



#### **DPC817 SERIES**

#### PHOTO COUPLER

#### **Product Summary**

BV <sub>CEO</sub> (V)	CTR (Min)	Isolation Voltage (V <sub>RMS</sub> )	Operating Temperature (°C)
35	50%	5000	-55 to +110

## **Mechanical Data**

- Package: DIP-4, MDIP-4, SL-4, SLM-4
- Package Material: Molded Plastic, "Green" Mold Compound. UL Flammability Classification 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 (€3)
- Polarity Indicator: Dots for Pin 1 Identification
- Weight: 0.216 grams (Approximate)

#### Features

- Current Transfer Ratio (CTR: min. 80% at IF = 5mA, VCE = 5V)
- High Input-Output Isolation Voltage (VISP = 5,000VRMS)
- Safety Approval UL1577 (No.E536221) CQC 4943.1-2022 (No.23001416084) VDE EN IEC 60747-5-5 (No.40058163)
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please <u>contact us</u> or your local Diodes representative. <u>https://www.diodes.com/quality/product-definitions/</u>





#### Ordering Information (Notes 4 & 5)

Port Number	Baakaga	Pac	Packing	
Fait Nulliber	Fackage	Qty.	Carrier	
DPC817D-x-TU	DIP-4	100pcs	Tube	
DPC817W-x-TU	MDIP-4	100pcs	Tube	
DPC817D-x-TU-V	DIP-4 (VDE parts)	100pcs	Tube	
DPC817W-x-TU-V	MDIP-4 (VDE parts)	100pcs	Tube	
DPC817S-x-TR	SL-4	2,000pcs	Reel	
DPC817L-x-TR1	SLM-4	2,000pcs	Reel	
DPC817S-x-TR-V	SL-4 (VDE parts)	2,000pcs	Reel	
DPC817L-x-TR1-V	SLM-4 (VDE parts)	2,000pcs	Reel	

Notes:

1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.

2. See https://www.diodes.com/quality/lead-free/ for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.

3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

4. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.

5. x is CTR rank, symbol: A, B, C, X, Y.

#### **Marking Information**



 $C_{i}^{+}$  = Manufacturer's Code Marking 817 = Product Type Marking Code Z = CTR Rank Code V = VDE Safety Mark Option YWW = Date Code Marking Y = Last Digit of Year (ex: 4 = 2024) WW = Week Code (01 to 53)



#### Maximum Ratings (@ T<sub>A</sub> = +25°C, unless otherwise specified.)

	Characteristic	Symbol	Rating	Unit
	Forward Current	lF	60	mA
	Reverse Voltage	VR	6	V
Input	Power Dissipation	PD	100	mW
	Peak Forward Current (<1µs Pulse Width, 300pps)	IFP	1	А
	Collector – Emitter Voltage	VCEO	35	V
Outrout	Emitter – Collector Voltage	V <sub>ECO</sub>	6	V
Output	Collector Current	lc	50	mA
	Collector Power Dissipation	Pc	150	mW
Total Power Dissipation		Ртот	200	mW
Isolation Voltage		VISO	5000	V <sub>RMS</sub>
Operating Temperature		TOPR	-55 to +110	°C
Storage Temperature		T <sub>STG</sub>	-55 to +125	°C
Soldering	Temperature	TSOL	+260	°C

# **Electrical Characteristics**

	Characteristic	Test Conditions	Symbol	Min	Тур	Max	Unit
	Forward Voltage	IF = 20mA	VF	_	1.25	1.5	V
Input	Reverse Current	$V_R = 4V$	IR	_	_	10	μA
	Terminal Capacitance	V = 0, f = 1kHz	Ст	_	30	—	pF
	Collector – Emitter Current	$V_{CE} = 20V, I_F = 0$	ICEO	_	_	50	nA
Output	Collector – Emitter Breakdown Voltage	$I_{C} = 0.1 Ma, I_{F} = 0$	BV <sub>CEO</sub>	35	_	—	V
	Emitter – Collector Breakdown Voltage	$I_E = 0.1 \text{mA}, I_F = 0$	BVECO	6	_	—	V
	Collector Current	IF = 5mA, VCE = 5V	lc	2.5	-	30	mA
	Current Transfer Ratio	IF = 5mA, VCE = 5V	Ctr	50	-	600	%
	Collector – Emitter Saturation Voltage	IF = 20mA, Ic = 1mA	VCE(SAT)		0.1	0.2	V
Transfer	Isolation Resistance	DC500V, 40% to 60% R.H.	Riso	5x10 <sup>10</sup>	1x10 <sup>11</sup>	—	Ω
Characteristics	Floating Capacitance	V = 0, f = 1MHz	CF	-	0.6	1	pF
	Cut-Off Frequency	$V_{CE} = 5V, R_L = 100\Omega$ Ic = 2mA, -3dB	fc		80	—	kHz
	Response Time (Rise)	$V_{CE} = 2V$ , $I_C = 2mA$	t <sub>R</sub>			18	μs
	Response Time (Fall)	R <sub>L</sub> = 100Ω	tF	_	—	18	μs

# Rank Table of Current Transfer Ratio (Note 6)

Characteristic	Test Condition	Symbol	Min	Мах	Unit
	IF = 5mA, Vce = 5V TA = +25°C	A	80	160	%
		В	130	260	%
CTR Rank		С	200	400	%
		Х	100	200	%
		Y	150	300	%

Note 6:  $CTR = \frac{IC}{IF} X \ 100\%$ 



#### **Characteristics Curves**





# **Package Outline Dimensions**

Please see http://www.diodes.com/package-outlines.html for the latest version.





DIP-4

	DIP-4				
Dim	Min	Max	Тур		
A2	3.20	3.80	3.50		
b	0.40	0.60	0.50		
С	0.15	0.35	0.25		
D	4.30	4.90	4.60		
Е	7.32	7.92	7.62		
E1	6.20	6.80	6.50		
eA	8.07	9.07	8.57		
е	2.29	2.79	2.54		
L	3.40	4.00	3.70		
L1	0.67	1.27	0.97		
All Dimensions in mm					

MDIP-4



MDIP-4				
Dim	Min	Max	Тур	
A2	3.20	3.80	3.50	
b	0.40	0.60	0.50	
С	0.15	0.35	0.25	
D	4.30	4.90	4.60	
Е	7.32	7.92	7.62	
E1	6.20	6.80	6.50	
eA	9.66	10.66	10.16	
е	2.29	2.79	2.54	
L	3.40	4.00	3.70	
L1	0.67	1.27	0.97	
All Dimensions in mm				



# Package Outline Dimensions (continued)

Please see http://www.diodes.com/package-outlines.html for the latest version.



SL-4				
Dim	Min	Max	Тур	
A1	0.00	0.30	0.15	
A2	3.20	3.80	3.50	
b	1.15	1.35	1.25	
c	0.15	0.35	0.25	
D	4.30	4.90	4.60	
ш	9.86	10.46	10.16	
E1	6.20	6.80	6.50	
e	2.29	2.79	2.54	
HE	7.32	7.92	7.62	
L	0.60			
aaa		0.10		
All Dimensions in mm				

SLM-4



SLM-4				
Dim	Min	Max	Тур	
A1	0.00	0.30	0.15	
A2	3.20	3.80	3.50	
b	1.15	1.35	1.25	
с	0.15	0.35	0.25	
D	4.30	4.90	4.60	
ш	11.50	12.10	11.88	
E1	6.20	6.80	6.50	
e	2.29	2.79	2.54	
HE	7.32	7.92	7.62	
L	0.60			
aaa		0.10		
All	Dimen	sions i	n mm	



# Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.



SL-4

Dimensions	Value (in mm)
С	2.54
C1	9.22
Х	1.50
Ŷ	1.60

SLM-4

Dimonsions	Value	
Dimensions	(in mm)	
С	2.54	
C1	10.86	
Х	1.50	
Y	1.60	



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