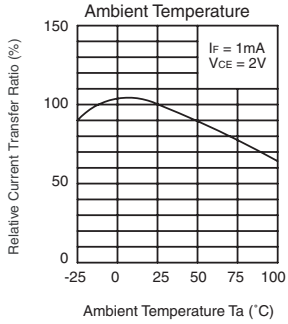


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

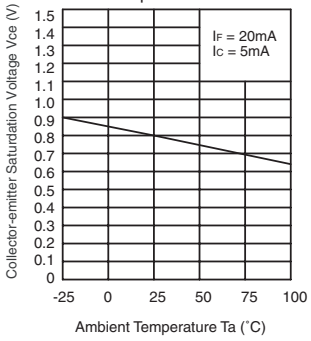


Fig.9 Collector Dark Current vs. Ambient Temperature

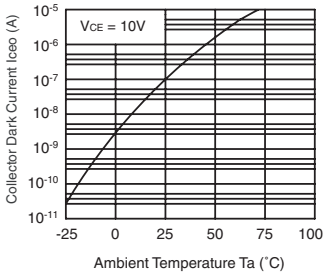
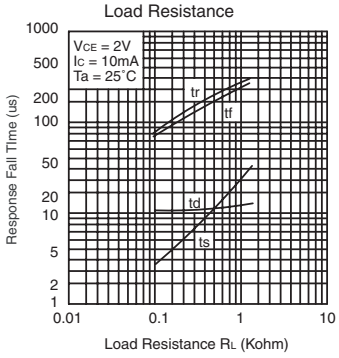


Fig.10 Response Time vs. Load Resistance



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Part Numbering System

STANDARD, DIGITAL HIGH SPEED, SOP, & SSOP

Example Part Number:

WPPC - D 2 2 035 8 E D - TRU
(1) (2) (3) (4) (5) (6) (7) (8) (9)

(1) Photo Coupler

(2) Input
- A: AC
- D: DC

(3) Channel
- 1: 1 Channel
- 2: 2 Channels
- 4: 4 Channels

(4) Output Configuration
- 1: Single Photo Transistor
- 2: Darlington Photo Transistor
- 3: (6-pin only) Single Photo Transistor without base terminal

(5) Ouput Type

Collector Emitter Voltage
- 03: 30V (V_{CEO})
- 035: 35V (V_{CEO})
- 06: 60V (V_{CEO})
- 08: 80V (V_{CEO})
- 30: 300V (V_{CEO})

Propagation Delay Time
- D008: 1M bit/s*
- D015: 1M bit/s*
- D35: High Gain Split PD*
- D60: High Gain Split PD*

*Digital High Speed Parts: code denotes max propagation delay

(6) Pin Configuration
- 4: 4 pin
- 6: 6 pin
- 8: 8 pin
- 16: 16 pin

(7) CTR Ranking
- A
- B
- C
- D
- E = 600 to 7500
- F
- G

Note: No CTR Ranking for Digital High Speed Parts

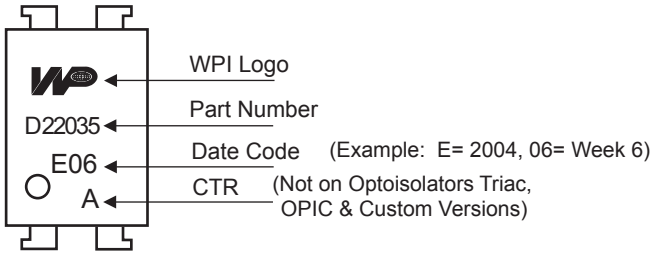
(8) Package Types
- D: DIP
- A: SMD
- S: SOP
- SS: SSOP
- H: Long Creepage Distance

(9) Taping
- TLD: Tape Direction Left
- TRU: Tape Direction Right

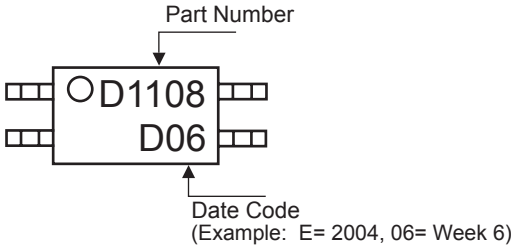
Not all combinations are available

Part Marking System

STANDARD

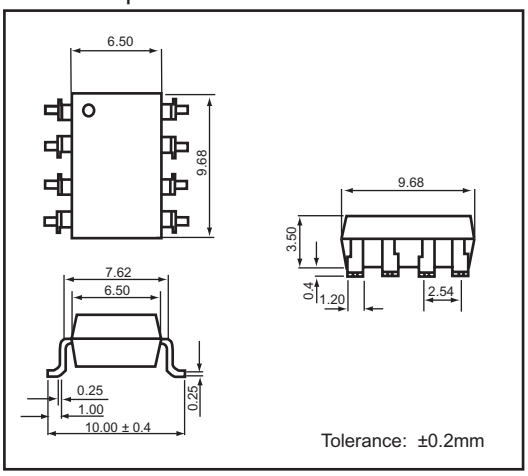


SSOP



Additional Package Types

SMD 8-pin



H 8-pin