



# PC829 H PC849 H

## High Density Mounting Optocouplers



### Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Rating	Unit
Input	Forward current	IF	50	mA
	Peak forward current*1	IFM	1	A
	Reverse voltage	VR	6	V
	Power dissipation*2	P	70	mW
Output	Collector-emitter voltage	BVCEO	35	V
	Emitter-collector voltage	BVECO	6	V
	Collector current	IC	50	mA
	Collector power dissipation*3	PC	150	mW
Total power dissipation		Ptot	170	mW
Isolation voltage*4		Viso	5,000	VRMS
Operating temperature		Topr	-25 to +100	°C
Storage temperature		Tstg	-40 to +125	°C
Soldering temperature*5		Tsol	260	°C

\*1 Pulse width  $\leq 100\mu\text{s}$ , Duty ratio : 0.001

\*2 Derate linearly 1.33mW/°C above 25°C

\*3 Derate linearly 1.50mW/°C above 25°C

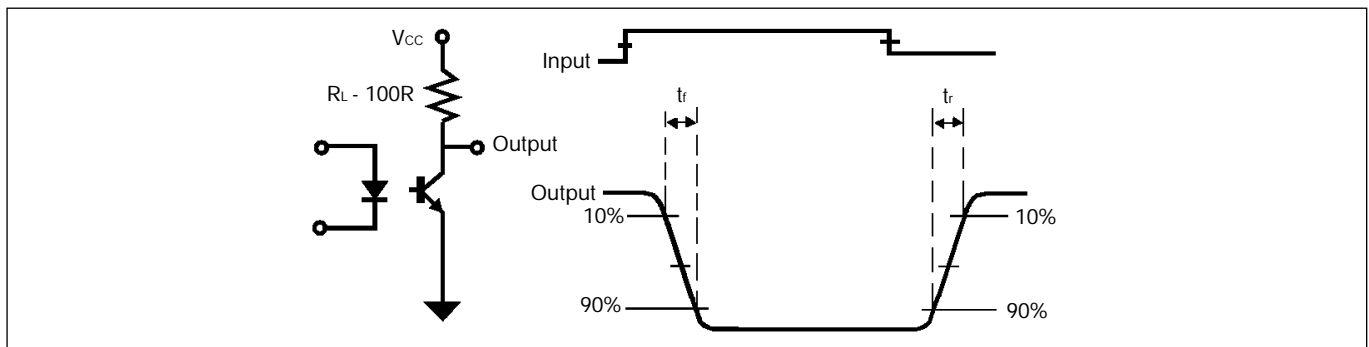
\*4 40 to 60% RH, AC for 1 minute

\*5 For 10 seconds. Suitable for Lead-free IR reflow soldering

### Electro-optical Characteristics (Ta=25°C)

Parameter		Symbol	Test Conditions	MIN	TYP	MAX.	Unit
Input	Forward voltage	VF	IF = 20mA	-	1.2	1.4	V
	Reverse current	IR	VR = 4V	-	-	10	$\mu\text{A}$
Output	Collector dark current	ICEO	VCE = 20V, IF = 0	-	-	100	nA
Transfer Characteristics	Current transfer ratio	CTR	IF = 5mA, VCE = 5V	50	-	400	%
	Collector-emitter saturation voltage	VCE(sat)	IF = 20mA, IC = 1mA	-	0.1	0.2	V
	Isolation resistance	RISO	DC 500V, 40 to 60% RH	$5 \times 10^{10}$	$10^{11}$	-	$\Omega$
	Floating capacitance	Cf	V = 0, f = 1MHz	-	0.6	1.0	pF
	Response time	Rise time	tr	VCE = 2V, IC = 2mA, RL = 100 $\Omega$	-	-	15
Fall time		tr	-		-	15	$\mu\text{s}$

### Test Circuit for Response Time



Also available in this series are: PC824 H, PC825 H and PC827 H

DEMA Electronic GmbH, PoBox 340241, D-80099 Muenchen

Phone: +49 89 / 286941-0

Email: info@dema.net

Fax: +49 89 / 28 35 09

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### Characteristic Curves

Fig.1 Forward Current vs. Ambient Temperature

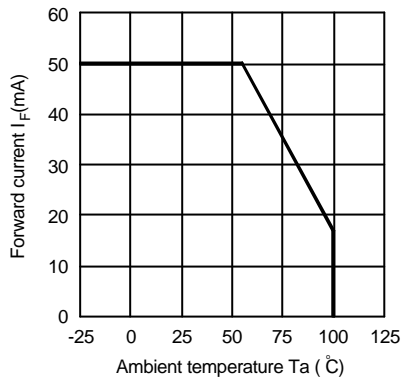


Fig.2 Collector Power Dissipation vs. Ambient Temperature

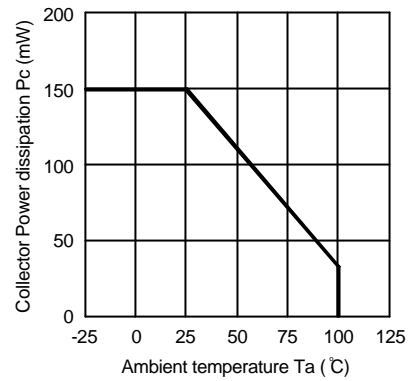


Fig.3 Collector-emitter Saturation Voltage vs. Forward Current

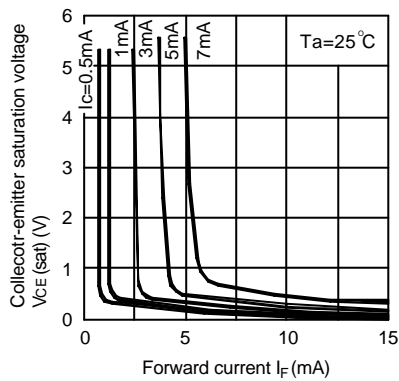


Fig.4 Forward Current vs. Forward Voltage

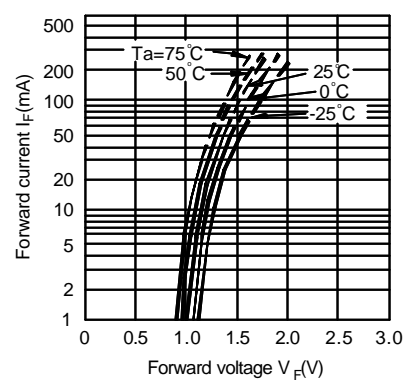


Fig.5 Current Transfer Ratio vs. Forward Current

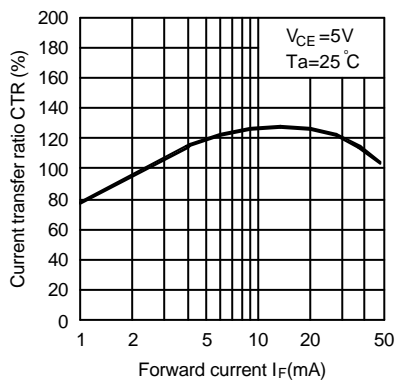
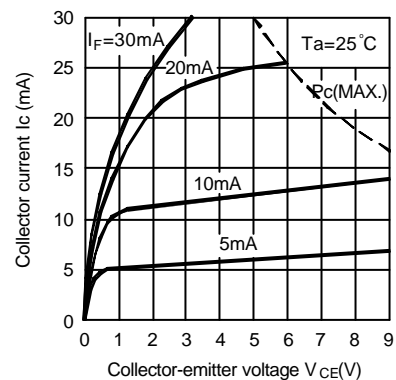


Fig.6 Collector Current vs. Collector-emitter Voltage



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### Characteristic Curves

Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

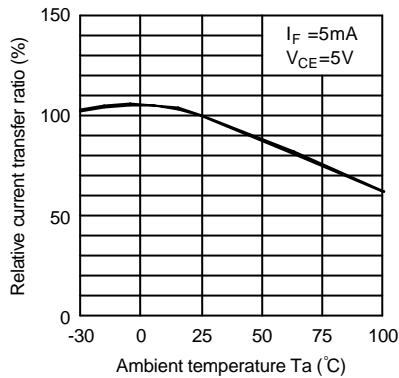


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

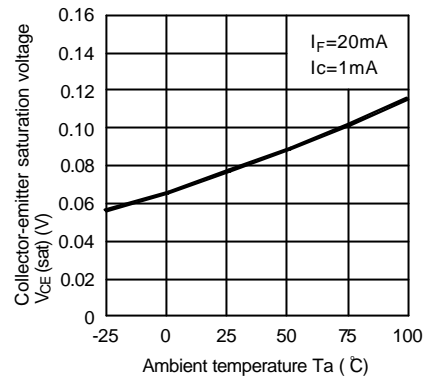


Fig.9 Collector Dark Current vs. Ambient Temperature

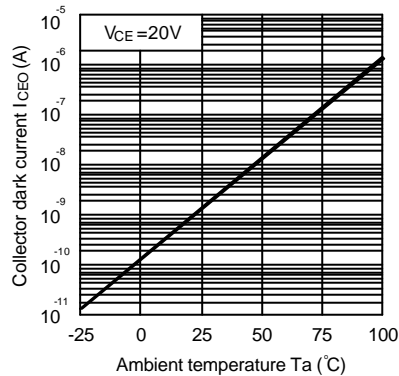


Fig.10 Response Time vs. Load Resistance

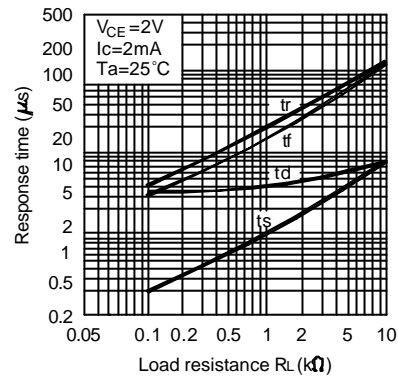
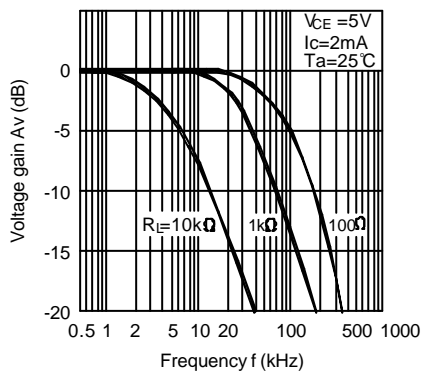
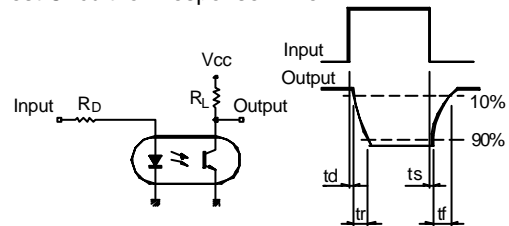


Fig.11 Frequency Response



Test Circuit for Response Time



Test Circuit for Frequency Response

