

Opto-Coupler

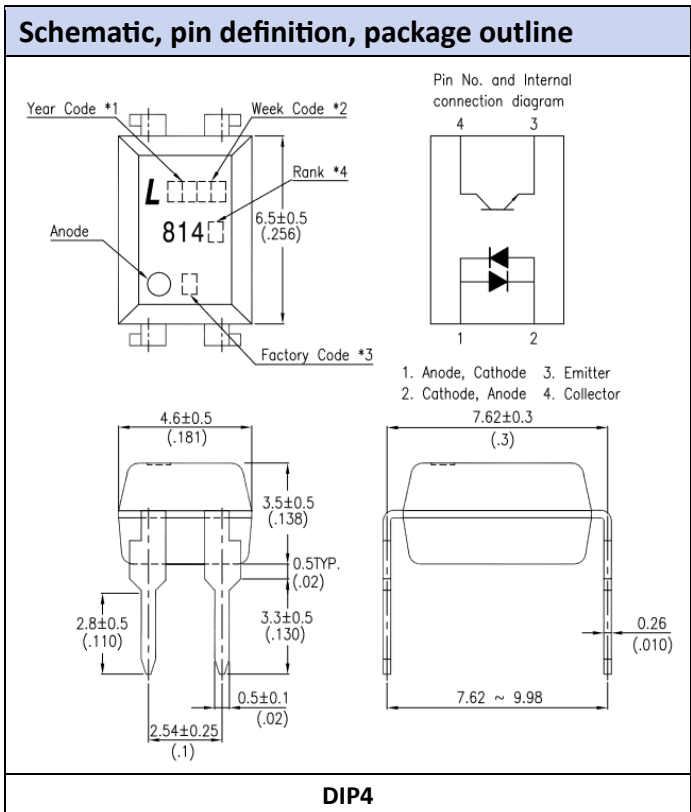
Primary characteristics		
Parameter	Value	Unit
Current transfer ratio (CTR)	50 ~ 150	%
Input-output isolation voltage (RMS)	5000	V

Features

- Pb-Free and RoHS Compliant
- DIP4 package for easy automatic insertion
- Low collector dark current
- High isolation voltage

Applications

- AC line monitor
- Unknown polarity DC sensor
- Telephone line interface

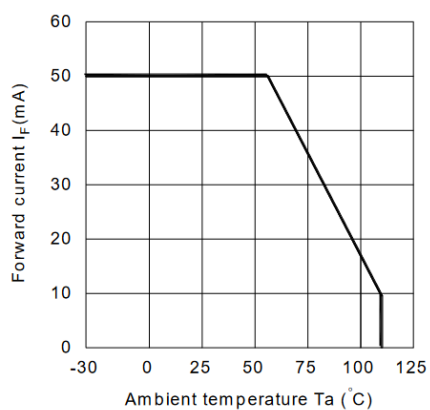
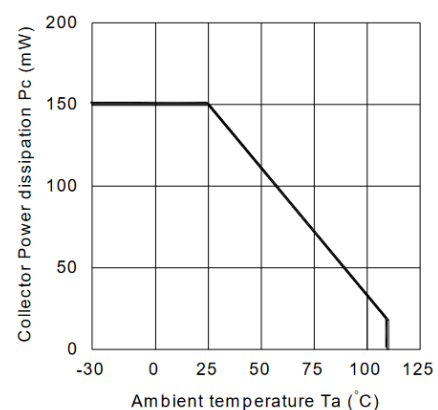


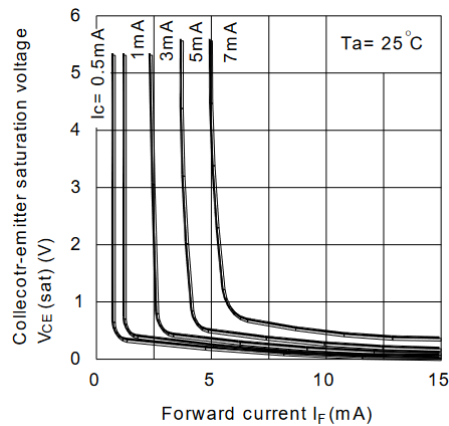
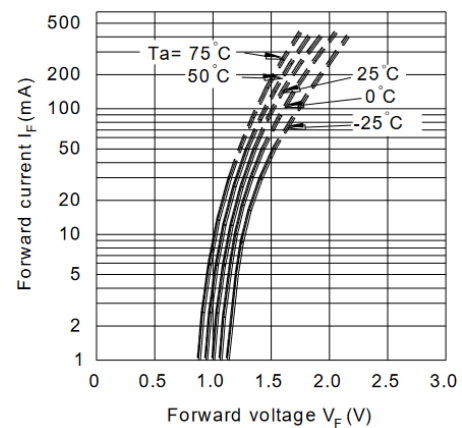
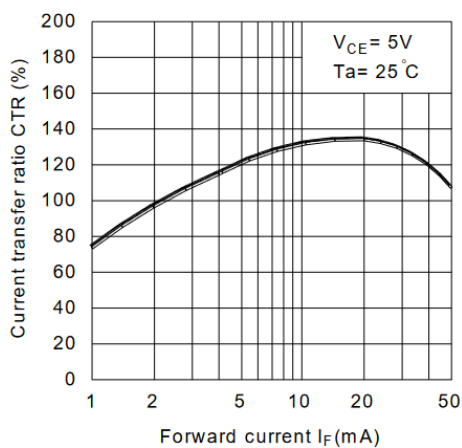
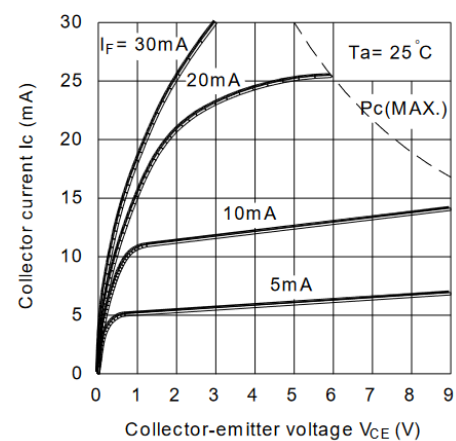
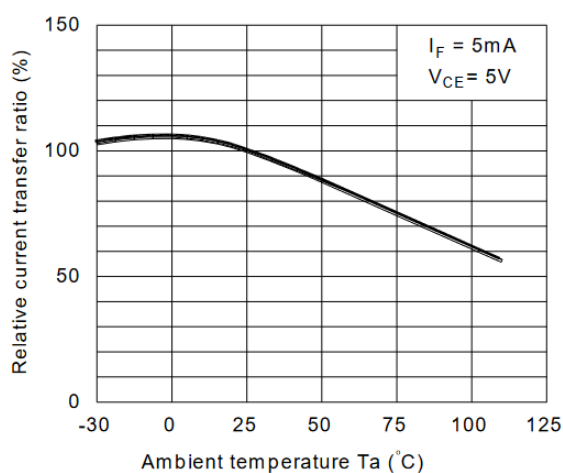
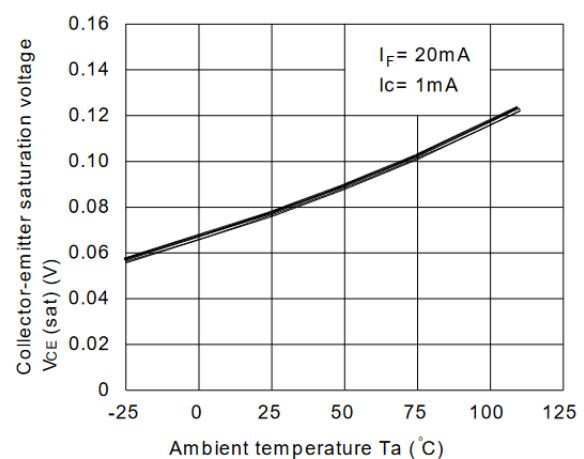
Absolute maximum ratings

Characteristic		Symbol	Rating	Unit
Input	Forward current	I_F	±50	mA
	Power dissipation	P	70	mW
Output	Collector-emitter voltage	V_{CEO}	35	V
	Emitter-collector voltage	V_{ECO}	6.0	V
	Collector current	I_C	50	mA
	Collector power dissipation	P_C	160	mW
Total power dissipation		P_{tot}	200	mW
Isolation voltage (AC for 1 minute, RH: 40~60%)		V_{ISO}	5000	V_{RMS}
Operating temperature range		T_{OPR}	-30 ~ 110	°C
Storage temperature range		T_{STG}	-55 ~ 150	°C
Soldering temperature (10 seconds)		T_{sol}	260	°C

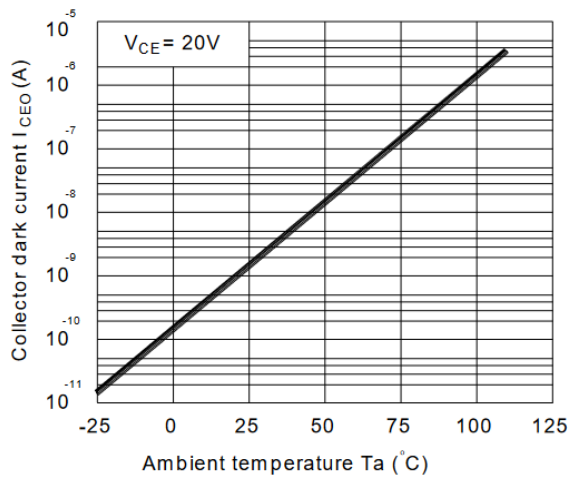
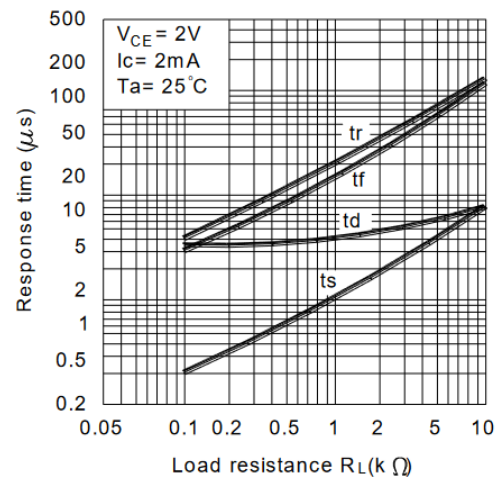
Electrical and optical characteristics

Characteristic		Symbol	Test conditions	Value			Unit
				Min.	Typ.	Max.	
Input	Forward voltage	V_F	$I_F=20\text{mA}$	-	1.2	1.4	V
	Terminal capacitance	C_t	$V=0, f=1.0\text{kHz}$	-	50	250	pF
Output	Collector dark current	I_{CEO}	$V_{CE}=20\text{V}, I_F=0$	-	-	100	nA
	Collector-emitter breakdown voltage	BV_{CEO}	$I_C=100\mu\text{A}, I_F=0$	35	-	-	V
	Emitter-collector breakdown voltage	BV_{ECO}	$I_E=10\mu\text{A}, I_F=0$	6.0	-	-	V
Transfer characteristics	Collector current	I_C	$I_F=\pm 1.0\text{mA}, V_{CE}=5.0\text{V}$	0.2	-	3.0	mA
	Current transfer ratio	CTR		50	-	150	%
	Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_F=\pm 20\text{mA}, I_C=1.0\text{mA}$	-	100	200	mV
	Isolation resistance	R_{iso}	DC500V, 40 ~ 60% R.H.	50	100	-	GΩ
	Floating capacitance	C_f	$V=0, f=1.0\text{MHz}$	-	0.6	1.0	pF
	Response time (rise)	t_r	$V_{CE}=2.0\text{V}, I_C=2.0\text{mA}$	-	4.0	18	μs
	Response time (fall)	t_f	$R_L=100\Omega$	-	3.0	18	μs

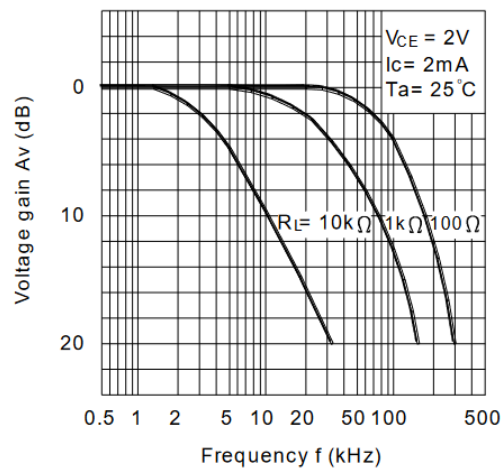
Characteristic curves
Forward current vs. ambient temperature

Collector power dissipation vs. ambient temperature


Characteristic curves
Collector-emitter saturation voltage vs. forward current

Forward current vs. forward voltage

Current transfer ratio vs. forward current

Collector current vs. collector-emitter voltage

Relative current transfer ratio vs. ambient temperature

Collector-emitter saturation voltage vs. ambient temperature


Characteristic curves

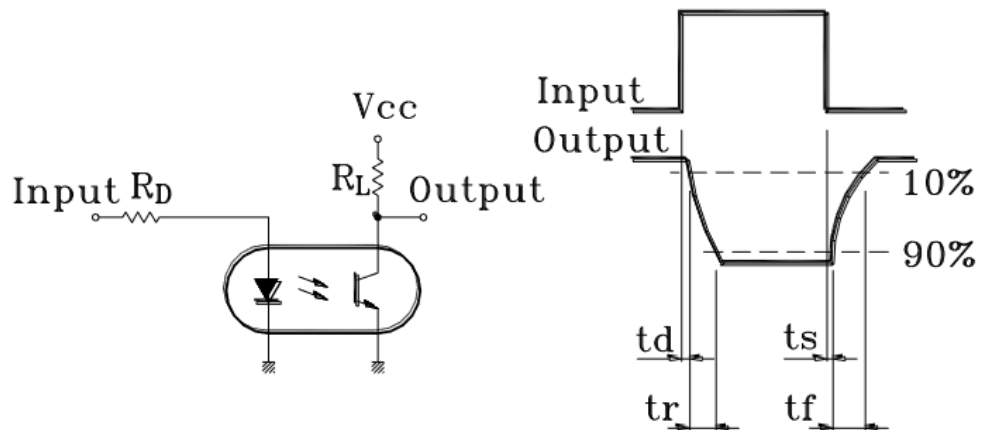
Collector dark current vs. ambient temperature

Response time vs. load resistance


Frequency response

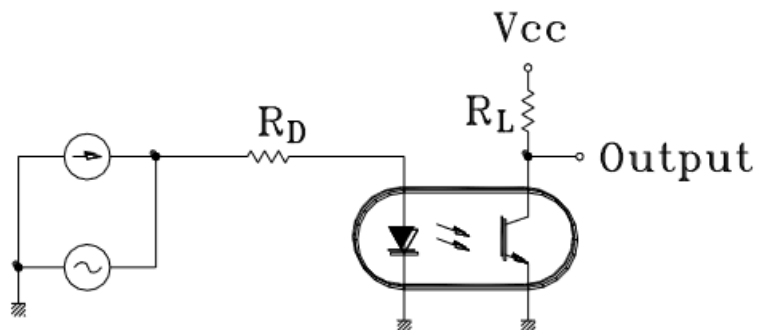


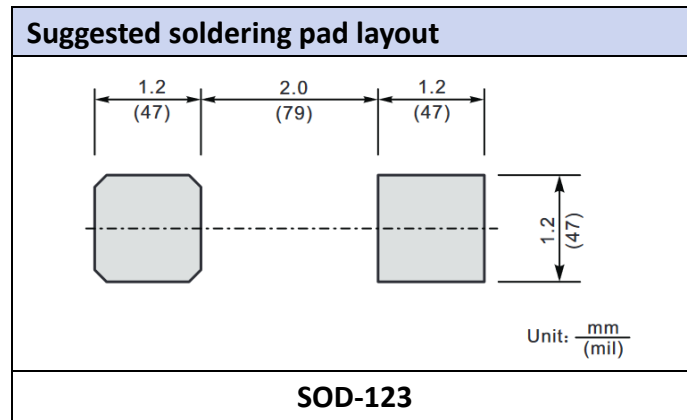
Test circuits

Test circuit for response time



Test circuit for frequency response





Ordering information			
Part Number	Package	Shipping Quantity	Dimensions
LTV-814-A	DIP4	2000 pcs	---

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