

TOSHIBA PHOTOINTERRUPTER INFRARED LED + PHOTO IC

# TLP1208(C3)

COPIER, LASER BEAM PRINTER, LED PRINTER

FACSIMILE, PRINTER

AUTOMATIC VENDING MACHINE, TERMINAL EQUIPMENT  
IN BANKING FACILITIES

PLAYING EQUIPMENT, FA EQUIPMENT

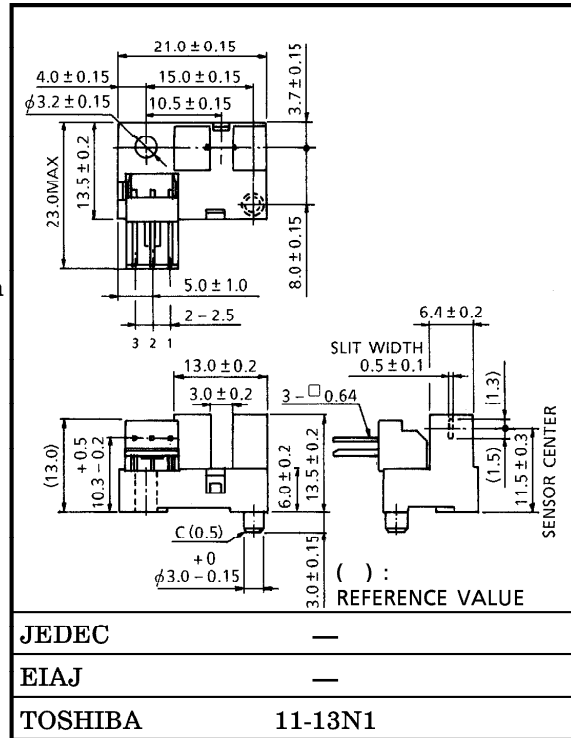
VARIOUS POSITION DETECTION SENDOR

The TLP1208 (C3) is a digital output photointerrupter having connectors with an GaAs infrared LED and a high sensitivity and low current consumption Si photo IC combined.

The output becomes low level when the light is shielded. The same size TLP1204 (C3) for 5V is available.

- One side mounting type
- Supply voltage : 12V
- Digital output (with a pull-up resistor)
- Gap : 3mm
- Resolution : Slit width 0.5mm
- Low current consumption :  $I_{CC} = 17.5\text{mA (max)}$
- Connectors  
2-171826-3  
(AMP (Japan), Ltd. made EI Connector)

Unit in mm

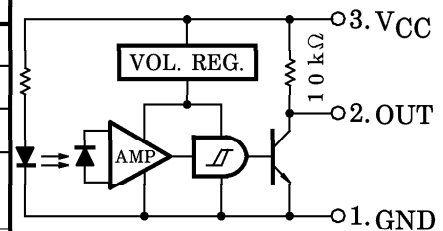


Weight : 2.4g (typ.)

**MAXIMUM RATINGS (Ta = 25°C)**

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	$V_{CC}$	15	V
Output Voltage	$V_O$	$V_{CC} + 0.5$	V
Low Level Output Current	$I_{OL}$	50	mA
Low Level Output Current Derating (Ta > 25°C)	$\Delta I_{OL} / ^\circ\text{C}$	-0.67	mA / °C
Operating Temperature Range	$T_{opr}$	-25~75	°C
Storage Temperature Range	$T_{stg}$	-40~85	°C

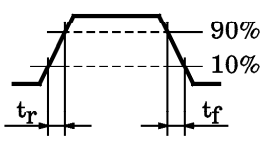
**PIN CONNECTION**



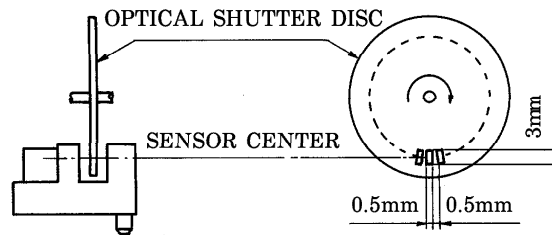
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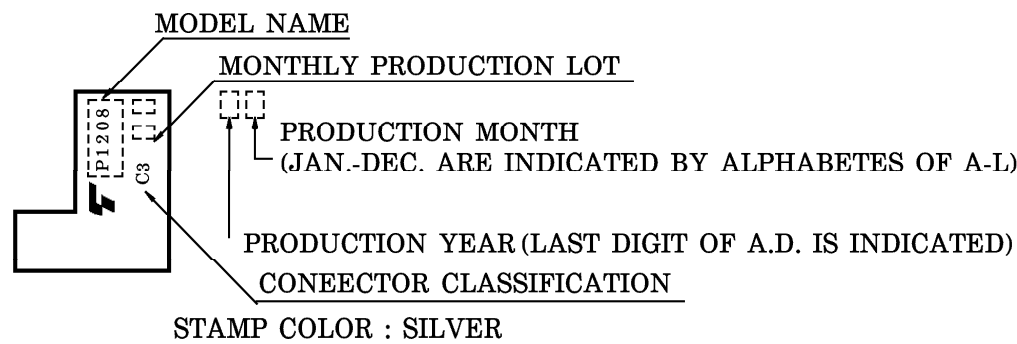
OPTO-ELECTRICAL CHARACTERISTICS (Unless Otherwise Specified, Ta = -25~75°C, VCC = 12V ± 10%)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage	VCC		10.8	12.0	13.2	V
Supply Current	High Level	ICCH Without Shutter	—	—	17.5	mA
	Low Level	ICCL Shutter In	—	—	17.5	
Output Voltage	High Level	Without Shutter	0.9VCC	—	—	V
	Low Level	Shutter In, IOL = 16mA, Ta = 25°C	—	0.07	0.35	
			Shutter In, IOL = 16mA	—	—	0.4
Peak Emission Wave length	λp	Ta = 25°C, LED Side	—	940	—	nm
Peak Sensitivity Wave length	λp	Ta = 25°C, Photo IC Side	—	900	—	nm
Response Frequency	f	Ta = 25°C (Note)	3000	—	—	Hz
Rise Time	tr		—	2	—	μs
Fall Time	tf		—	0.03	—	

(Note) A value measured when the disc shown in the following figure was rotated. No DC current should be output.

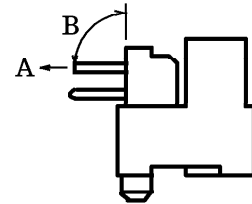


PRODUCT INDICATION



TERMINAL STRENGTH (Ta = 25°C)

CHARACTERISTIC	TEST CONDITION		LIMIT
PULL	DIRECTION	A	NO DEFECT OF ELECTRICAL CHARACTERISTICS
	WEIGHT	78.4N	
	TIME	5s / ONCE	
BEND	DIRECTION	B	
	WEIGHT	78.4N	
	TIME	5s / THRICE	



PRECAUTION

Please be careful of the followings.

1. During 100μs after turning on V<sub>CC</sub>, output voltage changes for stabilizing the inner circuit.
2. When installing, avoid to work by holding the connector by hand. Always, install by holding the main body of the element while assuring the mounting board is not warped or twisted. The connectors shall be inserted or pulled out at normal temperature.
3. Screw shall be tightened to clamping torque of 0.59N·m.
4. The container is made of polycarbonate. Polycarbonate is usually stable with acid, alcohol, and aliphatic hydrocarbons however, with peroxochemicals (such as benzene, toluene, and acetone), alkali, aromatic hydrocarbons, or chloric hydrocarbons, polycarbonate becomes cracked, swollen, or melted. Please take care when choosing a packaging material by referencing the table below.

<Chemicals to avoid with polycarbonate>

	PHENOMENON	CHEMICALS
A	Little deterioration but staining	<ul style="list-style-type: none"> <li>• nitric acid (low concentration), hydrogen peroxide, chlorine</li> </ul>
B	Cracked, crazed, or swollen	<ul style="list-style-type: none"> <li>• acetic acid (70% or more)</li> <li>• gasoline</li> <li>• methyl ethyl ketone, ethyl acetate, butyl acetate</li> <li>• ethyl methacrylate, ethyl ether, MEK</li> <li>• acetone, m-amino alcohol, carbon tetrachloride</li> <li>• carbon disulfide, trichloroethylene, cresol</li> <li>• thinners, oil of turpentine</li> <li>• triethanolamine, TCP, TBP</li> </ul>
C	Melted { } : Used as solvent.	<ul style="list-style-type: none"> <li>• concentrated sulfuric acid</li> <li>• benzene</li> <li>• styrene, acrylonitrile, vinyl acetate</li> <li>• ethylenediamine, diethylenediamine</li> <li>• {chloroform, methyl chloride, tetrachloromethane, dioxane, 1, 2-dichloroethane}</li> </ul>
D	Decomposed	<ul style="list-style-type: none"> <li>• ammonia water</li> <li>• other alkali</li> </ul>

RECOMMENDABLE MATCHED CONNECTOR

AMP (Japan), Ltd. made EI series connector (Standard type)

HOUSING	NATURAL COLOR	BLACK	BLUE	GREEN	RED
		171822-3	2-171822-3	4-171822-3	6-171822-3
TERMINAL	TYPE NO.	PRODUCT FORM	MATERIAL	AWG SIZE	INSULATION DIAMETER
	170204-1	LOOSEN	BRASS	AWG20~26	1.1~1.9mm
	170204-2		PHOSPHOR BRONZE		
	170262-1	LINKED	BRASS		
	170262-2		PHOSPHOR BRONZE		
	170205-1	LOOSEN	BRASS	AWG26~30	1.0~1.4mm
	170205-2		PHOSPHOR BRONZE		
	170263-1	LINKED	BRASS		
	170263-2		PHOSPHOR BRONZE		

AMP (Japan), Ltd. made EI series connector (Low profile type)

HOUSING	NATURAL COLOR	BLACK	BLUE	GREEN	RED
		172142-3	2-172142-3	4-172142-3	6-172142-3
TERMINAL	TYPE NO.	PRODUCT FORM	MATERIAL	AWG SIZE	INSULATION DIAMETER
	170369-1	LOOSEN	PHOSPHOR BRONZE	AWG22~26	1.1~1.9mm
	170354-1	LINKED			
	170370-1	LOOSEN		AWG26~30	1.0~1.5mm
	170355-1	LINKED			

For details of the connectors, please refer to the connector maker.

