TOSHIBA

Leading Innovation

Optoelectronic Products Reference Guide 2007-2008

TOSHIBA
Leading Innovation

Toshiba is proud to provide this comprehensive optoelectronic products reference guide.

As one of the world's largest manufacturers of optoelectronic products, Toshiba has the breadth of product line to fill all your needs.

The products listed in this guide are available through your local Toshiba representative or distributor. For specific information and other products which you don't find in this guide, please refer to our web site at **www.toshiba.com/taec.**

For additional information, please call your nearest Toshiba regional office.

The information contained herein is subject to change without notice.

The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA for any infringements of patents or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of TOSHIBA or others.

TOSHIBA is continually working to improve the quality and reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situation in which a malfunction or failure of such TOSHIBA products could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent TOSHIBA products specifications. Also, please keep in mind the precautions and conditions set forth in the "Handling Guide for Semiconductor Devices," or "TOSHIBA Semiconductor Reliability Handbook" etc.

The Toshiba products listed in this document are intended for usage in general electronics applications (computer, personal equipment, office equipment, measuring equipment, industrial robotics, domestic appliances, etc.). These Toshiba products are neither intended nor warranted for usage in equipment that requires extraordinarily high quality and/or reliability or a malfunction or failure of which may cause loss of human life or bodily injury ("Unintended Usage"). Unintended Usage include atomic energy control instruments, airplane or spaceship instruments, transportation instruments, traffic signal instruments, combustion control instruments, medical instruments, all types of safety devices, etc. Unintended usage of Toshiba products listed in this document shall be made at the customer's own risk.

The products described in this document may include products subject to foreign exchange and foreign trade laws.

The products contained herein may also be controlled under the U.S. Export Administration Regulations and/or subject to the approval of the U.S. Department of Commerce or U.S. Department of State prior to export. Any export or re-export, directly or indirectly in contravention of any of the applicable export laws and regulations, is hereby prohibited.

CONTENTS

This section highlights some of the new products introduced by Toshiba in 2006-2007.

(1) Lead(Pb)-Free/RoHS-Compatible Products

In an effort to support our customers in complying with pending environmental legislation, Toshiba Optoelectronics offers a selection of RoHS-Compatible[1] and Lead(Pb)-Free[2] products. Such products are designated by the "F" suffix in their part numbers. For example, TLP281(F). For more information about RoHS-Compatible products by Toshiba, please go to **www.RoHS.Toshiba.com**.

(2) Illuminance Sensor TPS851/TPS852/TPS853/TPS856

TPS851/853 TPS852/856

TPS851/852/853/856 are surface mount illuminance sensors which incorporate a photo-diode and current amp circuit in a single chip. These unique features, when coupled with the internal luminosity efficiency correction (LEC) function, enable engineers to design efficient backlighting control system with similar to human eye response. They also save power consumption.

Features

Product Characteristics	TPS851	TPS852	TPS853	TPS856
Package size (mm)	2.1 x 2.0 x 0.7	1.6 x 1.6 x 0.55	2.1 x 2.0 x 0.7	1.6 x 1.6 x 0.55
Supply Voltage	2.7 - 5.5 V	2.7 - 5.5 V	2.2 - 5.5 V	1.8 - 5.5 V
Light current (1): IL (1) (μA)	Min. –	Min. –	Min. –	Min. –
Vcc=3V, Ev=100lx, CIE standard	Typ. 62	Typ. 48	Typ. 62	Typ. 57
A light source (Note 1)	Max. –	Max. –	Max. –	Max. –
Light current (2): IL (2) (μA)	Min. 37	Min. 27	Min. 37	Min. 40
Vcc=3V, Ev=100lx,	Typ. 52	Typ. 40	Typ. 52	Typ. 57
Florescent light	Max. 74	Max. 54	Max. 74	Max. 80
Light Current Ratio	Typ. 1.2	Typ. 1.2	Typ. 1.2	Typ. 1.0
IL (1) / IL (2)	Max. 1.7	Max. 1.7	Max. 1.7	Max.
Dark Current: I_{LEAK} (μA)	Max. 0.1	Max. 0.1	Max. 0.1	Max. 0.1
Remarks			Standby term.	Standby terminal

Note 1: Color temperature = 2856K, approximated incandescence light

(3) High Speed Optical Transceiver TODX2701(F)

The TODX2701(F) optical transceiver module supports APF (all-plastic fiber) and PCF (plastic-clad silica fiber) cables.The TODX2701(F) is compatible with PN and JIS07 connectors and well suited for Fast Ethernet (125Mb/s) transmission.

[1] RoHS-Compatible - Toshiba Semiconductor Company defines "RoHS-Compatible" products as products that either (i) contain no more than a maximum concentration value of 0.1% by weight in Homogeneous Materials for lead, mercury, hexavalent chromium, polybrominated biphenyls (PBBs) and polybrominated diphenyl ethers (PBDEs) and of 0.01% by weight in Homogeneous Materials for cadmium; or (ii) fall within any of the application exemptions set forth in the Annex to the RoHS Directive.

[2] Lead(Pb)-Free - Toshiba Semiconductor Company defines "Lead(Pb)-Free" products as those containing no more than 0.1 percent Lead(Pb) by weight in Homogeneous Materials. This does not mean that Toshiba Semiconductor products labeled "Lead(Pb)-Free" are entirely free of Lead(Pb).

[3] RoHS Directive - Toshiba Semiconductor Company defines "RoHS Directive" as the Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Features
- Data rata: 20 to 125 Mb/s (NRZ)
- Transmission distance: up to 20 m with APF
  up to 100 m with GI-PCF
- Operating temperature: -10 to +70°C
- PECL interface
- Supply voltage: 3.3 +/- 0.3V
- Pb-free

(4) SMA Optical Transmitter and Receiver Modules TOTX1400(F)/TORX1400(F)

TOTX1400(F) TORX1400(F)

The TOTX1400(F) optical transmitter module and TORX1400(F) receiver module support APF (all plastic fiber) cables. The TOTX1400(F) and TORX1400(F) are compatible with SMA connector and well suited for Fast Ethernet (125Mb/s) transmission.

Features
- Data rata: 20 to 125 Mb/s (NRZ)
- Transmission distance: up to 50 m with APF
- Operating temperature: -10 to +70°C
- PECL interface
- Pb-free

(5) Low Supply Current IGBT/MOSFET Drive Coupler TLP350 Series

Following the introduction of TLP351, Toshiba continues to strengthen the line-up of low power consumption IGBT/MOSFET drive coupler by introducing TLP350. Like TLP351, TLP350 only requires 2mA supply current, reducing power consumption by 80% compared to the previous generation TLP250. TLP350 features high output current of 2.5A (max) and high CMR of 15kV/us (min).

Product Characteristics	TLP351	TLP350
Peak Output Current (max)	±0.6A	±2.5A
Output Current (min)	±0.2A	±1.0A
Supply Current (max)	2mA	2mA
Isolation Voltage (min)	3.75kVrms	3.75kVrms
Common Mode Rejection (min)	10kV/us*	15kV/us
UVLO	Optional	Yes

* For TLP351, CMR of 15kV/us is available upon request (special selection).

(6) Small 4-pin DIP Triac Couplers TLP360J, TLP361J and TLP363J

Compared to our conventional 6-pin DIP triac couplers, the TLP360J, TLP361J and TLP363J are housed in 4-pin DIP, resulting in a 35% reduction in size. They have high isolation of 5kVrms and high peak off-state voltage of 600V. TLP361J and TLP363J have the additional feature of zero-cross function. Furthermore, TLP363J has a high impulse noise immunity of 2000V.

Features
- Peak off-state voltage: 600V (min)
- Isolation voltage: 5kVrms (min)
- Internal isolation gap: > 0.4mm (min)
- Inhibit voltage: 20V (max) (TLP361J & TLP363J)
- Impulse noise immunity: 2000V (typ) (TLP363J)
- UL, VDE (TUV), BSI and SEMKO Recognized

(7) IC Couplers for IPM Gate Drive TLP102, TLP106, TLP702 and TLP706

The new IC couplers TLP102, TLP106, TLP702 and TLP706 are optimized for use in IPM gate drivers. The totem-pole output configuration makes bidirectional drive possible for the sink and source. Open-collector output type photo-IC couplers often require a pull-up resistor; however, employing the totem-pole configuration for the TLP102, TLP106, TLP702 and TLP706 eliminates the need for this resistor. Toshiba provides two logic output types: inverter logic, the TLP102 and TLP702, and buffer logic, the TLP106 and TLP706. You can select the photo-IC couplers best suited to your intelligent power modules. In addition, the shielded detectors enable high common-mode transient immunity, and excellent input and output noise characteristics.

Part Number	TLP102 and TLP106	TLP702 and TLP706
Package	MSFOP6	SDIP6
Threshold input current	3mA (max)	5mA (max)
Output current (Ta ≤ 25°C)	± 15mA (max)	± 15mA (max)
Propagation delay time	400 ns (max)	600 ns (max)
Operating temperature	-40 to 85°C	-40 to 100°C
Supply voltage	4.5 V to 20 V	4.5 V to 20 V
Operation voltage	3750 Vrms (min)	5000 Vrms (min)

Truth Table

Part Number	Logic	Input	Output
TLP102	Inverter Logic	H	L
TLP702		L	H
TLP106	Buffer Logic	H	H
TLP706		L	L

(8) IC Couplers in New SDIP Package TLP701, TLP705 and TLP719

These three new IC couplers are housed in a new small Shrink Dual In-line Package (SDIP) that meets the safety standard requirements for reinforced insulation. This SDIP package reduced the mounting area by 50% compared to the conventional 8-pin DIP package. All of them have high isolation voltage of 5kVrms and an internal isolation gap of greater than 0.4mm.

Part Number	Data Rate (typ)	Output	Application
TLP701	0.25us	±0.6A peak current	IGBT/MOSFET direct drive, UPS,inverter equipment
TLP705	120 ns	±0.45A peak current	
TLP719	1 Mbps	CTR 20% (min)	IPM drive, line receivers, digital logic ground isolation

(9) TLP2066

Our first 3.3V, 20MHz high speed IC photocoupler, the TLP2066, addresses isolation requirements and switching noise elimination in switching power supplies, instrument I/O, computer peripheral interfaces, high speed disk drive I/O, bus drivers for networking applications, and high speed logic systems. For demanding isolation requirements, the TLP2066 provides a compelling combination of high-speed switching, low propagation delay, high isolation voltage and high transient immunity. In addition, a low supply current and high isolation voltage help differentiate this device from leading competitive solutions.

The TLP2066 is offered in a compact 5-pin MFSOP6 package, measuring only 4.4mm x 3.6mm x 2.5mm, which is ideal for space constrained applications. The new optocouplers also feature a wide operating temperature range of -40ºC to +100ºC.

Specification	TLP2066
Package	MFSOP6
Operating Voltage	3.3 V
Output Type	Totem Pole
Output Current	10mA
Propagation Delay (max.)	60ns
Supply Voltage (max.)	6V
Supply Current (max.)	5mA
Operating Temperature Range	-40ºC to +100ºC
CMR (min.)	15kV/us
Isolation Voltage (min.)	3750 Vrms

(10) 20-Mbps High-Speed and Low-Power-Consumption Photo-IC Output Coupler TLP116

The **TLP116** high performance photo-IC output coupler is housed in a mini-flat package with one third of the lower power consumption and twice the switching speed of previous high-speed photo-IC coupler, **TLP115A**. A switching speed of 20 Mbps is achieved, and the totem-pole output configuration makes bidirectional drive for the sink and source possible. The maximum operating temperature of 100ºC allows the TLP116 to be used in various applications such as plasma displays, measurement instruments, control equipment and factory automations.

Characteristic		TLP116	TLP115A (Previous Product)
Propagation delay time	tpHL/tpHL	60 ns (Ta = -40 to 100ºC)	120 ns (Ta = 25ºC)
Supply current	ICCL/ICCH	5 mA/5 mA(Ta= -40 to 100ºC)	19 mA/5 mA (Ta= -40 to 70ºC)
Supply voltage	VCC	4.5 to 5.5 V	4.5 to 5.5 V
Operating temperature	Topr	-40ºC to 100ºC	-40ºC to 85ºC
Threshold input current (max)	IFHL	5maA (Ta= -40 to 100ºC)	5maA (Ta= -40 to 70ºC)
Common mode transient inmunity (min) CML/CMH(Ta=25ºC)		± 10 kV/_s	± 1 kV/_s
Isolation Voltage (min)	BVs (Ta=25ºC)	3.75 kVrms	2.5 kVrms

(11) 50-Mbps 5V High-Speed IC Coupler - TLP117

The **TLP117** is the fastest high-speed coupler in our line-up. **TLP117** comes in MSFOP6 package and is recommended in high speed transmission applications such as factory automation products and PDP (Plasma Display Panel.)

Please contact Toshiba for the lastest information.

(12) 20-Mbps 5V High-Speed IC Coupler in SOP8 Dual Package - TLP2166

Please contact Toshiba for the lastest information.

This section recommends product lines and specific product names by applications. If you would like to learn more, please access **www.toshiba.com/taec**.

Application	Product	Function	Product Name	Product Category
PLC	Coupler	Isolation between Input Signal and Logic Processor	TLP283-4/TLP281-4/ TLP280-4/TLP181/ TLP180/TLP719	Transistor Coupler
		Isolation between Logic Processor and Output Load	TLP351/TLP2631/ TLP115A/TLP2531/ TLP117	IC Coupler
			TLP222A/TLP172A	Photorelay
			TLP260J/TLP161J/ TLP3063(S)	Triac Coupler
	TOSLINK	Digital Data Transmission	TODX283/TODX2801	High Speed Toslink
Inverter	(Used in elevator, refrigerator, air conditioner, washer, microwave …etc.)			
	Coupler	IGBT/MOSFET Drive	TLP351/TLP250/TLP350/ TLP701/TLP705	IC Coupler
		IPM Drive	TLP114A(IGM)/TLP559(IGM)/ TLP106/TLP102	IC Coupler
		Switching Power Supply	TLP421/TLP181/TLP281/ TLP283	Transistor Coupler
Switching Power Supply	Coupler	Error Amplification and Over-Voltage Protection in Feedback Loop	TLP421/TLP181/TLP281/ TLP283	Transistor Coupler
			TLP741G	Thyrister Coupler
			TLP114A/TLP117	IC Coupler
Home Appliance	Coupler	Switching Power Supply	TLP421/TLP181/TLP281/ TLP283	Transistor Coupler
		AC Load Control (Heater, Valve, Motor,Lighting, etc.)	TLP260J/TLP161J/ TLP3063(S)/TLP361J	Triac Coupler
			TLP3502A/TLP3520A	AC Power Coupler
		Inverter Control	TLP351/TLP701	IC Coupler
	TOSLINK	Digital Data Transmission	TODX2402	High Speed Toslink
STB/TV	Coupler	Isolation between Scan Controller and Scan Driver in Plasma Display	TLP351/TLP115A/ TLP114A/TLP106 TLP701/TLP719	IC Coupler
		Modem Terminal in STB	TLP222G/TLP172G	Photorelay
			TLP421/TLP181	Transistor Coupler
		Switching Power Supply	TLP421/TLP181/TLP281/ TLP283	Transistor Coupler
	TOSLINK	Digital Data Transmission	TOTX177/TOTX147/ TORX177/TORX147	Digital Audio Toslink
		High Density Data Transmission	TODX2402(F)	High Speed Toslink
Printer	Sensor	Paper detection	TLP841/TLP1243(C8)	Photo Interrupter Small package

Application	Product	Function	Product Name	Product Category
Digital Audio/ Sound Card/ Graphic Card	TOSLINK	Digital Data Transmission	TOTX177PL/TOTX147PL/ TORX177PL/TORX147PL	Digital Audio Toslink
		High Density Data Transmission	TODX2402	High Speed Toslink
	Coupler	Switching Power Supply	TLP421/TLP181/TLP281 TLP283	Transistor Coupler
		Built-in Modem	TLP172G/TLP222G	Photorelay
			TLP181/TLP281	Transistor Coupler
			TLP627/TLP127	Darlington Transistor Coupler
PC/Laptop	Coupler	Switching Power Supply	TLP421/TLP181/TLP281 TLP283	Transistor Coupler
		Built-in Modem	TLP172G/TLP222G	Photorelay
			TLP181/TLP281	Transistor Coupler
			TLP627/TLP127	Darlington Transistor Coupler
	TOSLINK	Digital Data Transmission	TOTX177PL/TOTX147PL TORX177PL/TORX147PL	Digital Audio Toslink
		High Density Data Transmission	TODX2402	High Speed Toslink
	Photosensor	LCD Backlight Control	TPS851/TPS852/TPS853	Illuminance Sensor
Cellular Phone/PDA	Photosensor	LCD Backlight and LED Light Control	TPS851/TPS852/ TPS853	Illuminance Sensor
	Coupler	Battery Charger	TLP181/TLP281	Transistor Coupler
ADSL/ Modem/ LAN	Coupler	Line Switching	TLP222G/TLP172G	Photorelay
		Ring Detection	TLP180/TLP280	Transistor Coupler
		Data Access Arr.	TLP270G/TLP270D	Photorelay
	TOSLINK	Digital Data Transmission	TODX2402	High Speed Toslink
PBX/ BaseStation	Coupler	Line Switch	TLP222G/TLP172G	Photorelay
		Switching Power Supply	TLP421/TLP181/TLP281 TLP283	Transistor Coupler
Telephone/ Fax	Coupler	Cross Point Switch	TLP627/TLP127	Darlington Transistor Coupler
			TLP624/TLP124	Transistor Coupler
		Telephone Line Interface	TLP222G/TLP172G	Photorelay
		Polarity Detection	TLP281/TLP181	Transistor Coupler

This section lists the most popular Toshiba optoelectronic product lines. If you would like to learn more, please access our web site, **www.toshiba.com/taec**.

3-1. TOSLINK™

The term TOSLINK™ is a trademark of Toshiba, the fiber optical module for data communication through an optic fiber such as APF (all plastic fiber). It consists of a light emitting diode with transmitter IC and a photodiode with receiver IC, which makes it capable of optical data communication.

For Digital Audio

Transmitting Module	Receiving Module	Data Rate (Mb/s, NRZ)	Transmission Distance (m)	Pulse Width Distortion (ns)	Power Supply Voltage (V)	Operating Temp. (˚C)	Appropriate Optical Fiber (μm)
TOTX177(F,T)	TORX177(F,T)	0.1 to 15	up to 5	+/- 15	5 +/- 0.25	-20 to +70	APF (970/1000) APF (980/1000)
TOTX177L(F,T)	TORX177L(F,T)	0.1 to 15	up to 5	+/- 15	5 +/- 0.25	-20 to +70	APF (970/1000) APF (980/1000)
TOTX177PL(F,T)	TORX177PL(F,T)	0.1 to 15	up to 5	+/- 15	5 +/- 0.25	-20 to +70	APF (970/1000) APF (980/1000)

Transmitting Module	Receiving Module	Data Rate (Mb/s, NRZ)	Transmission Distance (m)	Pulse Width Distortion (ns)	Power Supply Voltage (V)	Operating Temp. (˚C)	Appropriate Optical Fiber (μm)
TOTX147(F,T)	TORX147(F,T)	0.1 to 15	up to 5	+/- 15	2.7 to 3.6	-20 to +70	APF (970/1000) APF (980/1000)
TOTX147L(F,T)	TORX147L(F,T)	0.1 to 15	up to 5	+/- 15	2.7 to 3.6	-20 to +70	APF (970/1000) APF (980/1000)
TOTX147PL(F,T)	TORX147PL(F,T)	0.1 to 15	up to 5	+/- 15	2.7 to 3.6	-20 to +70	APF (970/1000) APF (980/1000)

Package Variation for Digital Audio Toslink

TOTX177/TORX177 TOTX147/TORX147	TOTX177L/TORX177L TOTX147L/TORX147L	TOTX177PL/TORX177PL TOTX147PL/TORX147PL
Standard Package	Standard with Shutter	Mini with Shutter
		

For High Speed Data Transmission for Consumer Application

Tranceiving Duplex Module	Data Rate (Mb/s, NRZ)	Wavelength (nm)	Transmission Distance (m)	Power Supply Voltage (V)	Operating Temp. (˚C)	Appropriate Optical Fiber Cable (μm)
TODX2402(F) 	50 to 250	650	up to 20 (250Mb/s) up to 50 (125Mb/s)	3.3 +/- 0.3	0 to +60 (250Mb/s) -10 to +70 (125Mb/s)	APF (980/1000)

For High Speed Data Transmission for Industrial Application

Tranceiving Duplex Module	Data Rate (Mb/s, NRZ)	Wavelength (nm)	Transmission Distance (m)	Pulse Width Distortion (ns)	Power Supply Voltage (V)	Operating Temp. (˚C)	Appropriate Optical Fiber Cable (μm)
TODX283 	DC to 50	650	up to 100 (PCF) up to 10 (APF)	+/-7	5 +/- 0.25	-10 to +70	PCF (200/230) APF (980/1000)
TODX2701(F) 	20 to 125	650	up to 100 (GI-PCF) up to 20 (APF)		3.3 +/- 0.3	-10 to +70	GI-PCF (200/230) APF (980/1000)

Transmitting Module	Receiving Module	Data Rate (Mb/s,NRZ)	Wavelength (nm)	Transmission Distance (m)	Power Supply Voltage (V)	Operating Temp. (˚C)	Appropriate Optical Fiber Cable (μm)
TORX1400(F)	TORX1400(F)	20 to 125	650	up to 50	3.3 +/- 0.3	-10 to 70	APF (980/1000)
TORX1701(F)	TORX1701(F)	20 to 125	650	up to 20/100	3.3 +/- 0.3	-10 to 70	APF (980/1000)

Others

Power Supply Voltage 5.0+/-0.25 (V)

Product Name	Data Rate (Mb/s, NRZ)	Wavelength (nm)	Transmission Distance (m)	Pulse Width Distortion (ns)	Operating Temp. (˚C)	Appropriate Optical Fiber Cable (μm)	Remarks
TOTX173A(F) Transmitter	DC to 6	650	0.2 to 20	-20 to 20	-20 to 70	APF (980/1000)	Board mount
TORX173(F) Receiver							
TOTX176A(F) Transmitter							Panel mount
TORX176(F) Receiver							
TOTX197A(F) Transmitter	DC to 6		0.2 to 40	-55 to 55	-40 to 85		Board mount
TORX196(F) Receiver							
TOTX195A(F) Transmitter	DC to 10		0.2 to 50	-30 to 30			
TORX194(F) Receiver							
TODX297A(F) Tranceiver	DC to 6		0.2 to 40	-55 to 55			
TODX295A(F) Tranceiver	DC to 10		0.2 to 50	-30 to 30			

3-2. Photo Sensor

Toshiba has photo sensor products in optoelectronics product lines, including infrared LED, photodiodes, interrupters and so on, for various applications.

Illuminance Sensor

Product	Light Current: $I_L(1)$ (μA) *Vcc=3V, Ev=100lx, CIE standard A light source	Light Current: I_L (2) (μA) *Vcc=3V, Ev=100lx, Florescent light			Light Current Ratio: $I_L(1)/I_L(2)$		Dark Current: I_{LEAK} (μA)	Remarks
Size (mm)	Typ. (Note)	Min.	Typ.	Max.	Typ.	Max.	Max.	
TPS851 2.0x2.1x0.7	62	37	52	74	1.2	1.7	0.1	
TPS852 1.6x1.6x0.55	48	27	40	54	1.2	1.7	0.1	
TPS853 2.0x2.1x0.7	62	37	52	74	1.2	1.7	0.1	standby terminal
TPS856 1.6x1.6x0.55	57	40	57	80	1		0.1	standby terminal

*Note: Color temperature = 2870K, approximated incandescence light.

TPS851/TPS853 **TPS852/TPS856**

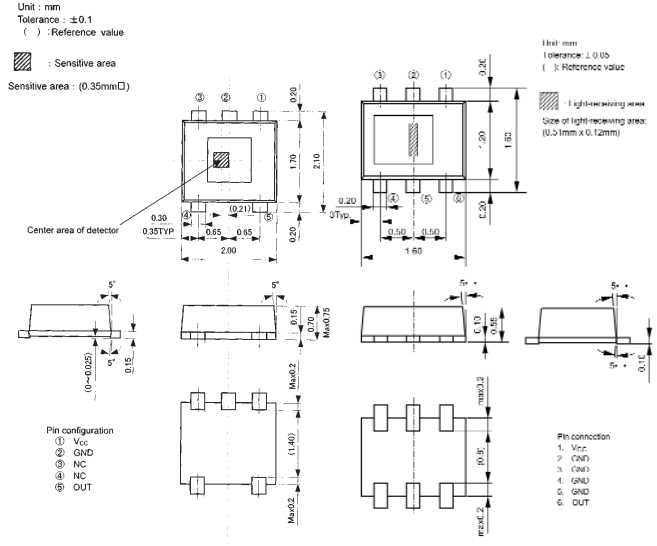
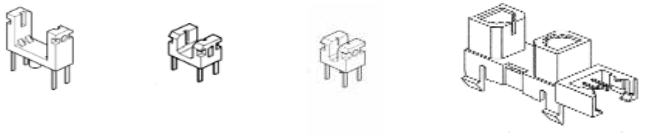


Photo Interrupter

Product Size (mm)	Package Type	GaP (mm)	Slit width (mm)	Electrical Characteristics (Ta=25°C) Current Transfer Ratio (%) Min.	Max.	IF(mA)	Vce(V)
TLP841	PCB direct mount	5	0.5	2.5	50	10	2
TLP844		2	0.3	3.5	35	5	2
TLP848		1.2	0.3	3	24	5	2
TLP1243(C8)	Snap-in mount	5	0.7	2.5	100	10	2

[1]Remarks: RoHS High CRT
[2]Remarks: RoHS Topr=95deg

TLP841 TLP844 TLP848 TLP1243(C8)



3-3. Photo Coupler

Toshiba is one of the top photocoupler suppliers in the world. We have a broad product line-up with various output options, including Transistor, Triac, MOSFET and IC, to meet different customers' requirements. Toshiba recently introduced the SDIP package, which has become one of the most popular in the industry.

Package		SSOP4	SOP4	SOP16	2.54SOP4	2.54SOP6	2.54SOP8
Output type	Transistor		TLP280 TLP281 TLP283	TLP280-4 TLP281-4 TLP283-4			
	Darlington transistor						
	Diode						
	Thyristor						
	Triac						
	IC						
	Photorelay	TLP3212 TLP3213 TLP3214 TLP3215 TLP3216 TLP3217 TLP3230 TLP3231 TLP3240 TLP3241 TLP3250			TLP176A TLP172A TLP176D TLP172G TLP176G TLP179D TLP3113 TLP3114 TLP3115 TLP3116 TLP3118 TLP3119 TLP3130 TLP3131 TLP3122	TLP197A TLP197G TLP192A TLP192G TLP199D TLP3120	TLP200D TLP206A TLP206G TLP202A TLP202G TLP209D TLP3125
	Photovoltaic	TLP3904 TLP3914 TLP3924					

Also, the well-known white mold technology introduced by Toshiba achieves the high level of optical coupling efficiency. Toshiba is working on developing a variety of package, function and efficient production process to offer one of the best lines in the industry.

MFSOP6	SDIP	DIP4	DIP6	DIP8	DIP16	Page for product features
TLP180 TLP181 TLP124 TLP126 TLP130 TLP131 TLP137		TLP320 TLP421 TLP620 TLP621 TLP624 TLP626 TLP628 TLP629	TLP330 TLP331 TLP332 TLP531 TLP532 TLP630 TLP631 TLP632 TLP731 TLP732 TLP733 TLP734	TLP320-2 TLP620-2 TLP621-2 TLP624-2 TLP626-2 TLP628-2 TLP629-2	TLP320-4 TLP620-4 TLP621-4 TLP624-4 TLP626-4 TLP628-4 TLP629-4	p. 18 – 24
TLP127		TLP523 TLP627 TLP627A	TLP371 TLP372 TLP373 TLP570 TLP571 TLP572	TLP523-2 TLP627-2	TLP523-4 TLP627-4	p. 24
		TLP722				p. 25
TLP141G			TLP541G TLP545J TLP641G TLP641J TLP741G TLP741J TLP747G TLP747J	TLP511GA TLP542G TLP543J TLP611J		p. 25 – 26
TLP160G TLP160J TLP161G TLP161J TLP165J TLP166J TLP168J TLP260J (TLP261J)		TLP525G TLP360J TLP361J TLP363J	TLP560G TLP560J TLP561G TLP561J TLP3022(S) TLP3023(S) TLP3042(S) TLP3043(S) TLP3052(S) TLP3062(S) TLP3063(S) TLP3064(S) TLP762J TLP763J	TLP525G-2	TLP525G-4	p. 26 – 28
TLP112 TLP112A TLP113 TLP114A TLP115 TLP115A TLP116 TLP102 TLP106	TLP719 TLP701 TLP702 TLP705 TLP706		TLP512 TLP513	TLP250 TLP251 TLP351 TLP350 TLP550 TLP551 TLP552 TLP553 TLP554 TLP555 TLP557 TLP558 TLP559 TLP651 TLP750 TLP751 TLP759 TLP2200 TLP2530 TLP2531 TLP2601 TLP2630 TLP2631 6N136 6N137 6N139		p. 30 – 34
TLP3110 TLP3111		TLP224G TLP225A TLP227A TLP227G TLP227GA TLP222A TLP222G	TLP594G TLP592A TLP597A TLP592G TLP597G TLP597GA TLP598AA TLP598GA TLP797GA TLP797J TLP798GA TLP3542	TLP224G-2 TLP227A-2 TLP227G-2 TLP227GA-2 TLP3540 TLP222A-2 TLP222G-2		p. 35 – 39
TLP190B TLP191B			TLP590B TLP591B			p. 34

Transistor Output
For Switching Supplies and DC/DC Converters

Part Number	Features	CTR (%)				V_{CEO}	BVs
		Rank	Min	Max	@I_F, V_{CE}		
TLP421 **TLP421F**	4-pin DIP High isolation voltage UL-approved (double protection) EN60747-approved with option (D4) SEMKO-approved	–	50	600	5 mA, 5 V	80 V	5000 Vrms
		Y	50	150			
		GR	100	300			
		BL	200	600			
		GB	100				
		GRL	100	200			
		GRH	150	300			
TLP181	Mini-flat 6-pin MFSOP General-purpose High CTR SEMKO-approved	–	50	600	5 mA, 5 V	80 V	3750 Vrms
		Y	50	150			
		GR	100	300			
		BL	200	600			
		GB	100				
		YH	75	150			
		GRL	100	200			
		GRH	150	300			
		BLL	200	400			
TLP281	4-pin SOP Lead pitch = 1.27 mm General-purpose SEMKO-approved	–	50	600	5 mA, 5 V	80 V	2500 Vrms
		Y	50	150			
		GR	100	300			
		BL	200	600			
		GB	100				
		YH	75	150			
		GRL	100	200			
		GRH	150	300			
		BLL	200	400			
TLP283	4-pin SOP Lead pitch = 1.27 mm Low input drive current High-speed switching	–	100	400	1 mA, 5 V	100 V	2500 Vrms

For Home Appliances (HAs)

Part Number	Features	CTR (%)				V_{CEO}	BVs
		Rank	Min	Max	@I_F, V_{CE}		
TLP620 **TLP620F**	4-pin DIP AC input EN60747-approved with option (D4) SEMKO-approved	–	50	600	±5 mA, 5 V	55 V	5000 Vrms
		Y	50	150			
		GR	100	300			
		BL	200	600			
		GB	100				
TLP180	Mini-flat 6-pin MFSOP AC input SEMKO-approved	–	50	600	±5 mA, 5 V	80 V	3750 Vrms
		Y	50	150			
		GR	100	300			
		BL	200	600			
		GB	100				
TLP280	4-pin SOP Lead pitch = 1.27 mm AC input SEMKO-approved	–	50	600	±5 mA, 5 V	80 V	2500 Vrms
		Y	50	150			
		GR	100	300			
		BL	200	600			
		GB	100				

For Programmable Logic Controllers (PLCs)

Part Number	Features	CTR (%)				V_{CEO}	BVs
		Rank	Min	Max	@I_F, V_{CE}		
TLP280-4	16-pin SOP 4-channel version of the TLP280 Lead pitch = 1.27 mm AC input SEMKO-approved	–	50	600	±5 mA, 5 V	80 V	2500 Vrms
		GB	100				
TLP281-4	16-pin SOP 4-channel version of the TLP281 Lead pitch = 1.27 mm SEMKO-approved	–	50	600	5 mA, 5 V		
		GB	100				
TLP283-4	16-pin SOP 4-channel version of the TLP283 Lead pitch = 1.27 mm Low input drive current High-speed switching	–	100	400	1 mA, 5 V	100 V	2500 Vrms

For Telecommunications

Part Number	Features	CTR (%)				V_{CEO}	BVs
		Rank	Min	Max	@I_F, V_{CE}		
TLP629	4-pin DIP High input current I_F = 150 mA DC input	–	20	80	100 mA, 1 V	55 V	5000 Vrms
TLP320	4-pin DIP High input current AC input I_F = 150 mA	–	20	80	±100 mA, 1 V	55 V	5000 Vrms
TLP330	6-pin DIP High input current AC input I_F = 150 mA	–	20	80	±100 mA, 1 V	55 V	5000 Vrms
TLP628	4-pin DIP High V_{CEO} V_{CEO} = 350 V	–	50	600	5 mA, 5 V	350 V	5000 Vrms
		GB	100				

Low Input Type

Part Number	Features	CTR (%) Rank	CTR (%) Min	CTR (%) Max	CTR (%) @IF, VCE	VCEO	BVs
TLP124	Mini-flat 6-pin MFSOP Low input drive current	–	100	1200	1 mA, 0.5 V	80 V	3750 Vrms
		BV	200				
TLP126	Mini-flat 6-pin MFSOP AC input Low input drive current	–	100	1200	±1 mA, 0.5 V		
TLP624	4-pin DIP Low input drive current BSI-approved	–	100	1200	1 mA, 0.5 V	55 V	5000 Vrms
		BV	200				
TLP626	4-pin DIP Low input drive current AC input BSI-approved	–	100	1200	±1 mA, 0.5 V		
		BV	200				
TLP137	Mini-flat 6-pin MFSOP Low input drive current Internal base onnection	–	100	1200	1 mA, 0.5 V	80 V	3750 Vrms
		BV	200				
TLP331	6-pin DIP Low input drive current Internal base onnection	–	100	1200	1 mA, 0.5 V	55 V	5000 Vrms
		BV	200				
TLP332	6-pin DIP Low input drive current No internal base connection	–	100				
		BV	200				

1-Channel Type (other than those above)

Part Number	Features	CTR (%) Rank	CTR (%) Min	CTR (%) Max	CTR (%) @IF, VCE	VCEO	BVs
TLP621 **TLP621F**	4-pin DIP High isolation voltage UL-approved (double protection) EN60747-approved with option (D4) SEMKO-approved	Y	50	150	5 mA, 5 V	55 V	5000 Vrms
		GR	100	300			
		BL	200	600			
		GB	100				
		YH	75	150			
		GRL	100	200			
		GRH	150	300			
		BLL	200	400			
TLP130	Mini-flat 6-pin MFSOP AC input Internal base connection	–	50	600	±5 mA, 5 V	80 V	3750 Vrms
		Y	50	150			
		GR	100	300			
		BL	200	600			
		GB	100				
TLP131	Mini-flat 6-pin MFSOP General-purpose Internal base connection	–	50	600	5 mA, 5 V		
		Y	50	150			
		GR	100	300			
		BL	200	600			
		GB	100				
TLP630	6-pin DIP AC input High isolation voltage Internal base connection	–	50	600	±5 mA, 5 V	55 V	5000 Vrms
		Y	50	150			
		GR	100	300			
		BL	200	600			
		GB	100				
TLP631	6-pin DIP General-purpose Internal base connection	–	50	600	5 mA, 5 V		
		Y	50	150			
		GR	100	300			
		BL	200	600			
		GB	100				
TLP632	6-pin DIP General-purpose High EMI immunity No internal base connection	–	50	600			
		Y	50	150			
		GR	100	300			
		BL	200	600			
		GB	100				
TLP731	6-pin DIP EN60747-approved with option (D4) SEMKO-approved Internal base connection	–	50	600	5 mA, 5 V	55 V	4000 Vrms
		Y	50	150			
		GR	100	300			
		BL	200	600			
		GB	100				
TLP732	6-pin DIP EN60747-approved with option (D4) SEMKO-approved No internal base connection	–	50	600			
		Y	50	150			
		GR	100	300			
		BL	200	600			
		GB	100				

1-Channel Type (other than those above)

Part Number	Features	CTR (%)				V_{CEO}	BVs
		Rank	Min	Max	@I_F, V_{CE}		
TLP733 **TLP733F**	6-pin DIP EN60747-approved with option (D4) SEMKO-approved No internal base connection	–	50	600	5 mA, 5 V	55 V	4000 Vrms
		Y	50	150			
		GR	100	300			
		BL	200	600			
		GB	100				
TLP734 **TLP734F**	6-pin DIP EN60747-approved with option (D4) SEMKO-approved Internal base connection	–	50	600			
		Y	50	150			
		GR	100	300			
		BL	200	600			
		GB	100				
CNY17-2	Direct replacement for CNY17 Series	–	63	125	10 mA, 5 V	70 V	2500 Vrms
CNY17-3			100	200			
CNY17-4			160	320			

2-Channel Type

Part Number	Features	CTR (%)				V_{CEO}	BVs
		Rank	Min	Max	@I_F, V_{CE}		
TLP621-2	8-pin DIP Dual-channel version of the TLP621 EN60747-approved with option (D4) SEMKO-approved	–	50	600	5 mA, 5 V	55 V	5000 Vrms
		Y	50	150			
		GR	100	300			
		BL	200	600			
		GB	100				
TLP624-2	8-pin DIP Dual-channel version of the TLP624 BSI-approved	–	100	1200	1 mA, 0.5 V	55 V	5000 Vrms
		BV	200				
TLP628-2	8-pin DIP Dual-channel version of the TLP628	–	50	600	5 mA, 5 V	350 V	5000 Vrms
		GB	100				
TLP629-2	8-pin DIP Dual-channel version of the TLP629	–	20	80	100 mA, 1 V	55 V	5000 Vrms

2-Channel Type with AC Input

Part Number	Features	CTR (%)				V_{CEO}	BVs
		Rank	Min	Max	@I_F, V_{CE}		
TLP620-2	8-pin DIP Dual-channel version of the TLP620 EN60747-approved with option (D4) SEMKO-approved	–	50	600	±5 mA, 5 V	55 V	5000 Vrms
		GB	100				
TLP626-2	8-pin DIP Dual-channel version of the TLP626 BSI-approved	–	100	1200	±1 mA, 0.5 V	55 V	5000 Vrms
		BV	200				
TLP320-2	8-pin DIP Dual-channel version of the TLP320	–	20	80	±100 mA, 1 V	55 V	5000 Vrms

4-Channel Type

Part Number	Features	CTR (%)				V_{CEO}	BVs
		Rank	Min	Max	@I_F, V_{CE}		
TLP621-4	16-pin DIP 4-channel version of the TLP621 EN60747-approved with option (D4)	–	50	600	5 mA, 5 V	55 V	5000 Vrms
		GB	100				
TLP624-4	16-pin DIP 4-channel version of the TLP624 BSI-approved	–	100	1200	1 mA, 0.5 V	55 V	5000 Vrms
		BV	200				
TLP628-4	16-pin DIP 4-channel version of the TLP628	–	50	600	5 mA, 5 V	350 V	5000 Vrms
		GB	100				
TLP629-4	16-pin DIP 4-channel version of the TLP629	–	20	80	100 mA, 1 V	55 V	5000 Vrms

4-Channel Type with AC input

Part Number	Features	CTR (%)				V_{CEO}	BVs
		Rank	Min	Max	@I_F, V_{CE}		
TLP620-4	16-pin DIP 4-channel version of the TLP620 EN60747-approved with option (D4)	–	50	600	±5 mA, 5 V	55 V	5000 Vrms
		GB	100				
TLP626-4	16-pin DIP 4-channel version of the TLP626 BSI-approved	–	100	1200	±1 mA, 0.5 V	55 V	5000 Vrms
		BV	200				
TLP320-4	16-pin DIP 4-channel version of the TLP320	–	20	80	±100 mA, 1 V	55 V	5000 Vrms

Darlington Transistor Output
4-Pin Package Type

Part Number	Features	CTR (%)		VCE(sat) (V)		VCEO	BVs
		Min	@IF, VCE	Max	@IC, VF		
TLP127	Mini-flat 6-pin MFSOP High VCEO	1000	1 mA, 1 V	1.2	100 mA, 10 mA	300 V	2500 Vrms
TLP627	4-pin DIP High VCEO BSI-approved SEMKO-approved	1000	1 mA, 1 V	1.2	100 mA, 10 mA	300 V	5000 Vrms

6-Pin Package Type

Part Number	Features	CTR (%)		VCE(sat) (V)		VCEO	BVs
		Min	@IF, VCE	Max	@IC, VF		
TLP371	6-pin DIP High VCEO SEMKO-approved Internal base connection	1000	1 mA, 1 V	1.2	100 mA, 10 mA,	300 V	5000 Vrms
TLP372	6-pin DIP High VCEO No internal base connection SEMKO-approved						
TLP373	6-pin DIP High VCEO Large emitter-collector distance SEMKO-approved						
TLP570	6-pin DIP General-purpose High EMI immunity	1000	1 mA, 1 V	1.2	100 mA, 10 mA,	35 V	2500 Vrms
TLP571	6-pin DIP General-purpose Internal base connection						
TLP572	6-pin DIP General-purpose Built-in RBE	1000	1 mA, 1.2 V	1.2	100 mA, 10 mA,	55 V	2500 Vrms

2-Channel Type

Part Number	Features	CTR (%)		VCE(sat) (V)		VCEO	BVs
		Min	@IF, VCE	Max	@IC, VF		
TLP627-2	8-pin DIP Dual-channel version of the TLP627 BSI-approved SEMKO-approved	1000	1 mA, 1 V	1.2	100 mA, 10 mA,	300 V	5000 Vrms

4-Channel Type

Part Number	Features	CTR (%)		VCE(sat) (V)		VCEO	BVs
		Min	@IF, VCE	Max	@IC, VF		
TLP627-4	16-pin DIP 4-channel version of the TLP627 BSI-approved	1000	1 mA, 1 V	1.2	100 mA, 10 mA,	300 V	5000 Vrms

Diode Output

Part Number	Features	CTR (%)		ILEAK (nA)		VKAO	BVs
		Min	@IF	Max	@VKA		
TLP722	4-pin DIP General-purpose High-speed response SEMKO-approved	0.1	10 mA	50	10 V	30 V	4000 Vrms

Thyristor Output
AC 100 to 120 V Line Type

Part Number	Features	IFT	VTM		VDRM	BVs
		Max	Max	@ITM		
TLP141G	Mini-flat 6-pin MFSOP General-purpose	10 mA	1.3 V	100 mA	400 V	2500 Vrms
TLP541G	6-pin DIP General-purpose Low IFT	7 mA	1.3 V	100 mA	400 V	2500 Vrms
TLP641G	6-pin DIP General-purpose High isolation voltage	7 mA	1.3 V	100 mA	400 V	5000 Vrms
TLP741G	6-pin DIP EN60747-approved with option (D4) Internal creepage: 4 mm (min) SEMKO-approved	10 mA	1.3 V	100 mA	400 V	4000 Vrms
TLP747G **TLP747GF**	6-pin DIP EN60747-approved with option (D4) Internal creepage: 4 mm (min) SEMKO-approved	15 mA	1.3 V	100 mA	400 V	4000 Vrms
TLP542G	8-pin DIP Large anode-cathode distance (SCR)	7 mA	1.3 V	100 mA	400 V	2500 Vrms
TLP511GA	8-pin DIP Bidirectional thyristor pair Low trigger current	7 mA	1.3 V	100 mA	400 V	

AC 200 to 240 V Line Type

Part Number	Features	I_{FT}			V_{DRM}	V_{TM} BVs
		Max	Max	@I_{TM}		
TLP545J	6-pin DIP High V_{DRM}	10 mA	1.3 V	100 mA	600 V	2500 Vrms
TLP641J	6-pin DIP High V_{DRM} High isolation voltage	10 mA	1.3 V	100 mA	600 V	5000 Vrms
TLP741J	6-pin DIP EN60747-approved with option (D4) Internal creepage: 4 mm (min) SEMKO-approved	10 mA	1.3 V	100 mA	600 V	4000 Vrms
TLP747J **TLP747JF**	6-pin DIP EN60747-approved with option (D4) Internal creepage: 4 mm (min) SEMKO-approved	15 mA	1.3 V	100 mA	600 V	4000 Vrms
TLP543J	8-pin DIP Large anode-cathode distance (SCR)	10 mA	1.3 V	100 mA	600 V	2500 Vrms
TLP611J	8-pin DIP Bidirectional thyristor pair High isolation voltage	10 mA	1.3 V	100 mA	600 V	5000 Vrms

Triac Output
AC 200 to 240 V Line Type

Part Number	Features	I_{FT}		V_{TM}		V_{DRM}	BVs
		Rank	Max	Max	@I_{TM}		
TLP160G	Mini-flat 6-pin MFSOP Non-zero cross	—	10 mA			400 V	2500 Vrms
		IFT7	7 mA				
		IFT5	5 mA				
TLP161G	Mini-flat 6-pin MFSOP Zero cross	—	10 mA			400 V	
		IFT7	7 mA				
		IFT5	5 mA				
TLP160J **TLP165J**	Mini-flat 6-pin MFSOP Non-zero cross	—	10 mA			600 V	
		IFT7	7 mA				
TLP161J **TLP166J**	Mini-flat 6-pin MFSOP Zero cross	—	10 mA	2.8 V	70 mA	600 V	
		IFT7	7 mA				
TLP168J	Mini-flat 6-pin MFSOP Zero cross Low I_{FT}	—	3 mA			600 V	
TLP260J	Mini-flat 6-pin MFSOP Non-zero cross	—	10 mA			600 V	3000 Vrms
TLP261J	Mini-flat 6-pin MFSOP Zero cross	—	10 mA			600 V	3000 Vrms

For Office Automation (OA) Equipment

Part Number	Features	I_{FT}		V_{TM}		V_{DRM}	BVs
		Rank	Max	Max	@I_{TM}		
TLP360J **TLP360JF**	4-pin DIP Non-zero cross EN60747-approved with option (D4)	—	10 mA	2.8 V	70 mA	600 V	5000 Vrms
		IFT7	7 mA				
TLP361J **TLP361JF**	4-pin DIP Zero cross EN60747-approved with option (D4)	—	10 mA	2.8 V	70 mA	600 V	5000 Vrms
		IFT7	7 mA				
TLP363J **TLP363JF**	4-pin DIP Zero cross EN60747-approved with option (D4) High impulse noise immunity V_N = 2000 V (typ.)	—	10 mA	2.8 V	70 mA	600 V	5000 Vrms

AC 100 to 120 V Line Type

Part Number	Features	I_{FT}		V_{TM}		V_{DRM}	BVs
		Rank	Max	Max	@I_{TM}		
TLP3022(S) **TLP3022F(S)**	6-pin DIP Direct replacement for XXX3020/3021/3022 EN60747-approved SEMKO-approved	—	10 mA	3 V	100 mA	400 V	5000 Vrms
TLP3023(S) **TLP3023F(S)**	6-pin DIP Direct replacement for XXX3023 EN60747-approved SEMKO-approved	—	5 mA				
TLP3042(S) **TLP3042F(S)**	6-pin DIP Direct replacement for XXX3040/3041/3042 EN60747-approved SEMKO-approved	—	10 mA	3 V	100 mA	400 V	5000 Vrms
TLP3043(S) **TLP3043F(S)**	6-pin DIP Direct replacement for XXX3043 EN60747-approved SEMKO-approved	—	5 mA				

AC 200 to 240 V Line Type

Part Number	Features	I_{FT}		V_{TM}		V_{DRM}	BVs
		Rank	Max	Max	@I_{TM}		
TLP762J **TLP762JF**	6-pin DIP Internal creepage: 4 mm (min) EN60747-approved with option (D4) SEMKO-approved Non-zero cross-on	—	10 mA	3 V	100 mA	600 V	4000 Vrms
TLP763J **TLP763JF**	6-pin DIP Internal creepage: 4 mm (min) EN60747-approved with option (D4) SEMKO-approved Zero cross	—	10 mA	3 V	100 mA	600 V	4000 Vrms
TLP3052(S) **TLP3052F(S)**	6-pin DIP EN60747-approved with option (D4) High V_{DRM} SEMKO-approved Non-zero cross-on	—	10 mA	3 V	100 mA	600 V	5000 Vrms
TLP3062(S) **TLP3062F(S)**	6-pin DIP EN60747-approved with option (D4) SEMKO-approved High V_{DRM} Zero cross	—	10 mA	3 V	100 mA	600 V	5000 Vrms
TLP3063(S) **TLP3063F(S)**	6-pin DIP EN60747-approved with option (D4) SEMKO-approved High V_{DRM} Zero cross	—	5 mA				
TLP3064(S) **TLP3064F(S)**	6-pin DIP Low trigger current EN60747-approved with option (D4) SEMKO-approved Zero cross	—	3 mA				

Multi-channel Type

Part Number	Features	I_{FT}		V_{TM}		V_{DRM}	BVs
		Rank	Max	Max	@I_{TM}		
TLP525G-2	8-pin DIP Dual-channel version of the TLP525G	—	10 mA	3 V	100 mA	400 V	2500 Vrms
TLP525G-4	16-pin DIP 4-channel version of the TLP525G	—	10 mA				

IC Output
For Plasma Display Panels and Factory Automations (FAs)

Part Number	Features	Data Rate (NRZ) (Max)	Output Form	I_{FHL} (Max)	BVs
TLP116	Mini-flat 6-pin MFSOP High speed: 20 MBd High CMR Low power dissipation	60 ns	Totem pole output (Inverter logic)	5 mA	3750 Vrms

For IPM Drivers

Part Number	Features	Data Rate (NRZ) (Max)	Output Form/CTR	@I_F	BVs
TLP102	Mini-flat 6-pin MFSOP Direct drive of an IPM High CMR	400 ns	Totem pole output (Inverter logic)	I_{FHL} = 3 mA (max)	3750 Vrms
TLP106	Mini-flat 6-pin MFSOP Direct drive of an IPM High CMR	400 ns	Totem pole output (Buffer logic type)	I_{FLH} = 3 mA (max)	3750 Vrms
TLP702 **TLP702F**	6-pin SDIP Direct drive of an IPM High CMR	600 ns	Totem pole output (Inverter logic)	I_{FHL} = 5 mA (max)	5000 Vrms
TLP706 **TLP706F**	6-pin SDIP Direct drive of an IPM High CMR	600 ns	Totem pole output (Buffer logic type)	I_{FLH} = 5 mA (max)	5000 Vrms
TLP114A(IGM)	Mini-flat 6-pin MFSOP High CMR	0.8 µs	25% (min)	10 mA	3750 Vrms
TLP559(IGM)	8-pin DIP High CMR	0.8 µs	25% (min)	10 mA	2500 Vrms
TLP759(IGM) **TLP759F(IGM)**	8-pin DIP High CMR EN60747-approved with option (D4) SEMKO-approved	0.8 µs	25% (min)	10 mA	5000 Vrms

For IGBT/MOSFET/Giant Transistor Gate Drive

Part Number	Features	Data Rate (NRZ) (Max)	Output Form	I_{FHL} (Max)	BVs
TLP557	8-pin DIP High-Speed Direct drive of a power transistor	5 µs	Constant current output: 0.25 A	5 mA	2500 Vrms
TLP251 **TLP251F**	8-pin DIP Direct drive of a small-power IGBT/MOSFET EN60747-approved	1.0 µs	Peak output current (max): ±0.4 A	5 mA	2500 Vrms
TLP351 **TLP351F**	8-pin DIP Direct drive of a medium-power IGBT/MOSFET High-speed	0.7 µs	Peak output current (max): ±0.6 A	5 mA	3750 Vrms
TLP701 **TLP701F**	6-pin SDIP Direct drive of a medium-power IGBT/MOSFET High-speed	0.7 µs	Peak output current (max): ±0.6 A	5 mA	5000 Vrms
TLP705 **TLP705F**	8-pin SDIP Direct drive of a small-power IGBT/MOSFET 250-kHz high speed	0.2 µs	Peak output current (max): ±0.45 A	5 mA	5000 Vrms
TLP250 **TLP250F**	8-pin DIP Direct drive of a medium-power IGBT/MOSFET High-speed EN60747-approved	0.5 µs	Peak output current (max): ±1.5 A	5 mA	2500 Vrms
TLP250(INV) **TLP250F(INV)**	8-pin DIP Direct drive of a medium-power IGBT/MOSFET High-speed	0.5 µs	Peak output current (max): ±2.0 A	5 mA	
TLP350 **TLP350F**	8-pin DIP Direct drive of a medium-power IGBT/MOSFET High CMR High-speed	0.5 µs	Peak output current (max): ±2.5 A	5 mA	3750 Vrms

1-Channel Type (other than those above)

Part Number	Features	Data Rate (NRZ) (Typ.)	CTR	@I_F	BVs
TLP553	8-pin DIP High-speed Low input drive current	300 kbit/s	400% (min)	0.5 mA	2500 Vrms
TLP112	Mini-flat 6-pin MFSOP High-speed, High CMR	1 Mbit/s	10% (min)	16 mA	2500 Vrms
TLP112A	High CTR version of the TLP112		20% (min)		
TLP114A	Mini-flat 6-pin MFSOP High CMR version of the TLP112A	1 Mbit/s	20% (min)	16 mA	3750 Vrms
TLP512	6-pin DIP version of the TLP550	1 Mbit/s	20% (min)	16 mA	2500 Vrms
TLP550	8-pin DIP No internal base connection High-speed High CMR	1 Mbit/s	10% (min) (19% min for rank O)	16 mA	2500 Vrms
TLP559	8-pin DIP High CMR version of the TLP550	1 Mbit/s	20% (min)	16 mA	2500 Vrms
TLP551	8-pin DIP Internal base connection High-speed	1 Mbit/s	10% (min) (19% min for rank O)	16 mA	2500 Vrms
TLP651	8-pin DIP High isolation voltage Internal base connection High-speed	1 Mbit/s	10% (min) (19% min for rank O)	16 mA	5000 Vrms
TLP750 **TLP750F**	8-pin DIP High isolation voltage High CMR EN60747-approved with option (D4) SEMKO-approved	1 Mbit/s	10% (min) (19% min for rank O)	16 mA	
TLP751 **TLP751F**	8-pin DIP High isolation voltage Internal base connection EN60747-approved with option (D4) SEMKO-approved	1 Mbit/s	10% (min)	16 mA	
TLP759 **TLP759F**	8-pin DIP IEC60950 design standard version of the TLP559 EN60747-approved with option (D4) SEMKO-approved	1 Mbit/s	20% (min)	16 mA	
TLP719 **TLP719F**	6-pin SDIP High CMR	1 Mbit/s	20% (min)	16 mA	5000 Vrms

1-Channel Type (other than those above)

Part Number	Features	Data Rate (NRZ) (Typ.)	Output Form	I_{FH}, I_{FL} (Max)	BVs
TLP555	8-pin DIP Low input current High-speed High Vcc operation	5 Mbit/s	3-state output	1.6 mA	2500 Vrms
TLP558	8-pin DIP Inverted logic version of the TLP555	5 Mbit/s	3-state output	1.6 mA	
TLP2200	8-pin DIP Low input current High-speed High Vcc operation	5 Mbit/s	3-state output	1.6 mA	
TLP113	Mini-flat 6-pin MFSOP High-speed Logic output	10 Mbit/s	Open-collector	10 mA	2500 Vrms
TLP115	Mini-flat 6-pin MFSOP High CMR version of the TLP113	10 Mbit/s	Open-collector	10 mA	
TLP115A	Highly Sensitive version of the TLP115			5 mA	
TLP513	6-pin DIP 6-pin package version of the TLP552	10 Mbit/s	Open-collector	5 mA	2500 Vrms
TLP552	8-pin DIP High-speed Logic output	10 Mbit/s	Open-collector	5 mA	
TLP554	8-pin DIP High-speed High CMR version of the TLP552	10 Mbit/s	Open-collector	5 mA	
TLP2601	8-pin DIP High CMR High-speed	10 Mbit/s	Open-collector	5 mA	

2-Channel Type

Part Number	Features	Data Rate (NRZ) (Typ.)	Output Form /CTR	@I_F	
TLP2530	Dual-channel version of the 6N135 and the TLP550	1 Mbit/s	7% (min)	16 mA	2500 Vrms
TLP2531	Dual-channel version of the 6N136 and the TLP550	1 Mbit/s	19% (min)		
TLP2630	Dual-channel version of the 6N137 and the TLP550	10 Mbit/s	Open-collector	I_{FH} = 5 mA (max)	
TLP2631	High CMR Dual-channel version of the TLP2601	10 Mbit/s	Open-collector	I_{FH} = 5 mA (max)	

JEDEC Type

Part Number	Features	Data Rate (NRZ) (Typ.)	CTR	@I_F	BVs
6N135	JEDEC-compliant High-speed	1 Mbit/s	7% (min)	16 mA	2500 Vrms
6N136			19% (min)		
6N137	JEDEC-compliant High-speed	10 Mbit/s	700% (typ.)	5 mA	
6N138	JEDEC-compliant High CTR High-speed	300 kbit/s	300% (min)	1.6 mA	
6N139			400% (min)	0.5 mA	

Photovoltaic Output

Part Number	Features	Short-Circuit Current (μA)			Open Voltage (V)		BVs
		Rank	Min	@I_F	Min	@I_F	
TLP190B	Mini-flat 6-pin MFSOP	—	12	10 mA	7	10 mA	2500 Vrms
TLP191B	Mini-flat 6-pin MFSOP Built-in shunt regulator	—	24	20 mA	7	20 mA	
TLP590B	6-pin DIP General-purpose	—	12	10 mA	7	10 mA	
		C20	20				
TLP591B	6-pin DIP Built-in shunt regulator	—	24	20 mA	7	20 mA	
		C40	40				
TLP3904	4-pin SSOP General-purpose	—	5	10 mA	7	10 mA	1500 Vrms
TLP3914	4-pin SSOP High short-circuit current	—	20	10 mA	7	10 mA	
TLP3924	4-pin SSOP High open voltage	—	4	10 mA	30	10 mA	

Photorelays
MOSFET Output, 1-Form-A

Part Number	Features	IFT Max	RON Max	RON @IF	RON @ION	VOFF	BVs
TLP3130	4-pin SOP Lead pitch: 2.54 mm COFF: 1 pF (typ.) Ultra low CR: 5 pF×Ω For measuring instruments	4 mA	8 Ω	5 mA	0.16 A	20 V	1500 Vrms
TLP3230	4-pin SSOP COFF: 1 pF (typ.) Ultra low CR: 5 pF×Ω For measuring instruments	4 mA	8 Ω	5 mA	0.16 A		
TLP3250	4-pin SSOP COFF: 0.8 pF (typ.) Ultra low CR:2.5 pF×Ω For measuring instruments	3 mA	5 Ω	5 mA	0.2 A		
TLP3131	4-pin SOP Lead pitch: 2.54 mm COFF: 5 pF (typ.) Ultra low CR: 5 pF×Ω For measuring instruments	4 mA	1.5 Ω	5 mA	0.3 A		
TLP3231	4-pin SSOP COFF: 5 pF (typ.) Ultra low CR: 5 pF×Ω For measuring instruments	4 mA	1.2 Ω	5 mA	0.3 A		
TLP3113	4-pin SOP Lead pitch: 2.54 mm COFF: 0.6 pF (typ.) Ultra low CR:15 pF×Ω For measuring instruments	4 mA	35 Ω	5 mA	0.08 A	40 V	1500 Vrms
TLP3213	4-pin SSOP COFF: 0.6 pF (typ.) Ultra low CR:15 pF×Ω For measuring instruments	4 mA	35 Ω	5 mA	0.08 A		
TLP3116	4-pin SOP Lead pitch: 2.54 mm COFF: 1 pF (typ.) Ultra low CR:10 pF×Ω For measuring instruments	4 mA	15 Ω	5 mA	0.12 A		
TLP3216	4-pin SSOP COFF: 1 pF (typ.) Ultra low CR:10 pF×Ω For measuring instruments	4 mA	15 Ω	5 mA	0.12 A		
TLP3240	4-pin SSOP COFF: 0.45 pF (typ.) Ultra low CR: 5 pF×Ω For measuring instruments	3 mA	14 Ω	5 mA	0.12 A		
TLP3241	4-pin SSOP COFF: 0.7 pF (typ.) Ultra low CR: 5 pF×Ω For measuring instruments	3 mA	10 Ω	5 mA	0.14 A		
TLP3114	4-pin SOP Lead pitch: 2.54 mm COFF: 5 pF (typ.) Ultra low CR:10 pF×Ω For measuring instruments	4 mA	3 Ω	5 mA	0.25 A		
TLP3214	4-pin SSOP COFF: 5 pF (typ.) Ultra low CR:10 pF×Ω For measuring instruments	4 mA	3 Ω	5 mA	0.25 A		
TLP3115	4-pin SOP Lead pitch: 2.54 mm COFF: 10 pF (typ.) Ultra low CR:10 pF×Ω For measuring instruments	4 mA	1.5 Ω	5 mA	0.3 A		
TLP3215	4-pin SSOP COFF: 10 pF (typ.) Ultra low CR:10 pF×Ω For measuring instruments	4 mA	1.5 Ω	5 mA	0.3 A		
TLP3110	4-pin MFSOP COFF: 100 pF (typ.) Low CR For measuring instruments	4 mA	1.2 Ω	5 mA	0.35 A	60 V	1500 Vrms
TLP172A	4-pin SOP Lead pitch: 2.54 mm Low trigger current High output current	3 mA	2 Ω	5 mA	0.4 A		
TLP176A	4-pin SOP Lead pitch: 2.54 mm Low trigger current High output current	3 mA	2 Ω	5 mA	0.4 A		
TLP3122	4-pin SOP Lead pitch: 2.54 mm High output current: ION = 1.0 A (max) For measuring instruments and power lines	3 mA	0.7 Ω	5 mA	1.0 A		
TLP192A	6-pin SOP Lead pitch: 2.54 mm Low trigger current High output current	3 mA	2 Ω	5 mA	0.4 A		
TLP197A	6-pin SOP Lead pitch: 2.54 mm Low trigger current High output current	3 mA	2 Ω	5 mA	0.4 A		

MOSFET Output, 1-Form-A

Part Number	Features	IFT Max	RON Max	RON @IF	RON @ION	VOFF	BVs
TLP225A	4-pin DIP For DC use only	5 mA	1.1 Ω	10 mA	0.5 A	60 V	2500 Vrms
TLP3212	4-pin SSOP COFF: 20 pF (typ.) Low CR: 20 pF×Ω For measuring instruments	5 mA	1.5 Ω	5 mA	0.4 A		1500 Vrms
TLP222A	4-pin DIP Low trigger current General-purpose High output current	3 mA	2 Ω	5 mA	0.5 A		2500 Vrms
TLP227A	4-pin DIP Low trigger current General-purpose SEMKO-approved	3 mA	2 Ω	5 mA	0.5 A		
TLP592A	6-pin DIP Low trigger current High output current	3 mA	2 Ω	5 mA	0.5 A	60 V	2500 Vrms
TLP597A	6-pin DIP Low trigger current High output current SEMKO-approved	3 mA	2 Ω	5 mA	0.5 A		
TLP598AA	6-pin DIP Low trigger current High output current	3 mA	2 Ω	5 mA	0.5 A		
TLP3540	8-pin DIP Low On-resistance High output current: ION = 2.0 A (max) For measuring instruments and power lines	5 mA	0.12 Ω	5 mA	2 A		1500 Vrms
TLP3542	6-pin DIP Low On-resistance High output current: ION = 2.5 A (max) For measuring instruments and power lines	3 mA	0.1 Ω	10 mA	2.5 A		2500 Vrms
TLP3118	4-pin SOP Lead pitch: 2.54 mm COFF: 3.5 pF (typ.) Low CR: 40 pF×Ω For measuring instruments	5 mA	25 Ω	5 mA	0.04 A	80 V	1500 Vrms
TLP3111	4-pin MFSOP COFF: 11 pF (typ.) Low CR For measuring instruments	4 mA	20 Ω	5 mA	0.1 A		
TLP3217	4-pin SSOP COFF: 5 pF (typ.) Low CR: 40 pF×Ω For measuring instruments	5 mA	12 Ω	10 mA	0.12 A		
TLP3119	4-pin SOP Lead pitch: 2.54 mm COFF: 11 pF (typ.) Low CR: 30 pF×Ω For measuring instruments	3 mA	8 Ω	5 mA	0.2 A		
TLP3121	4-pin SOP Lead pitch: 2.54 mm COFF: 30 pF (typ.) Low CR: 30 pF×Ω For measuring instruments	4 mA	1.2 Ω	5 mA	0.35 A		
TLP3120	6-pin SOP Lead pitch: 2.54 mm High output current: ION = 2.0 A (max) For measuring instruments and power lines	5 mA	0.15 Ω	5 mA	1.25 A		
TLP179D	4-pin SOP Lead pitch: 2.54 mm VOFF: 200V Low COFF: 15 pF (typ.) For measuring instruments	3 mA	50 Ω	5 mA	0.05 A	200 V	1500 Vrms
TLP199D	6-pin SOP Lead pitch: 2.54 mm VOFF: 200 V Low COFF: 15 pF (typ.) For measuring instruments	3 mA	50 Ω	5 mA	0.05 A		
TLP176D	4-pin SOP Lead pitch: 2.54 mm Low trigger current Low On-resistance	3 mA	8 Ω	5 mA	0.2 A		
TLP197D	6-pin SOP Lead pitch: 2.54 mm Low trigger current Low On-resistance	3 mA	8 Ω	5 mA	0.2 A		

MOSFET Output, 1-Form-A

Part Number	Features	IFT Max	RON Max	RON @IF	RON @ION	VOFF	BVs
TLP172G	4-pin SOP Lead pitch: 2.54 mm Low trigger current General-purpose	3 mA	35 Ω	5 mA	0.11 A	350 V	1500 Vrms
TLP192G	6-pin SOP Lead pitch: 2.54 mm Low trigger current General-purpose	3 mA	35 Ω	5 mA	0.11 A		
TLP176G	4-pin SOP Lead pitch: 2.54 mm Low trigger current General-purpose SEMKO-approved	3 mA	35 Ω	5 mA	0.12 A		
TLP197G	6-pin SOP Lead pitch: 2.54 mm Low trigger current General-purpose SEMKO-approved	3 mA	35 Ω	5 mA	0.12 A		
TLP174G	4-pin SOP Lead pitch: 2.54 mm SEMKO-approved Current-limiting function Limit current: 150 to 300 mA	3 mA	35 Ω	5 mA	0.12 A		
TLP222G	4-pin DIP Low trigger current General-purpose SEMKO-approved	3 mA	35 Ω	5 mA	0.12 A		2500 Vrms
TLP227G	4-pin DIP Low trigger current General-purpose SEMKO-approved	3 mA	35 Ω	5 mA	0.12 A		
TLP592G	6-pin DIP Low trigger current General-purpose	3 mA	35 Ω	5 mA	0.12 A		
TLP597G	6-pin DIP Low trigger current General-purpose SEMKO-approved	3 mA	35 Ω	5 mA	0.12 A		
TLP224G	4-pin DIP SEMKO-approved Current-limiting function Limit current: 150 to 300 mA General-purpose	3 mA	35 Ω	5 mA	0.12 A		
TLP594G	6-pin DIP Low trigger current Current-limiting function Limit current: 150 to 300 mA	3 mA	35 Ω	5 mA	0.12 A		
TLP176GA	4-pin SOP Lead pitch: 2.54 mm Low trigger current General-purpose	3 mA	35 Ω	5 mA	0.12 A	400 V	1500 Vrms
TLP174GA	4-pin SOP Lead pitch: 2.54 mm Current-limiting function Limit current: 150 to 300 mA	3 mA	35 Ω	5 mA	0.12 A		
TLP197GA	6-pin SOP Lead pitch: 2.54 mm Low trigger current General-purpose	3 mA	35 Ω	5 mA	0.12 A		
TLP3125	8-pin SOP Lead pitch: 2.54 mm VOFF: 400V Low On-resistance Low trigger current For measuring instruments	3 mA	4 Ω	5 mA	0.2 A		
TLP227GA	4-pin DIP Low trigger current General-purpose SEMKO-approved	3 mA	35 Ω	5 mA	0.12 A		2500 Vrms
TLP224GA	4-pin DIP For modems Current-limiting function Limit current: 150 to 300 mA	3 mA	35 Ω	5 mA	0.12 A		

MOSFET Output, 1-Form-A

Part Number	Features	IFT Max	RON Max	RON @IF	RON @ION	VOFF	BVs
TLP597GA	6-pin DIP Low trigger current General-purpose SEMKO-approved	3 mA	35 Ω	5 mA	0.12 A	400 V	2500 Vrms
TLP594GA	6-pin DIP Current-limiting function Limit current: 150 to 300 mA	3 mA	35 Ω	5 mA	0.12 A		
TLP598GA	6-pin DIP Low trigger current Low On-resistance	3 mA	12 Ω	5 mA	0.15 A		
TLP797GA	6-pin DIP Low On-resistance High isolation voltage IEC60950-compliant	3 mA	35 Ω	5 mA	0.12 A		5000 Vrms
TLP797GAF							
TLP798GA			12 Ω	5 mA	0.15 A		
TLP797J	6-pin DIP High isolation voltage	3 mA	35 Ω	5 mA	0.1 A	600 V	
TLP797JF							

MOSFET Output, 2-Form-A

Part Number	Features	IFT Max	RON Max	RON @IF	RON @ION	VOFF	BVs
TLP202A	8-pin SOP Lead pitch: 2.54 mm Dual-channel version of the TLP172A	3 mA	2 Ω	5 mA	0.4 A	60 V	1500 Vrms
TLP206A	8-pin SOP Lead pitch: 2.54 mm Dual-channel version of the TLP176A	3 mA	2 Ω	5 mA	0.4 A		
TLP222A-2	8-pin DIP Dual-channel version of the TLP222A	3 mA	2 Ω	5 mA	0.5 A		2500 Vrms
TLP227A-2	8-pin DIP Dual-channel version of the TLP227A	3 mA	2 Ω	5 mA	0.5 A		
TLP209D	8-pin SOP Lead pitch: 2.54 mm Dual-channel version of the TLP179D	3 mA	50 Ω	5 mA	0.05 A	200 V	1500 Vrms
TLP200D	8-pin SOP Lead pitch: 2.54 mm Dual-channel version of the TLP176D	3 mA	8 Ω	5 mA	0.2 A		
TLP202G	8-pin SOP Lead pitch: 2.54 mm Dual-channel version of the TLP172G	3 mA	35 Ω	5 mA	0.11 A	350 V	
TLP206G	8-pin SOP Lead pitch: 2.54 mm Dual-channel version of the TLP176G	3 mA	35 Ω	5 mA	0.12 A		
TLP222G-2	8-pin DIP Dual-channel version of the TLP222G	3 mA	50 Ω	5 mA	0.12 A		2500 Vrms
TLP227G-2	8-pin DIP Dual-channel version of the TLP227G	3 mA	35 Ω	5 mA	0.12 A		
TLP224G-2	8-pin DIP Dual-channel version of the TLP224G	3 mA	35 Ω	5 mA	0.12 A		
TLP206GA	8-pin SOP Lead pitch: 2.54 mm Dual-channel version of the TLP176GA	3 mA	35 Ω	5 mA	0.12 A	400 V	1500 Vrms
TLP227GA-2	8-pin DIP Dual-channel version of the TLP227GA SEMKO-approved	3 mA	35 Ω	5 mA	0.12 A		2500 Vrms
TLP224GA-2	8-pin DIP Dual-channel version of the TLP224GA Current-limiting function Limit current: 150 to 300 mA	3 mA	35 Ω	5 mA	0.12 A		

MOSFET Output, 1-Form-A

Part Number	Features	IFT Max	RON			VOFF	BVs
			Max	@IF	@ION		
TLP4172G	4-pin SOP Lead pitch: 2.54 mm Low trigger current General-purpose 1-Form-B	3 mA	50 Ω	0 mA	0.09 A	350 V	1500 Vrms
TLP4192G	6-pin SOP Lead pitch: 2.54 mm Low trigger current General-purpose 1-Form-B	3 mA	50 Ω	0 mA	0.09 A		
TLP4222G	4-pin DIP Low trigger current General-purpose 1-Form-B	3 mA	50 Ω	0 mA	0.1 A		2500 Vrms
TLP4592G	6-pin DIP Low trigger current General-purpose 1-Form-B	3 mA	50 Ω	0 mA	0.1 A		
TLP4176G	4-pin SOP Lead pitch: 2.54 mm Low trigger current General-purpose 1-Form-B	3 mA	25 Ω	0 mA	0.12 A		1500 Vrms
TLP4197G	6-pin SOP Lead pitch: 2.54 mm Low trigger current General-purpose 1-Form-B	3 mA	25 Ω	0 mA	0.12 A		
TLP4227G	4-pin DIP Low trigger current General-purpose 1-Form-B SEMKO-approved	3 mA	25 Ω	0 mA	0.15 A		2500 Vrms
TLP4597G	6-pin DIP Low trigger current General-purpose 1-Form-B SEMKO-approved	3 mA	25 Ω	0 mA	0.15 A		

MOSFET Output, 2-Form-B

Part Number	Features	IFT Max	RON			VOFF	BVs
			Max	@IF	@ION		
TLP4202G	8-pin SOP Lead pitch: 2.54 mm Dual-channel version of the TLP4172G	3 mA	50 Ω	0 mA	0.09 A	350 V	1500 Vrms
TLP4222G-2	8-pin DIP Dual-channel version of the TLP4222G	3 mA	50 Ω	0 mA	0.1 A		2500 Vrms
TLP4206G	8-pin SOP Lead pitch: 2.54 mm Dual-channel version of the TLP4176G	3 mA	25 Ω	0 mA	0.12 A		1500 Vrms
TLP4227G-2	8-pin DIP Dual-channel version of the TLP4227G	3 mA	25 Ω	0 mA	0.15 A		2500 Vrms

MOSFET Output, 1-Form-B + 1-Form-A

Part Number	Features	IFT Max	RON			VOFF	BVs
			Max	@IF	@ION		
TLP4027G	8-pin SOP Lead pitch: 2.54 Low trigger current General-purpose 1a1b (N.C. + N.O.)	3 mA	50 Ω	(Form-A) 5 mA (Form-B) 0 mA	0.09 A	350 V	1500 Vrms
TLP4007G	8-pin DIP Low trigger current General-purpose 1a1b (N.C. + N.O.)	3 mA	50 Ω	(Form-A) 5mA (Form-B) 0 mA	0.1 A		2500 Vrms
TLP4026G	8-pin SOP Lead pitch: 2.54 Low trigger current General-purpose 1a1b (N.C. + N.O.)	3 mA	25 Ω	(Form-A) 5mA (Form-B) 0 mA	0.12 A		1500 Vrms
TLP4006G	8-pin DIP Low trigger current General-purpose 1a1b (N.C. + N.O.)	3 mA	25 Ω	(Form-A) 5mA (Form-B) 0 mA	0.12 A		2500 Vrms

Toshiba Semiconductor (Thailand) Co., LTD. parts.

Part Number	Features	VCEO	BVs
TLP180 (T)	Mini-flat 6-pin MFSOP AC input SEMKO-approved	80 V	3750 Vrms
TLP181 (T)	Mini-flat 6-pin MFSOP Transistor output General-purpose	80 V	3750 Vrms
TLP521-1 (T)	4-pin DIP Transistor output General-purpose	55 V	2500 Vrms
TLP521-2 (T)	Dual-channel version of the TLP521-1(T)		
TLP620 (T)	4-pin DIP Transistor output AC input SEMKO-approved	55 V	5000 Vrms
TLP620-2 (T)	Dual-channel version of the TLP620(T) SEMKO-approved		
TLP621 (T)	4-pin DIP Transistor output High isolation voltage SEMKO-approved	55 V	5000 Vrms
TLP621-2 (T)	Dual-channel version of the TLP621(T) SEMKO-approved		
TLP627 (T)	4-pin DIP Darlington transistor output High VCEO SEMKO-approved	300 V	5000 Vrms
TLP627-2 (T)	Dual-channel version of the TLP627(T) SEMKO-approved		
TLP30xx (T)	6-pin DIP	See pages 27 - 28	

(1) Current Transfer Ratio (CTR) and LED Trigger Current (IFT) Rank and Markings

Transistor photocouplers are ranked for CTR. SCR, Triac and Photorelay are ranked for IFT. Those rankings are shown in the table below.

1-1) CTR Ranking and Markings

Rank Name *	CTR
A or None	50%-600%
YG	50%-300%
GB	100%-600%
Y	50%-150%
GR	100%-300%
BL	200%-600%
BLL	200%-400%
GRL	100%-200%
GRH	150%-300%
BV	200%-1200%

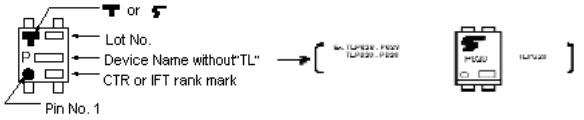
* Not all ranking is available for each item.

1-2) IFT Rank Name

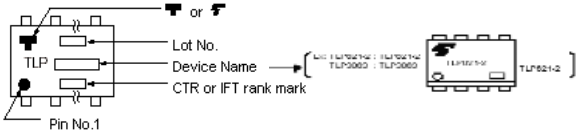
Rank Name *	I_{FT}
None	I_{FT} Max
IFT7	7mA Max
IFT5	5mA Max
IFT2	2mA Max

1-3) Marking Examples

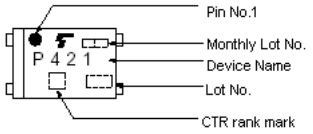
i) 4pin Type & Miniflat 1 ch Type



ii) Others

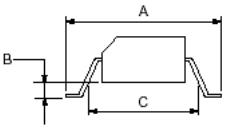


iii) TLP421

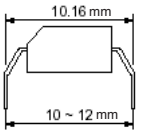


(2) Optional Lead Forming

2-1) Surface Mount Lead Form Options (LF1), (LF4), (LF5)



2-2) Wide Clearance Lead Form Option (LF2)

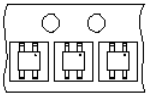


(mm)

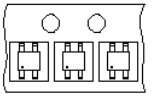
Dimension \ Version	LF1		LF4		LF5	
	Min	Max	Min	Max	Min	Max
A	-	10.0	-	12.0	-	10.0
B	(0.35 typ.)		(0.25 typ.)		-	0.2
C	6.4	-	8.0	-	6.4	-

(3) Photocoupler Tape and Reel Specifications

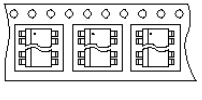
a) Device orientation on tape, by combinations of photocoupler package type and tape options



Photocoupler Package Type	Tape Option	Example
MFSOP6	TPR	TLP127(TPR)



Photocoupler Package Type	Tape Option	Example
MFSOP6	TPL	TLP181(TPL)
SOP4, 2.54SOP4	TP	TLP281(GB-TP)
SSOP4	TP15	TLP3230(TP15)



Photocoupler Package Type	Tape Option	Example
2.54SOP6/8	TP	TLP197G(TP)
SOP16	TP	TLP176(TP)
SDIP	TP	TLP701(TP)
DIP(LF1,LF5)	TP1,TP5	TLP421(TP1)
DIP(LF4)	TP4	TLP421F(TP4)

b) Quantities per reel

Photocoupler Package Type	MFSOP6	SOP4	SOP16	2.54SOP4/6/8	SSOP4	DIP(LF1,LF5)	DIP(LF4)	SDIP
Quantities (pcs)	3000	2500	2500	2500	1500	1500	1000	1000

The following guide is meant to serve as a guide for interchanging existing competitive devices to our photocoupler product line. The closest equivalent Toshiba devices are selected on the basis of general similarity of electrical characteristics and mechanical configuration. Before using, please compare the detailed specifications of the substitute devices to that of original devices. Since Toshiba is focusing on 4-pin Transistor photocoupler TLP421 series with cost and capacity advantage, TLP421 is sometimes recommended in addition to the direct cross part numbers.

Code Definitions:

A: Direct Replacement
B: Minor Electrical Difference
C: Minor Mechanical Difference
D: Major Electrical Difference
E: Major Mechanical Difference
F: Not pin-compatible, but offers similar function. Recommended for new design.

(PHOTOCOUPLER)
VISHAY

Other Maker's Product	TOSHIBA Product	Code
4N25	4N25(SHORT)	A
	TLP421orTLP621(F,T)	F
4N26	4N26(SHORT,F)	A
	TLP421orTLP621(F,T)	F
4N27	4N27(SHORT,F)	A
	TLP421orTLP621(F,T)	F
4N28	4N28(SHORT,F)	A
	TLP421orTLP621(F,T)	F
4N32	4N32(SHORT,F)	A
4N33	4N33(SHORT,F)	A
4N35	4N35(SHORT)	A
	TLP421orTLP621(F,T)	F
4N36	4N36(SHORT,F)	A
	TLP421orTLP621(F,T)	F
4N37	4N37(SHORT,F)	A
	TLP421orTLP621(F,T)	F
4N38A	4N38A(SHORT,F)	A
	TLP421orTLP621(F,T)	F
6N135	6N135(F)	A
6N136	6N136(F)	A
6N138	6N138(F)	A
6N139	6N139(F)	A
CNY17-2	TLP621(D4-Y,F,T)	F
CNY17-3	TLP621(D4-GRL,F,T)	F
CNY17-4	TLP621(D4-GRH,F,T)	F
CNY17F-2	TLP621(D4-Y,F,T)	F
CNY17F-3	TLP621(D4-GRL,F,T)	F
CNY17F-4	TLP181(GB,F,T)	F
CNY17GF-2	TLP751F(F)	F
CNY17GF-3	TLP621F(D4-GRL,F,T)	F
CNY17GF-4	TLP621F(D4-GRL,F,T)	F
CNY74-2	TPL621-2(F,T)	F

VISHAY continued

Other Maker's Product	TOSHIBA Product	Code
CNY74-4	TLP621-4(F)	F
IL1	TLP731(F)	A
IL2	TLP731(GB,F)	A
IL201	TLP731(F)	A
IL202	TLP731(GB,F)	A
IL203	TLP731(GB,F)	A
IL205A	TLP181(F,T)	F
IL206A	TLP181(F,T)	F
IL207A	TLP181(GB,F,T)	F
IL208A	TLP181(GB,F,T)	F
IL211A	TLP181(F,T)	F
IL212A	TLP181(F,T)	F
IL213A	TLP181(GB,F,T)	F
IL215A	TLP124(F)	F
IL216A	TLP124(F)	F
IL217A	TLP124(F)	F
IL221A	TLP124(F)	F
IL222A	TLP124(BV,F)	F
IL223A	TLP124(F)	F
IL250	TLP630(F)	A
IL251	TLP630(F)	A
IL252	TLP630(GB,F)	A
IL255	TLP330(F)	A
IL256A	TLP180(F,T)	F
IL30	TLP571(F)	B
IL31	TLP571(F)	B
IL352	TLP281(F)	F
IL356	TLP174GA(F)	E
IL400	TLP541G(N,F)	A
IL410	TLP3062(S,C,F,T)	B
IL420	TLP3052(S,F,T)	B
IL440	TLP3052(S,F,T)	B

VISHAY continued

Other Maker's Product	TOSHIBA Product	Code
IL5	TLP631(F)	A
IL55	TLP571(F)	B
IL55B	TLP570(F)	B
IL56B	TLP372(F)	A
IL66	TLP371(F)	A
IL66B	TLP372(F)	A
IL74	TLP731(F)	A
ILCT6	TLP504A(F)	A
ILD1	TLP504A(F)	B
ILD2	TLP504A(GB,F)	B
ILD3	TLP504A(GB,F)	B
ILD5	TLP504A(F)	B
ILD610-1/-2/-3/-4	TLP621-2(F,T)	E
ILD615-1/-2/-3/-4	TLP621-2(F,T)	B
ILD620	TLP620-2(F,T)	A
ILD620GB	TLP620-2(GB,F,T)	A
ILD621	TLP621-2(F,T)	A
ILD621GB	TLP621-2(GB,F,T)	A
ILD74	TLP504A(F)	A
ILQ1	TLP504A-2(F)	A
ILQ2	TLP504A-2(GB,F)	B
ILQ5	TLP504A-2(F)	B
ILQ615-1/-2/-3/-4	TLP621-4(F)	B
ILQ620	TLP620-4(F)	A
ILQ620GB	TLP620-4(GB,F)	A
ILQ621	TLP621-4(F)	A
ILQ74	TLP504A-2(F)	A
K3010P	TLP3021(S,F)	A
K3010PG	TLP3021(LF2,S,F)	A
K3020P	TLP3021(S,F)	A
K815P	TLP627(F,T)	A
K817P	TLP421orTLP621(F,T)	A
K827P	TLP621-2(F,T)	A
K847P	TLP621-4(F)	A
LH1056	TLP597G(F)	A
LH1298	TLP594G(F)	B
LH1540	TLP594G(F)	B
LH1550	TLP594G(F)	A
SFH600-0/-1/-2/-3	TLP621(D4,F,T)	F
SFH601-0/-1/-2/-3	TLP621(D4,F,T)	F
SFH608-2/-3/-4/-5	TLP621(D4,F,T)	F
SFH610A-1/-2/-3/-4	TLP421orTLP621(F,T)	E
SFH611A-1/-2/-3/-4	TLP421orTLP621(F,T)	E
SFH612A	TLP627(F,T)	A
SFH6135	TLP751(F)	A
SFH6136	TLP751(F)	A
SFH614A	TLP628(F)	A

VISHAY continued

Other Maker's Product	TOSHIBA Product	Code
SFH615A-1/-2/-3/-4	TLP421orTLP621(F,T)	B
SFH615AA	TLP421orTLP621(F,T)	B
SFH615GB	TLP421(GB)orTLP621(GB,F,T)	B
SFH617A	TLP421orTLP621(F,T)	B
SFH618A	TLP624(F)	B
SFH619A	TLP627(F,T)	A
SFH620A-1/-2/-3	TLP620(F,T)	B
SFH620AA	TLP620(F,T)	A
SFH620GB	TLP620(GB,F,T)	A
SFH628A-2/-3/-4	TLP626(F)	F
SFH6315	TLP112A(F)	E
SFH6316	TLP112A(F)	E
SFH6343	TLP114A(F)	E
SFH6345	TLP759(F)	A
SFH636	TLP181(GB,F,T)	E
SFH655A	TLP627(F)	A
SFH690xT	TLP181(F,T)	A
SFH692AT	TLP127(F)	A
TCET1100	TLP421orTLP621(F,T)	A
TCMT1100	TLP281(F)	A
TCMT4100	TLP281-4(F)	A
TCED1100	TLP627(F,T)	A

FAIRCHILD (former QT/Motorola)

Other Maker's Product	TOSHIBA Product	Code
4N25A-M	4N25A(SHORT,F)	A
	TLP421orTLP621(F,T)	F
4N25-M	4N25(SHORT,F)	A
	TLP421orTLP621(F,T)	F
4N26-M	4N26(SHORT,F)	A
	TLP421orTLP621(F,T)	F
4N27-M	TLP421orTLP621(F,T)	A
	TLP421orTLP621(F,T)	F
4N28-M	4N28(SHORT,F)	A
	TLP421orTLP621(F,T)	F
4N29	4N29(SHORT,F)	A
4N35-M	4N35(SHORT,F)	A
	TLP421orTLP621(F,T)	F
4N36-M	4N36(SHORT,F)	A
	TLP421orTLP621(F,T)	F
4N37-M	4N37(SHORT,F)	A
	TLP421orTLP621(F,T)	F
4N38-M	4N38(SHORT,F)	A
	TLP421orTLP621(F,T)	F
4N38A-M	4N38A(SHORT,F)	A
	TLP421orTLP621(F,T)	F

A: Direct Replacement
B: Minor Electrical Difference
C: Minor Mechanical Difference
D: Major Electrical Difference
E: Major Mechanical Difference
F: Not pin-compatible, but offers similar function. Recommended for new design.

FAIRCHILD (former QT/Motorola) continued

Other Maker's Product	TOSHIBA Product	Code
6N135	6N135(F)	A
6N136	6N136(F)	A
6N137	6N137(F)	A
6N138	6N138(F)	A
6N139	6N139(F)	A
CNY17-2-M	TLP621(D4-Y,F,T)	F
CNY17-3-M	TLP621(D4-GRL,F,T)	F
CNY17-4-M	TLP621(D4-GRH,F,T)	F
H11A1	TLP631(F)	A
H11A1-M	TLP631(F)	A
H11A617	TLP421orTLP621(F,T)	B
H11A817	TLP421orTLP621(F,T)	A
H11AA1/2/3	TLP630(F)	A
H11AA1/2/3-M	TLP630(F)	A
H11AA4	TLP630(GB,F)	A
H11AA4-M	TLP630(GB,F)	A
H11AA814	TLP620(F,T)	B
H11AG1	TLP331(F)	A
H11AV1-M	TLP731(GR,F)	B
	TLP421(GR,F,T)	F
H11AV2-M	TLP731(F)	B
	TLP621(F,T)	F
H11B1	TLP571(F)	A
H11B3-M	TLP571(F)	A
H11B815	TLP627(F,T)	A
H11C1	TLP541G(N,F)	B
H11D1	TLP371(F)	D
H11D1/D2-M	TLP371(F)	D
H11D2	TLP124(BV,F)	D
H11D3	TLP371(F)	D
H11D3/D4	TLP371(F)	D
H11G1/G2/G3	TLP371(F)	A
HCPL-2502	TLP751(F)	A
HCPL-2503	TLP751(F)	A
HCPL-2530	TLP2530(F)	A
HCPL-2531	TLP2531(F)	A
HCPL-2601	TLP2601(F)	A
HCPL-2630	TLP2630(F)	A
HCPL-2631	TLP2631(F)	A
HMA121	TLP181(F,T)	A
HMA124	TLP124(F)	A
HMA2701	TLP181(F,T)	A
HMHA2801	TLP281(F)	A
HMHA281	TLP281(F)	A
HMAA2705	TLP180(F,T)	A
HMHAA280	TLP280(F)	A
MCA11G1/G2/G3	TLP371(F)	A
MCA2230/Z	TLP371(F)	B
MCA2231/Z	TLP371(F)	B

FAIRCHILD (former QT/Motorola) continued

Other Maker's Product	TOSHIBA Product	Code
MCA2255/Z	TLP371(F)	B
MCA230	TLP571(F)	A
MCA231	TLP571(F)	A
MCA255	TLP571(F)	B
MCL2501	TLP559(F)	F
MCL2502	TLP559(F)	F
MCL2503	TLP559(F)	F
MCL2530	TLP2530(F)	A
MCL2531	TLP2531(F)	A
MCL2601	TLP2601(F)	A
MCL2630	TLP2630(F)	A
MCP3009	TLP3021(S,F)	A
MCP3010	TLP3021(S,F)	A
MCP3011	TLP3022(S,F,T)	A
MCP3011A	TLP3022(S,F,T)	A
MCP3012	TLP3023(S,F,T)	A
MCP3020/0Z	TLP3021(S,F)/(D4,S,F)	A
MCP3021/1Z	TLP3021(S,F)/(D4,S,F)	A
MCP3022/2Z	TLP3022(S,F,T)/(D4,S,F,T)	A
MCP3022A	TLP3022(S,F,T)	A
MCP3023	TLP3023(S,F,T)	A
MCP3030	TLP3041(S,C,F,T)	A
MCP3031	TLP3041(S,C,F,T)	A
MCP3032	TLP3042(S,C,F,T)	A
MCP3033	TLP3043(S,C,F,T)	A
MCP3040/0Z	TLP3041(S,C,F,T)/(D4,S,F,T)	A
MCP3041/1Z	TLP3041(S,C,F,T)/(D4,S,F,T)	A
MCP3042	TLP3042(S,C,F,T)	A
MCP3043	TLP3043(S,C,F,T)	A
MCS2	TLP541G(N,F)	A
MCS21	TLP541G(N,F)	A
MCS2400	TLP541G(N,F)	A
MCS2401	TLP541G(N,F)	A
MCT2	TLP631(F)	A
MCT210	TLP631(BL,F)	B
MCT2200/0Z	TLP731(F)/(D4,F)	A
	TLP621(F,T)/(D4,F,T)	F
MCT2201/1Z	TLP731(GB,F)/(D4-GB,F)	B
	TLP621(F,T)/(D4,F,T)	F
MCT2202/2Z	TLP621(F,T)/(D4,F,T)	F
MCT271	TLP631(F)	B
MCT272	TLP631(F)	B
MCT273	TLP631(F)	B
MCT277	TLP631(GB,F)	A
MCT2E	TLP631(F)	F
MCT2E-M	TLP631(F)	F
MCT2-M	TLP631(F)	F
MCT5200	TLP731(GB,F)	A
MCT5201	TLP731(GB,F)	A

FAIRCHILD (former QT/Motorola) continued

Other Maker's Product	TOSHIBA Product	Code
MCT5210	TLP731	A
MCT5211	TLP731	A
MCT6	TLP504A(F)	A
MCT61	TLP504A(F)	A
MCT62	TLP504A (GB,F)	A
MCT66	TLP504A(F)	A
MOC119-M	TLP570(F)	A
MOC205-M	TLP181(F,T)	E
MOC206-M	TLP181(F,T)	E
MOC207-M	TLP181(GB,F,T)	E
MOC211-M	TLP751(F)	E
MOC212-M	TLP181(F,T)	E
MOC213-M	TLP181(GB,F,T)	E
MOC215-M	TLP124(F)	E
MOC216-M	TLP124(F)	E
MOC217-M	TLP124(F)	E
MOC223-M	TLP127(U,F)	E
MOC256-M	TLP180(F,T)	E
MOC3010-M	TLP3021(S,F)	A
MOC3011-M	TLP3022(S,F,T)	A
MOC3012-M	TLP3023(S,F,T)	A
MOC3021-M	TLP3021(S,F)	A
MOC3022-M	TLP3022(S,F,T)	A
MOC3023-M	TLP3023(S,F,T)	A
MOC3031-M	TLP3041(S,C,F,T)	A
MOC3032-M	TLP3042(S,C,F,T)	A
MOC3033-M	TLP3043(S,C,F,T)	A
MOC3041-M	TLP3041(S,C,F,T)	A
MOC3042-M	TLP3042(S,C,F,T)	A
MOC3043-M	TLP3043(S,C,F,T)	A
MOC3051-M	TLP3051(S,F)	A
MOC3052-M	TLP3052(S,F,T)	A
MOC3061-M	TLP3061(S,C,F,T)	A
MOC3062-M	TLP3062(S,C,F,T)	A
MOC3063-M	TLP3063(S,C,F,T)	A
MOC8020-M	TLP372(F)	A
MOC8021-M	TLP372(F)	A
MOC8030	TLP372(F)	A
MOC8050	TLP372(F)	A
MOC8100-M	TLP732(GB,F)	A
	TLP421(GB)or621(GB,F,T)	F
MOC8101	TLP372(F)	B
	TLP421orTLP621(F,T)	F
MOC8102	TLP372(F)	B
	TLP421orTLP621(F,T)	F
MOC8103	TLP372(F)	B
	TLP421orTLP621(F,T)	F

FAIRCHILD (former QT/Motorola) continued

Other Maker's Product	TOSHIBA Product	Code
MOC8104	TLP372(F)	B
	TLP421orTLP621(F,T)	F
MOC8105	TLP372(F)	B
	TLP421orTLP621(F,T)	F
MOC8111	TLP732(D4,F)	A
	TLP621(F,T)	F
MOC8112	TLP732(D4,F)	A
	TLP621(F,T)	F
MOC8113	TLP732(D4-GB,F)	B
	TLP621(D4-GB,F,T)	F
MOC8204-M	TLP371(F)	D
MOC8205-M	TLP371(F)	D
MOC8206-M	TLP371(F)	D

AGILENT (former HP)

Other Maker's Product	TOSHIBA Product	Code
6N135	6N135(F)	A
6N136	6N136(F)	A
6N137	6N137(F)	A
6N138	6N138(F)	A
6N139	6N139(F)	A
HCPL-0452	TLP112A(F)	E
HCPL-0453	TLP114A(F)	E
HCPL-0454	TLP114A(IGM,F)	E
HCPL-0500	TLP112A(F)	E
HCPL-0501	TLP112A(F)	E
HCPL-0600	TLP113(F)	E
HCPL-0601	TLP115A(F)	E
HCPL-0611	TLP115A(F)	E
HCPL-0708	TLP116(F)	E
HCPL-181	TLP181(F,T)	A
HCPL-2200	TLP2200(F)	A
HCPL-2201	TLP555(F)	C
HCPL-2502	TLP751(F)	A
HCPL-2503	TLP751(F)	A
HCPL-2530	TLP2530(F)	A
HCPL-2531	TLP2531(F)	A
HCPL-2601	TLP2601(F)	A
HCPL-2611	TLP2601(F)	A
HCPL-2630	TLP2631(F)	A
HCPL-2631	TLP2631(F)	A
HCPL-314J	TLP701(F)x2	C
HCPL-3120	TLP350(F)	A
HCPL-3140	TLP351(F)	A
HCPL-3150	TLP351(F)	A
HCPL-3180	TLP350(F)	B

A: Direct Replacement
B: Minor Electrical Difference
C: Minor Mechanical Difference
D: Major Electrical Difference
E: Major Mechanical Difference
F: Not pin-compatible, but offers similar function. Recommended for new design.

Agilent (former HP) continued

Other Maker's Product	TOSHIBA Product	Code
HCPL-354	TLP180(F,T)	B
HCPL-4502	TLP750(F)	A
HCPL-4503	TLP759(F)	A
HCPL-4504	TP559(F)	A
HCPL-814	TLP620(F,T)	B
HCPL-817	TLP421	A
HCPL-M452	TLP114A(F)	A
HCPL-M453	TLP114A(F)	A
HCPL-M454	TLP114A(IGM,F)	A
HCPL-M456	TLP114A(F)	A
HCPL-M600	TLP115A(F)	A
HCPL-M601	TLP115A(F)	A
HCPL-M611	TLP115A(F)	A

SHARP

Other Maker's Product	TOSHIBA Product	Code
PC110L	TLP731F(D4,F)	A
	TLP621F(D4,F,T)	F
PC111L	TLP731F(D4,F)	A
	TLP621F(D4,F,T)	F
PC120	TLP621(D4,F,T)	A
PC123	TLP421(D4)	A
PC354NT	TLP180(F,T)	A
PC355NT	TLP127(F)	A
PC356NT	TLP124(F)	A
PC357NT	TLP181(GB,F,T)	A
PC3H3	TLP280(F)	A
PC3H7	TLP281(F)	A
PC3H21	TLP525G(F)	A
PC410	TLP115A(F)	A
PC3Q64	TLP280-4(F)	A
PC3Q67	TLP281-4(F)	A
PC725V	TLP371(F)	A
PC733	TLP630(F)	A
PC813	TLP620(F,T)	A
PC814	TLP620(F,T)	A
PC815	TLP627(F,T)	A
PC816	TLP321(F)	A
PC817	TLP421orTLP621(F,T)	A
PC823	TLP620-2(F,T)	A
PC824	TLP620-2(F,T)	A
PC825	TLP627-2(F,T)	A
PC826	TLP321-2(F)	A
PC827	TLP621-2(F,T)	A
PC829	TLP504A(F)	A
PC835	TLP627(F,T)X3	C
PC837	TLP621(F,T)X3	C
PC843	TLP620-4(F)	A
PC844	TLP620-4(F)	A

SHARP continued

Other Maker's Product	TOSHIBA Product	Code
PC845	TLP627-4(F)	A
PC846	TLP321-4(F)	A
PC847	TLP621-4(F)	A
PC849	TLP504A-2(F)	A
PC852	TLP627(F,T)	A
PC8D52	TLP627-2(F,T)	A
PC8Q52	TLP627-4(F)	A
PC942	TLP351(F)	A
PC923	TLP351(F)	A
PR36MF11NSZ	TLP3506(F)	B
PR36MF12NSZ	TLP3506(F)	B
S11MD3	TLP3021(S,F)	A
S11MD4T	TLP3042(S,C,F,T)	A
S11MD4V	TLP124(BV,F)	A
S11MD5T	TLP3021(S,F)	A
S11MD5V	TLP3021(S,F)	A
S11MD7T	TLP3023(S,F,T)	A
S11MD8T	TLP3043(S,C,F,T)	A
S11MD9T	TLP3022(S,F,T)	A
S21MD3TV	TLP3052(S,F,T)	A
S21MD3V	TLP3051(S,F)	A
S21MD7T	TLP3052(S,F,T)	B
S21MD9T	TLP3052(IFT7,S,F,T)	A
S21ME3	TLP762J(D4,F)	B
S21ME3F	TLP762J(D4,F)	B
S21ME4	TLP763J(D4,C,F)	B
S21ME4F	TLP763JF(D4,C,F)	B
S21MS3	TLP260J(F)	A
S21MS4	TLP161J(U,C,F)	A
S201D01	TLP3526(F)	B
S201D02	TLP3527(F)	B
S2S3	TLP260J(F)	B

NEC

Other Maker's Product	TOSHIBA Product	Code
PS2501-1	TLP421orTLP621(F,T)	A
PS2501-2	TLP621-2(F,T)	A
PS2501-4	TLP621-4(F)	A
PS2502-1	TLP627(F,T)	B
PS2502-2	TLP627-2(F,T)	B
PS2502-4	TLP627-4(F)	B
PS2505-1	TLP620(F,T)	A
PS2505-2	TLP620-2(F,T)	A
PS2505-4	TLP620-4(F)	A
PS2521-1	TLP629(F)	A
PS2521-2	TLP629-2(F)	A
PS2521-4	TLP629-4(F)	A
PS2525-1	TLP320(F)	B

NEC continued

Other Maker's Product	TOSHIBA Product	Code
PS2532-1	TLP627(F,T)	A
PS2532-2	TLP627-2(F,T)	A
PS2532-4	TLP627-4(F)	A
PS2533-1	TLP627(F,T)	B
PS2561-1	TLP421orTLP621(F,T)	A
PS2562-1	TLP627(F,T)	A
PS2565-1	TLP620(F,T)	A
PS2571-1	TLP421orTLP621(F,T)	A
PS2581L1/AL1	TLP421orTLP621(F,T)	A
PS2701-1	TLP181(F,T)	A
PS2702-1	TLP127(F)	A
PS2705-1	TLP180(F,T)	A
PS2761-1	TLP181(F,T)	A
PS2765-1	TLP180(F,T)	A
PS2801-1	TLP281(F)	A
PS2801-4	TLP281-4(F)	A
PS2805-1	TLP280(F)	A
PS2805-4	TLP280-4(F)	A
PS2861-1	TLP281(F)	A
PS2865-1	TLP280(F)	A
PS2811-1	TLP283(F)	A
PS2811-4	TLP283-4(F)	A
PS7141-1A	TLP597GA(F)	A
PS7141-2A	TLP227GA-2(F)	A
PS7141-1B	TLP4597G(F)	B
PS7141-2B	TLP4227G-2(F)	B
PS7141-1C	TLP4006G(F)	B
PS7341C-1A	TLP594G(F)	B
PS7341C-2A	TLP224G-2(F)	B
PS7241-1A	TLP176GA(F)	A
PS7241-2A	TLP206GA(F)	A
PS7241-1B	TLP4176G(F)	B
PS7241-2B	TLP4206G(F)	B
PS7241-1C	TLP181(GB,F,T)	B
PS8601	TLP751(F)	B
PS8602	TLP759(F)	A
PS8101	TLP114A(F)	A
PS8701	TLP114A(F)	A
PS9113	TLP114A(IGM,F)	B
PS9114	TLP115A(F)	B
PS9115	TLP116(F)	B
PS9601	TLP554(F)	A
PS9613	TLP759(IGM,F)	B
PS9614	TLP554(F)	B
PS9701	TLP115A(F)	A
PS9713	TLP114A(IGM,F)	B
PS9714	TLP115A(F)	B
PS9715	TLP115A(F)	B

COSMO

Other Maker's Product	TOSHIBA Product	Code
K1010	TLP421orTLP621(F,T)	A
K1020	TLP621-2(F,T)	A
K2010	TLP631(F)	B
K3010	TLP620(F,T)	A
KP3020	TLP620-2(F,T)	A
KP4010	TLP627(F,T)	A
KP4020	TLP627-2(F,T)	A
K5010	TLP371(F)	A
K6010	TLP630(F)	A
KPS2801	TLP281(F)	A
KPC354NT	TLP180(F,T)	A
KPC355NT	TLP127(U,F)	A
KPC357NT	TLP181(F,T)	A
KPC452	TLP127(U,F)	A

LITEON

Other Maker's Product	TOSHIBA Product	Code
LTV-123	TLP421orTLP621(F,T)	A
LTV-816	TLP421orTLP621(F,T)	A
LTV-817	TLP421orTLP621(F,T)	A
LTV-851	TLP628(F)	A
LTV-356T	TLP181(F,T)	A
LTV-357T	TLP181(F,T)	A
LTV-814	TLP620(F,T)	A
LTV-814H	TLP320(F)	A
LTV-354T	TLP180(F,T)	A
LTV-815	TLP627(F,T)	A
LTV-852	TLP627(F,T)	A
LTV-352T	TLP127(U,F)	A
LTV-355T	TLP127(U,F)	B
MOC3020	TLP3020(S,F)	A
MOC3021	TLP3021(S,F)	A
MOC3022	TLP3022(S,F,T)	A
MOC3023	TLP3023(S,F,T)	A
MOC3051	TLP3051(S,F)	A
MOC3052	TLP3052(S,F,T)	A
MOC3061	TLP124(BV,F)	A
MOC3063	TLP3063(S,C,F,T)	A

A: Direct Replacement
B: Minor Electrical Difference
C: Minor Mechanical Difference
D: Major Electrical Difference
E: Major Mechanical Difference
F: Not pin-compatible, but offers similar function. Recommended for new design.

(PHOTORELAYS)
NAIS (Aromat)

Other Maker's Product	TOSHIBA Product	Code
AQV202	TLP598AA(F)	A
AQV204	TLP598GA(F)	A
AQV210	TLP592G(F)	A
AQV210E	TLP597G(F)	A
AQV210EH	TLP797GA(F)	A
AQV210S	TLP192G(F)	A
AQV212	TLP592A(F)	A
AQV212S	TLP197A(F)	A
AQV214	TLP597GA(F)	A
AQV214EH/214H	TLP797GA(F)	A
AQV214S	TLP797GA(F)	A
AQV215	TLP597A(F)	B
AQV216	TLP797J(F)	A
AQV217S	TLP197D(F)	A
AQV225/225N	TLP3110(F)/TLP3111(F)	E
AQV225NS	TLP3121(F)	A
AQV234	TLP597GA(F)	B
AQV252	TLP597A(F)	A
AQV254	TLP598GA(F)	B
AQV254H	TLP798GA(F)	A
AQV255	TLP598GA(F)	A
AQV410EH	TLP4592G(F)	A
AQV414	TLP4592G(F)	A
AQV414E	TLP4597G(F)	A
AQV414S	TLP4197G(F)	A
AQW210	TLP222G-2(F)	A
AQW210S	TLP202G(F)	A
AQW210T2S	TLP176G(F)+TLP280(F)x2	A
AQW210TS	TLP176G(F)+TLP280(F)	A
AQW212	TLP222A-2(F)	A
AQW214	TLP227GA-2(F)	A
AQW215	TLP222A-2(F)	D
AQW217	TLP222G-2(F)	D
AQW214S	TLP206GA(F)	A
AQW217S	TLP200D(F)	A
AQW221N1S	TLP3113(F)3114(F)3115(F)	A
AQW221N2S	TLP3113(F)3114(F)3115(F)	A
AQW225NS	TLP3110(F)/3111(F)(x2)	A
AQW254/254R	TLP227GA-2(F)	B
AQW414	TLP4222G-2(F)	A
AQW610S	TLP4026G(F)	A
AQW614	TLP4007G(F)	A
AQY210EH	TLP227G(F)	A
AQY210LS	TLP174G(F)	A
AQY210S	TLP174(F)	A
AQY214EH	TLP181(GB,F,T)	B
AQY214S	TLP751(F)	A

(PHOTORELAYS)
NAIS (Aromat) continued

Other Maker's Product	TOSHIBA Product	Code
AQY221N1S	TLP3113(F)/TLP3116(F)	B
AQY221N2S	TLP3113(F)/TLP3116(F)	B
AQY221R2V	TLP3215(F)	A
AQY221N2V	TLP3216(F)	A
AQY225NS	TLP3113(F)/TLP3116(F)	A
AQY410EH	TLP4227G(F)	A
AQY414EH	TLP4227G(F)	B
AQY414S	TLP4176G(F)	B

CLARE

Other Maker's Product	TOSHIBA Product	Code
IAA110P/IAA170P	TLP172G(F)x2+TLP280(F)	F
IAD110P/IAD170P	TLP176G(F)+TLP280(F)x2	F
ITC117P		
ITC135P/137P		
LAA110	TLP227G-2(F)	A
LCA100/110	TLP597G(F)	A
LCA100L/110L	TLP594G(F)	B
LCA125	TLP598GA(F)	A
PAA110	TLP227GA-2(F)	B
PLA110	TLP598GA(F)	B
TS112/TS117P	TLP172G(F)+TLP280(F)	A
XS170/TS117	TLP222G(F)+TLP620(F,T)	A
TS120	TLP222G(F)+TLP627(F,T)	A
TS190	TLP227GA(F)+TLP620(F,T)	A
XCA170	TLP592G(F)	A
XS170P	TLP172G(F)+TLP280(F)	A

A: Direct Replacement
B: Minor Electrical Difference
C: Minor Mechanical Difference
D: Major Electrical Difference
E: Major Mechanical Difference
F: Not pin-compatible, but offers similar function. Recommended for new design.

* All products with suffix X or Z types, e.g. AQS210PSX or AQS210PSZ, are equivalent to Toshiba product with suffix (TP), e.g. TLP270G (TP).

NOTES

www.toshiba.com/taec

©2007 Toshiba America Electronic Components, Inc.
All product or brand names are the property of their respective holders.

OPTO 07 843
8/07

ISO 9001:2000
CERTIFIED

TOSHIBA
Leading Innovation