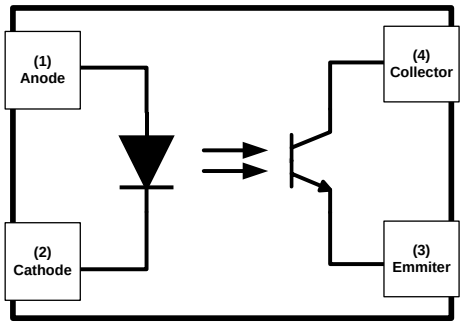
Product Summary

BV_{CEO} (V)	CTR (min)	Isolation Voltage (Vrms)	Operating Temperature (°C)
80	50%	5,000	-55~110



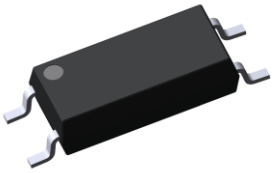
Features

- Current Transfer ratio (CTR: MIN. 50% at I_F=5mA, V_{CE}=5V)
- High input-output isolation voltage (V_{iso} = 5,000 Vrms)
- Safety Approval
  UL1577 (No. E536221)
  CQC 4943.1-2022 (No. 23001416005)
  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 contact us or your local Diodes representative.**
  https://www.diodes.com/quality/product-definitions/

Mechanical Data

- Package: LSOP-4 with 2.54mm pin pitch
- 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 e3
- Polarity Indicator: Dots for PIN 1 identification
- Weight: 0.128 grams (Approximate)

LSOP-4

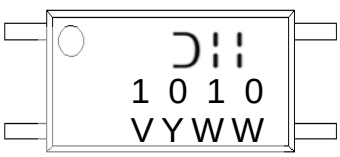


Ordering Information (Notes 4 & 5)

Part Number	Package	Packing	
		Qty.	Carrier
DPC101xS-TR	LSOP-4	3,000pcs	Reel
DPC101xS-TR-V	LSOP-4 (VDE parts)	3,000pcs	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: 2, 3, 4, 7, 8, 9

Marking Information



= Manufacturer's Code Marking
1010 = Product Type Marking Code, DPC1010 for example
V = VDE Safety mark option
Y = Last Digit of Year (ex: 4 = 2024)
WW = Week Code (01 to 53)

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Unit
Input	Forward Current	I_F	60	mA
	Reverse voltage	V_R	6	V
	Power Dissipation	P	100	mW
	Peak Forward Current (<1µs Pulse Width, 300pps)	I_{FP}	1	A
Output	Collector – Emitter Voltage	V_{CEO}	80	V
	Emitter – Collector Voltage	V_{ECO}	6	V
	Collector Current	I_C	50	mA
	Collector Power Dissipation	P_C	150	mW
Total Power Dissipation		P_{tot}	250	mW
Isolation Voltage		V_{iso}	5000	V_{RMS}
Operating Temperature		T_{opr}	-55 to 110	°C
Storage Temperature		T_{stg}	-55 to 125	°C
Soldering Temperature		T_{sol}	260	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic		Test Conditions		Symbol	Min.	Typ.	Max.	Unit
Input	Forward Voltage	I_F = 20mA		V_F	-	1.25	1.5	V
	Reverse Current	V_R = 4V		I_R	-	-	10	µA
	Terminal Capacitance	V = 0	f = 1KHz	C_t	-	30	-	pF
Output	Collector - Emitter Current	V_{CE} = 20V	I_F = 0	I_{CEO}	-	-	50	nA
	Collector - Emitter Breakdown Voltage	I_C = 0.1mA	I_F = 0	BV_{CEO}	80	-	-	V
	Emitter – Collector Breakdown Voltage	I_E = 0.1mA	I_F = 0	BV_{ECO}	6	-	-	V
Transfer Characteristics	Collector Current	I_F = 5mA	V_{CE} = 5V	I_C	2.5	-	30	mA
	Current Transfer Ratio	I_F = 5mA	V_{CE} = 5V	CTR	50	-	600	%
	Collector – Emitter Saturation Voltage	I_F = 20mA	I_C = 1mA	$V_{CE\ (sat)}$	-	0.1	0.2	V
	Isolation Resistance	DC500V	40~60% R.H.	R_{iso}	$5x10^{10}$	$1x10^{11}$	-	Ω
	Floating Capacitance	V = 0	f = 1MHz	C_f	-	0.6	1	pF
	Cut-off Frequency	V_{CE} = 5V R_L = 100Ω	I_C = 2mA -3dB	f_c	-	80	-	kHz
	Response Time (Rise)	V_{CE} = 2V R_L = 100Ω	I_C = 2mA	tr	-	-	18	µs
	Response Time (Fall)			tf	-	-	18	µs

Rank Table of Current Transfer Ratio (Note 6)

Characteristic	Test Condition		Symbol	Min.	Max.	Unit
CTR Rank	I_F = 10mA	V_{CE} = 5V	2	63	125	%
			3	100	200	%
			4	160	320	%
	I_F = 1mA	V_{CE} = 5V	2	22	-	%
			3	34	-	%
			4	56	-	%
	I_F = 5mA	V_{CE} = 5V	7	80	160	%
			8	130	260	%
			9	200	400	%

Note: 6. CTR = I_C / I_F x 100%

Characteristics Curves

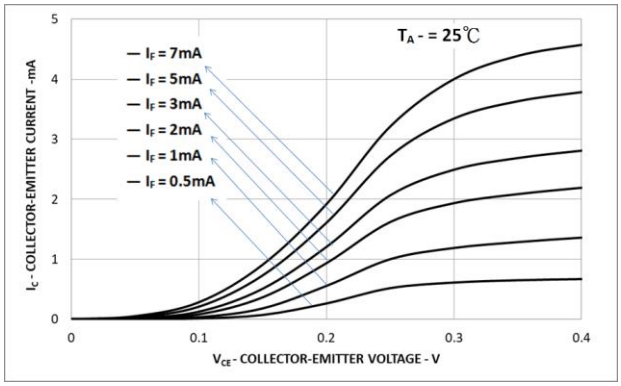


Figure 1. Collector-emitter Saturation Voltage vs. Forward Current

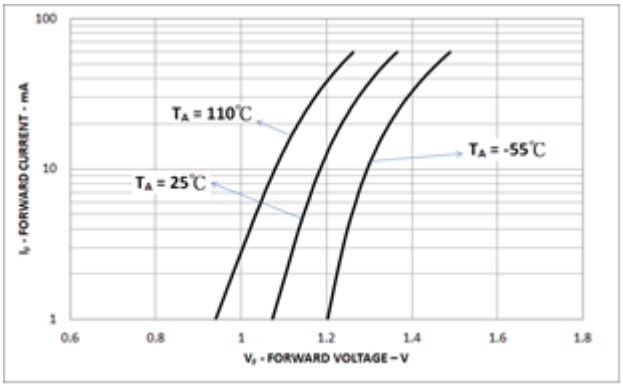


Figure 2. Forward Current vs. Forward Voltage

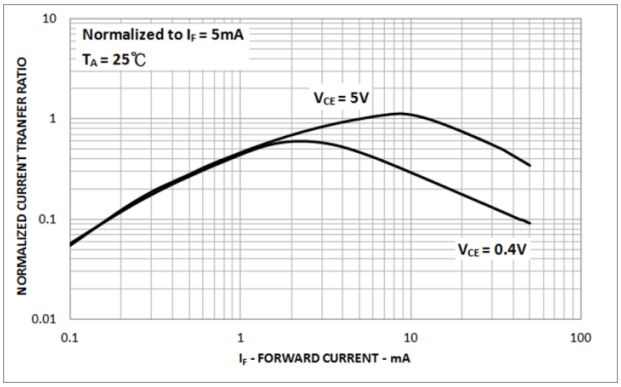


Figure 3. Current Transfer vs. Forward Current

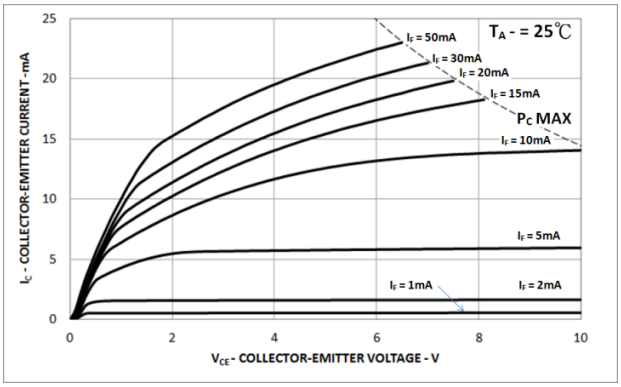


Figure 4. Collector Current vs. Collector-emitter Voltage

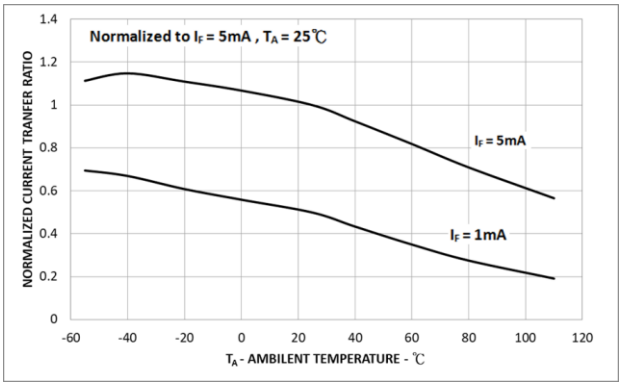


Figure 5. Relative Current Transfer Ratio vs. Ambient Temperature

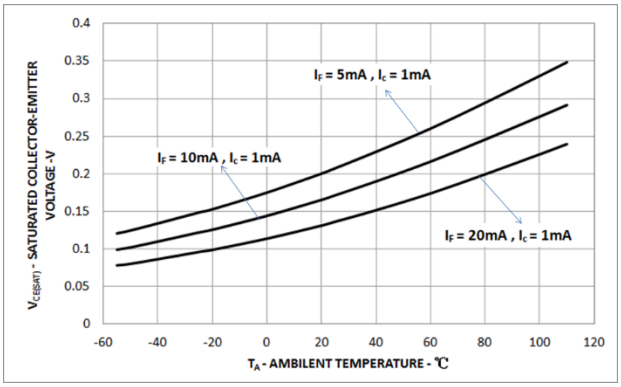


Figure 6. Collector-emitters Saturation Voltage vs. Ambient Temperature

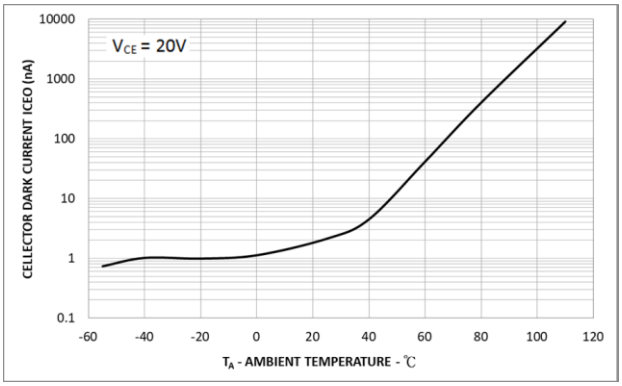


Figure 7. Collector Dark Current vs. Ambient Temperature

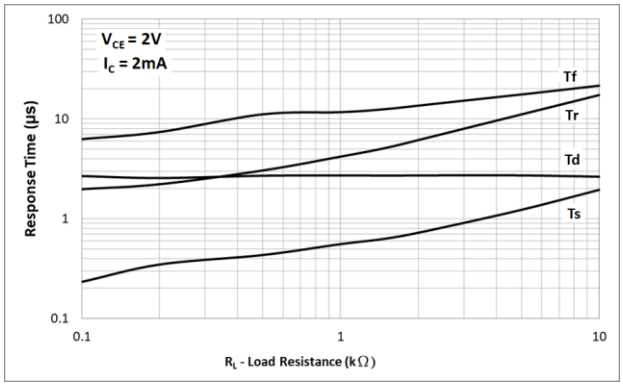


Figure 8. Response Time vs. Load Resistance

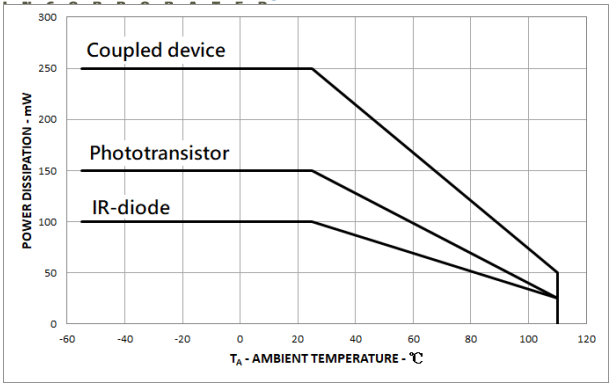
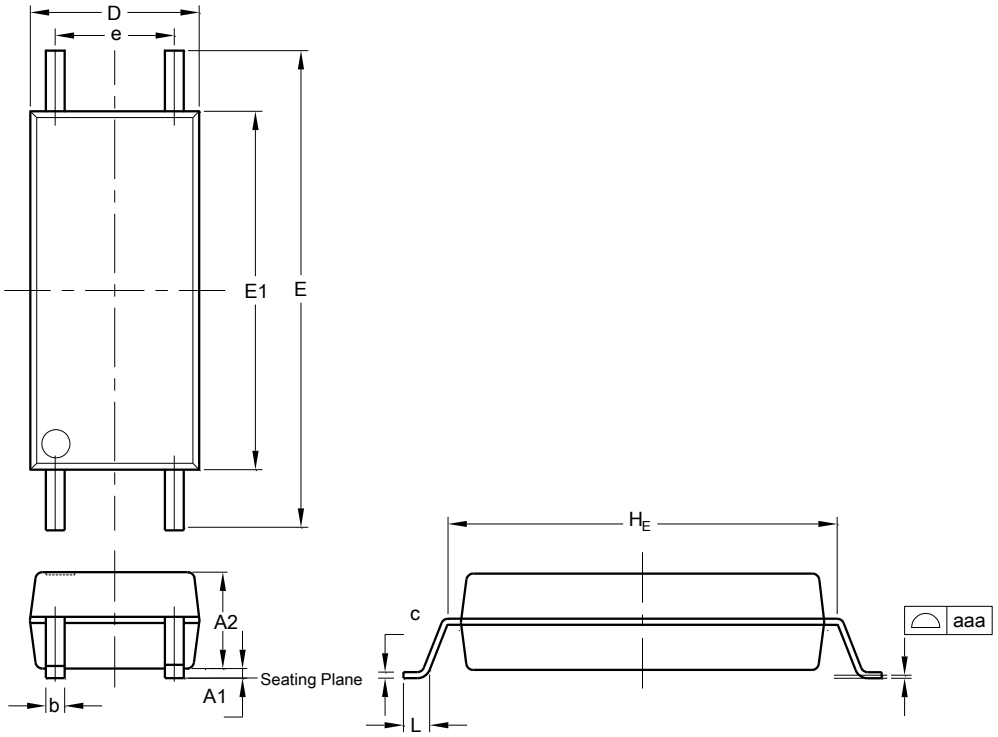


Figure 9. Ambient Temperature vs. Power Dissipation

Package Outline Dimensions

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

LSOP-4

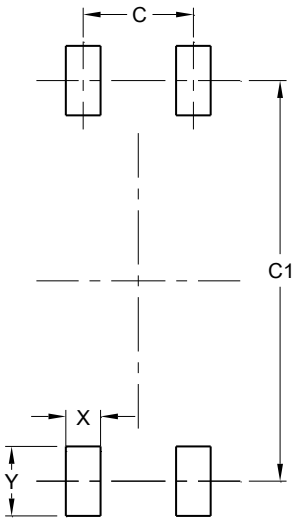


LSOP-4			
Dim	**Min**	**Max**	**Typ**
A1	0.00	0.20	0.10
A2	1.75	2.30	2.05
b	0.30	0.50	0.40
c	0.10	0.30	0.20
D	3.30	3.90	3.60
E	9.90	10.50	10.20
E1	7.32	7.92	7.62
e	--	--	2.54
H_E	8.35	8.95	8.65
L	0.40	--	--
aaa	0.00	0.10	--
All Dimensions in mm			

Suggested Pad Layout

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

LSOP-4



Dimensions	Value (in mm)
C	2.54
C1	9.22
X	0.80
Y	1.60

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