



High voltage opto-isolator

RS stock number 302-148

The **RS OPL126A** opto-isolator consists of a GaAsP light emitting diode optically coupled to an NPN silicon photo-transistor. The form of construction provides **10kV isolation** between input and output, with a minimum current transfer ratio of 25%. This device has **BASEEFA approval**, thus extending its area of application wider than that covered by most conventional types.

Features

- High isolation : 10kV input to output
- Simple to use and interface
- Good current transfer ratio : 25% minimum
- BASEEFA approved.

Absolute maximum ratings (at 25°C unless stated)

Storage temperature _____ -40 to +85°C
 Operating temperature _____ -40 to +85°C
 Soldering temperature _____ 240°C (5 secs)

Input Diode

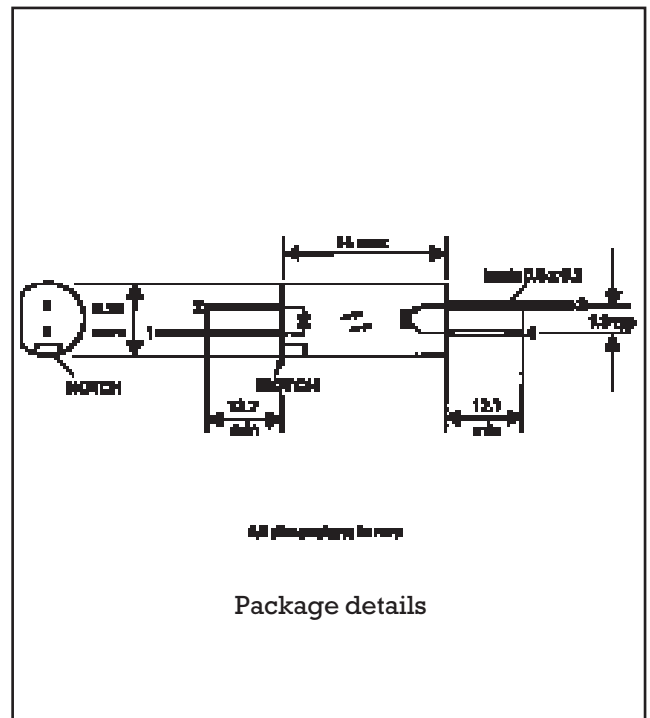
Power dissipation _____ 50 mW*
 Forward dc current _____ 40mA**
 Reverse dc voltage _____ 3V

Output Transistor

Power dissipation _____ 100 mW*
 Collector-Emitter voltage _____ 32 V
 Emitter-Collector voltage _____ 5V

* Derate linearly at 1.82 mW/°C above 25°C

** Derate linearly at 0.73 mA/°C above 25°C



Electro-optical characteristics (at 25°C)

	Parameter	Conditions	Min.	Typ	Max.	Units
Input Diode	Forward voltage	$I_F = 20 \text{ mA}$			1.5	V
	Reverse current	$V_R = 3\text{V}$			100	μA
Output Transistor	Collector-emitter breakdown voltage	$I_C = 1 \text{ mA}$	32			V
	Emitter-collector breakdown voltage	$I_E = 100 \mu\text{A}$	5			V
	Collector-emitter dark current	$V_{CE} = 20\text{V}$			200	nA
	Collector-emitter dark current	$V_{CE} = 10\text{V}, T_A = 70^\circ\text{C}$			100	μA
Coupled characteristics	dc current transfer ratio	$I_F = 10\text{mA}, V_{CE} = 5\text{V}$	25			%
	Isolation voltage	Input leads shorted and output leads shorted	10			kV
	Collector-emitter saturation voltage	$I_F = 10\text{mA}, I_C = 1.6\text{mA}$			0.4	V
	Input-output capacitance	Input leads shorted and output leads shorted		0.06		pF
	Turn-on time	$I_C = 2\text{mA}, V_{CC} = 10\text{V}, R_L = 100\Omega$		4		μs
Turn-off time	$I_C = 2\text{mA}, V_{CC} = 10\text{V}, R_L = 100\Omega$		3		μs	

Notes on BASEEFA Approval

The BASEEFA (British Approvals Service for Electrical Equipment in Flammable Atmospheres)

Approval number is:

BAS Ex 812252U Code EEx ia IIc

This confirms that the component has successfully met the examination and test requirements and has been found to comply with harmonised standards:

BS 5501:Part 1:1977 EN 50 014

BS 5501:Part 7:1977 EN 50 020

In particular compliance has been met in respect of clearances, creepage distances and distances through the casting compound for a maximum peak voltage of 375V.

Figure 2 Relative output current vs input current

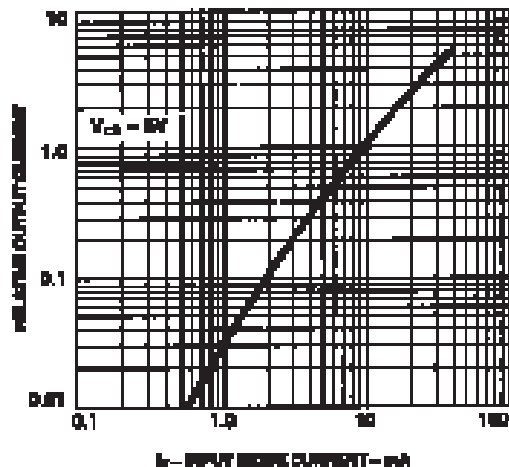


Figure 1 Collector current vs collector emitter voltage

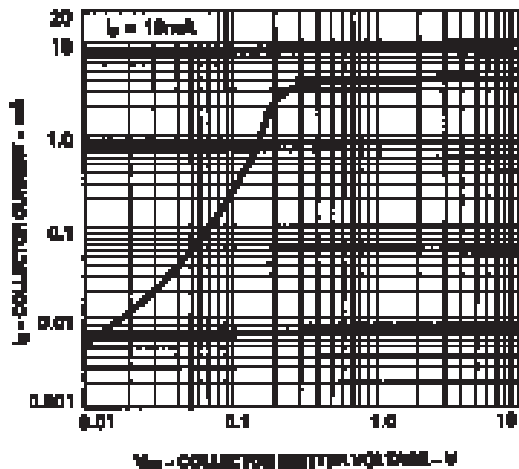
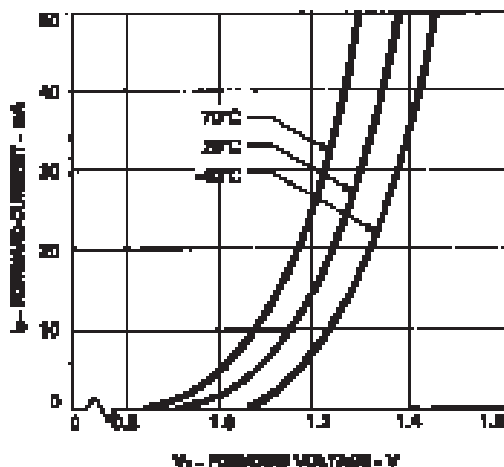


Figure 3 Forward current vs forward voltage



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