



# Optolink Ltd

## Optical Switches

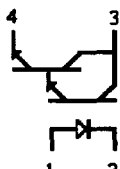
Characteristic		Ic ON				Ic OFF				ION	IOFF	Vce (sat)		VI (sat)		IVceo	IVeco	Ic	GAP	Schematic	Output
Test Conditions		Vce ) As ( F ) Shown RL = 0				Vce As Shown H = 0				H = 20mA RI = 1k		Ic As Shown		II As Shown							
Units		mA		V		nA		V		µs		V (sat)		mA		V		mA			
	OPT	MIN	TYP	II	Vce	TYP	Vce	(td + tr)	(tf + hf)	MAX	Ic	MAX	II	MIN	MIN	MAX	NOM				
	H21A1	1	2.4	20	5	<100	25	25	25	0.4	1.8	1.7	60	30	6	100	0.125	1	Transistor		
	H21A2	2	3.8	20	5	<100	25	25	25	0.4	1.8	1.7	60	30	6	100		1	Transistor		
	200	1.9	4.9	30	5	<100	25	25	25	0.4	1.8	1.6	30	30	6	100		1	Transistor		
	201	1.9	3.7	30	5	<100	25	25	25	0.4	1.8	1.6	30	30	6	100		2	Transistor		
	870A	0.5	0.77	20	10	<100	10	25	25	0.4	0.4	1.7	20	30	5	100		1	Transistor		
	871A	1	1.35	10	5	<100	10	25	25	0.4	0.8	1.7	20	30	5	100		1	Transistor		
	875A	0.5	1	20	10	<100	10	25	25	0.4	0.4	1.7	20	30	5	100		1	Transistor		
	876A	1	1.48	10	5	<100	10	25	25	0.4	0.8	1.7	20	30	5	100		1	Transistor		
	813S3	0.075		20	10	<100	10	25	25	0.4	0.04	1.7	20	30	5	100		1	Transistor		
	813S5	0.25		20	10	<100	10	25	25	0.4	0.125	1.7	20	30	5	50		1	Transistor		
	813S7	0.35		20	10	<100	10	25	25	0.4	0.175	1.7	20	30	5	50		1	Transistor		
	400	7.5	16	10	1.5	<100	25	45	400	1	1.8	1.7	60	30	7	100		3	Darlington		
	401	7.5	14	10	1.5	<100	25	45	400	1	1.8	1.7	60	30	7	100		4	Darlington		
	H21B1	7.5	22	10	1.5	<100	25	45	400	1	1.8	1.7	60	30	7	100		3	Darlington		
	H21B2	14	31	10	1.5	<100	25	45	400	1	1.8	1.7	60	30	7	100		3	Darlington		
	H21B3	25	40	10	1.5	<100	25	45	400	1	1.8	1.7	60	30	7	100		3	Darlington		
	H22A1	1	2.4	20	5	<100	25	25	25	0.4	1.8	1.7	60	30	6	100	0.125	1	Transistor		
	H22A2	2	3.8	20	5	<100	25	25	25	0.4	1.8	1.7	60	30	6	100		1	Transistor		
	100	1.9	4.9	30	5	<100	25	25	25	0.4	1.8	1.7	30	30	6	100		1	Transistor		
	101	1.9	3.7	30	5	<100	25	25	25	0.4	1.8	1.7	30	30	6	100		2	Transistor		
	870B	0.5	0.77	20	10	<100	10	25	25	0.4	0.4	1.7	20	30	5	100		1	Transistor		
	871B	1	1.35	10	5	<100	10	25	25	0.4	0.8	1.7	20	30	5	100		1	Transistor		
	875B	0.5	1	20	10	<100	10	25	25	0.4	0.4	1.7	20	30	5	100		1	Transistor		
	876B	1	1.48	10	5	<100	10	25	25	0.4	0.8	1.7	20	30	5	100		1	Transistor		
	300	7.5	16	10	1.5	<100	25	45	400	1	1.8	1.7	60	30	7	100		3	Darlington		
	301	7.5	14	10	1.5	<100	25	45	400	1	1.8	1.7	60	30	7	100		4	Darlington		
	H22B1	7.5	22	10	1.5	<100	25	45	400	1	1.8	1.7	60	30	7	100		3	Darlington		
	H22B2	14	31	10	1.5	<100	25	45	400	1	1.8	1.7	60	30	7	100		3	Darlington		
H22B3	25	40	10	1.5	<100	25	45	400	1	1.8	1.7	60	30	7	100	3	Darlington				



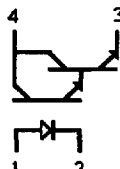
Schematic 1



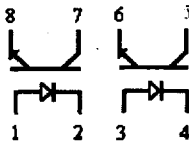
Schematic 2



Schematic 3



Schematic 4



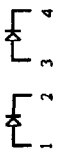
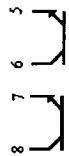
Schematic 5

Characteristic	I c ON			I c OFF		t ON		t OFF		V ce (sat)		V f (led)		ceo	eco	I c	GAP	Schematic	Output	
	V ce (IF) Shown R L = 0	As Shown R L = 0	V	V ce	V	I c	I f	I f	I f	I f	I c	I c	I c	I c	I c	I c	I c			I c
Test Conditions	Units			mA	V	nA	V	$\mu$ S	$\mu$ S	V	mA	V	mA	V	V	mA	IN			
	PT	MIN	TYP	I f	V ce	TYP	V ce	(I d + I f)	TYP	TYP	TYP	MAX	MAX	I f	MIN	MIN	MAX	NOM		
PKG3	804	0.5	1.6	20	10	<100	25	25	25	25	0.4	0.4	0.25	20	30	5	50	1	Transistor	
	805	0.5	1.6	20	10	<100	25	25	25	25	0.4	0.4	0.25	20	30	5	50	0.15	1	Transistor
PKG4	904	0.5	1.6	20	10	<100	10	25	25	25	0.4	0.4	0.25	20	30	5	50	0.155	1	Transistor
PKG5	823A	0.2		20	10	<100	10	25	25	25	0.4	0.4	100	20	30	5	50		9	Transistor
	824A	0.5		20	10	<100	10	25	25	25	0.4	0.4	250	20	30	5	50	0.125	9	Transistor
PKG6	150	0.25		20	10	<100	10	25	25	25	0.4	0.4	0.125	20	30	5	30		5	Dual Transistor
	151	0.25		20	10	<100	10	25	25	25	0.4	0.4	0.125	20	30	5	30	0.1	6	Dual Transistor
PKG7	250	0.25		20	10	<100	10	25	25	25	0.4	0.4	0.125	20	30	5	30		5	Dual Transistor
	251	0.25		20	10	<100	10	25	25	25	0.4	0.4	0.125	20	30	5	30		6	Dual Transistor
	822S	0.25		20	10	<100	10	25	25	25	0.4	0.4	0.125	20	30	5	50	0.1	5	Dual Transistor
	822SD	0.1		20	10	<100	10	25	25	25	0.4	0.4	0.125	20	30	5	50		5	Dual Transistor

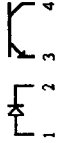
Characteristic		V <sub>I</sub>	I <sub>r</sub>	V <sub>cc</sub>	I <sub>ced</sub>	V <sub>oh</sub>	V <sub>ol</sub>	V <sub>oh</sub>	I <sub>oh</sub>	I <sub>l(+)</sub>	I <sub>r</sub>	I <sub>cs</sub>	I <sub>ph</sub>	ΔI <sub>ph</sub>	ΔI <sub>ph</sub>	Output
Test Condition	I <sub>f</sub> = 20mA T <sub>a</sub> = 25°C	MAX	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MAX	TYP	MIN	MAX	MAX	MIN	Schmitt Trigger
Units		V	nA	V	nA	V	V	V	μA	mA	nS	mA	μS	μS	μS	
PKG	OPT	MAX	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MAX	TYP	MIN	MAX	MAX	MIN	Schmitt Trigger
PKG	OPT	MAX	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MAX	TYP	MIN	MAX	MAX	MIN	Schmitt Trigger
PKG	OPT	MAX	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MAX	TYP	MIN	MAX	MAX	MIN	Schmitt Trigger
PKG	OPT	MAX	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MAX	TYP	MIN	MAX	MAX	MIN	Schmitt Trigger

Characteristic		V <sub>F</sub>	I <sub>R</sub>	V <sub>oh</sub>	V <sub>ol</sub>	I <sub>ph</sub>	I <sub>r</sub>	I <sub>f</sub>	Hysteresis	ΔI <sub>ph</sub>	Output
Test Conditions	I <sub>f</sub> = 20mA	MAX	10	NOTE 3	MIN	MAX	MIN	MAX	MIN	MAX	Schmitt Trigger
Units		V	μA	V	V	μS	ns	ns	%	%	
PKG	OPT	MAX	MAX	TYP	MAX	MIN	MAX	MAX	MIN	MAX	Schmitt Trigger
PKG	OPT	MAX	MAX	TYP	MAX	MIN	MAX	MAX	MIN	MAX	Schmitt Trigger
PKG	OPT	MAX	MAX	TYP	MAX	MIN	MAX	MAX	MIN	MAX	Schmitt Trigger

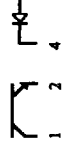
\* V<sub>cc</sub> operating range = 4.5V - 16V



Schematic 6



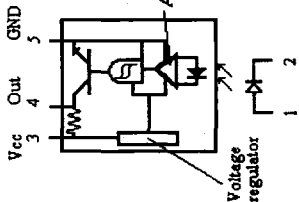
Schematic 7



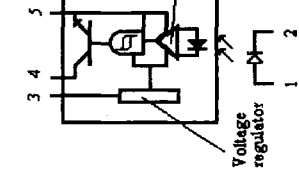
Schematic 8



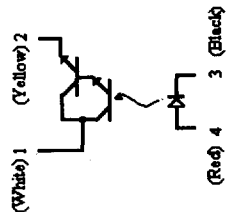
Schematic 9






Schematic 10



Schematic 11



Schematic 12

Characteristic	V <sub>I</sub>	I <sub>I</sub>	SV <sub>ceo</sub>	SV <sub>eco</sub>	I <sub>ceo</sub>	f <sub>r</sub> f <sub>i</sub>	I <sub>c ON</sub> *	V <sub>ce(sat)</sub>	V <sub>ce(sat)</sub>	Output
	MAX	MAX	MIN	MIN	MAX	μs	μA	V	V	Transistor
Test Conditions	I <sub>f</sub> = 40mA	V <sub>r</sub> = 2V V <sub>r</sub> = 3V*	I <sub>c</sub> = 100μA	I <sub>e</sub> = 100μA	V <sub>ce</sub> = 10V *V <sub>ce</sub> = 15V I <sub>f</sub> = 0 h = 0	V <sub>cc</sub> = 5V I <sub>c</sub> = 100mA R <sub>I</sub> = 100 *I <sub>c</sub> = 10mA	I <sub>f</sub> = 40mA V <sub>ce</sub> = 5V	I <sub>f</sub> = 40mA I <sub>c</sub> = 100μA *D = 0.200*	I <sub>f</sub> = 40mA I <sub>c</sub> = 3μA *D = 0.150*	
Units	V	μA	V	V	mA	μs	μA	V	V	
PKG10 		MAX	MIN	MIN	MAX		MIN	MAX	MAX	
703A	1.7	100	30	5	100	7	200	0.4		8
PKG11 		MAX	MIN	MIN	MAX					
708	1.7	100	30	5	100	6	10	0.15	0.4	7
PKG12 		MAX	MIN	MIN	MAX					
149	1.6	100*	30	7	*100	9*	25	0.15	0.4	7

Note: D is the distance from assembly face to reflective surface

Note 3. The output is tied to V<sub>cc</sub> through an internal 10k resistor.