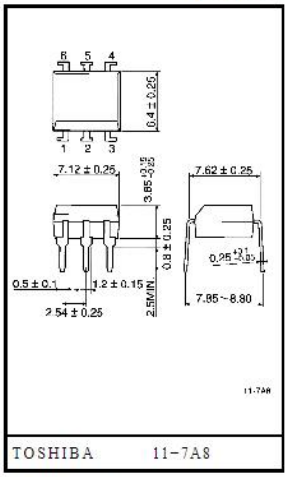
勝 特 力 材 料 886-3-5753170
胜特力电子(上海) 86-21-34970699
胜特力电子(深圳) 86-755-83298787
Http://www.100y.com.tw

TOSHIBA Photocoupler GaAs Ired&Photo −Transistor

TLP733, TLP734

Office Machine
Household Use Equipment
Solid State Relay
Switching Power Supply

Unit in mm



TOSHIBA 11−7A8

Weight: 0.42 g

The TOSHIBA TLP733 and TLP734 consist of a photo−transistor optically coupled to a gallium arsenide infrared emitting diode in a six lead plastic DIP.
TLP734 is no−base internal connection for high−EMI environments.

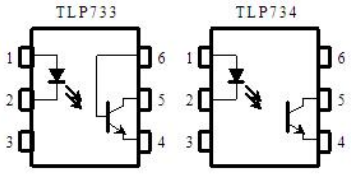
- Collector−emitter voltage: 55 V (min.)
- Current transfer ratio: 50% (min.)
  Rank GB: 100% (min.)
- UL recognized: UL1577, file no. E67349
- BSI approved: BS EN60065: 1994
  Certificate no. 7364
  BS EN60950: 1992
  Certificate no. 7365
- SEMKO approved: SS4330784
  Certificate no. 9325163, 9522142

- Option (D4) type
  VDE approved: DIN VDE0884 / 06.92,
  Certificate no. 74286, 91808
  Maximum operating insulation voltage: 630, 890 VPK
  Highest permissible over voltage: 6000, 8000 VPK

(Note) When a VDE0884 approved type is needed, please designate the "Option (D4)"

	7.62 mm pich standard type	10.16 mm pich TLP×××F type
• Creepage distance	: 7.0 mm (min.)	8.0 mm (min.)
Clearance	: 7.0 mm (min.)	8.0 mm (min.)
Internal creepage path	: 4.0 mm (min.)	4.0 mm (min.)
Insulation thickness	: 0.5 mm (min.)	0.5 mm (min.)

Pin Configurations (top view)



TLP733	TLP734
1: Anode	1: Anode
2: Cathode	2: Cathode
3: Nc	3: Nc
4: Emitter	4: Emitter
5: Collector	5: Collector
6: Base	6: Nc

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Current Transfer Ratio

Type	Classification *1	Current Transfer Ratio (%) (IC / IF) IF = 5mA, VCE = 5V, Ta = 25°C		Marking Of Classification
		Min.	Max.	
TLP733 TLP734	(None)	50	600	Blank, Y, ■Y, G, G■, B, B■, GB
		50	150	Y, ■Y
	Rank GR	100	300	G, ■G
		200	600	B, ■B
	Rank GB	100	600	G, ■G, B, B■, GB

*1: Ex. rank GB: TLP733 (GB)

Note: Application type name for certification test, please use standard product type name, i.e. TLP733 (GB): TLP733

Maximum Ratings (Ta = 25°C)

	Characteristic	Symbol	Rating	Unit
LED	Forward current	IF	60	mA
	Forward current derating (Ta ≥ 39°C)	ΔIF / °C	−0.7	mA / °C
	Peak forward current (100 μs pulse, 100 pps)	IFP	1	A
	Reverse voltage	VR	5	V
	Junction temperature	Tj	125	°C
Detector	Collector−emitter voltage	VCEO	55	V
	Collector−base voltage (TLP733)	VCBO	80	V
	Emitter−collector voltage	VECO	7	V
	Emitter−base voltage (TLP733)	VEBO	7	V
	Collector current	IC	50	mA
	Power dissipation	PC	150	mW
	Power dissipation derating (Ta ≥ 25°C)	ΔPC / °C	−1.5	mW / °C
	Junction temperature	Tj	125	°C
Storage temperature range		Tstg	−55~125	°C
Operating temperature range		Topr	−40~100	°C
Lead soldering temperature (10 s)		Tsol	260	°C
Total package power dissipation		PT	250	mW
Total package power dissipation derating (Ta ≥ 25°C)		ΔPT / °C	−2.5	mW / °C
Isolation voltage (AC, 1 min., R.H.≤ 60%)		BVS	4000	Vrms

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Recommended Operating Conditions

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Supply voltage	V CC	—	5	24	V
Forward current	IF	—	16	25	mA
Collector current	IC	—	1	10	mA
Operating temperature	Topr	−25	—	85	°C

Individual Electrical Characteristics (Ta = 25°C)

Characteristic		Symbol	Test Condition	Min.	Typ.	Max.	Unit
LED	Forward voltage	VF	IF = 10 mA	1.0	1.15	1.3	V
	Reverse current	IR	VR = 5 V	—	—	10	μA
	Capacitance	CT	V = 0, f = 1 MHz	—	30	—	pF
Detector	Collector−emitter breakdown voltage	V(BR)CEO	IC = 0.5 mA	55	—	—	V
	Emitter−collector breakdown voltage	V(BR)ECO	IE = 0.1 mA	7	—	—	V
	Collector−base breakdown voltage (TLP733)	V(BR)CBO	IC = 0.1 mA	80	—	—	V
	Emitter−base breakdown voltage (TLP733)	V(BR)EBO	IE = 0.1 mA	7	—	—	V
	Collector dark current	ICEO	VCE = 24 V (ambient light below 1000 ℓx)	—	0.01 (2)	0.1 (10)	μA
			VCE = 24 V, Ta = 85°C (ambient light below 1000 ℓx)	—	2 (4)	50 (50)	μA
	Collector dark current (TLP733)	ICER	VCE = 24 V, Ta = 85°C, RBE = 1MΩ	—	0.5	10	μA
	Collector dark current (TLP733)	ICBO	VCB = 10 V	—	0.1	—	nA
	DC forward current gain (TLP733)	h FE	VCE = 5 V, IC = 0.5 mA	—	400	—	—
	Capacitance collector to emitter	C CE	V = 0, f = 1 MHz	—	10	—	pF

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Coupled Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Condition	MIn.	Typ.	Max.	Unit
Current transfer ratio	IC / IF	IF = 5 mA, VCE = 5 V	50	—	600	%
		Rank GB	100	—	600	
Saturated CTR	IC / IF (sat)	IF = 1 mA, VCE = 0.4 V	—	60	—	%
		Rank GB	30	—	—	
Base photocurrent	I PB	IF = 5 mA, VCB = 5 V	—	10	—	%
Collector−emitter saturation voltage	VCE (sat)	IC = 2.4 mA, IF = 8 mA	—	—	0.4	V
		IC = 0.2 mA, IF = 1 mA	—	0.2	—	
		Rank GB	—	—	0.4	

Isolation Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Capacitance (input to output)	CS	VS = 0, f = 1 MHz	—	0.8	—	pF
Isolation resistance	RS	VS = 500 V, R.H.≤ 60%	1×10^{12}	10^{14}	—	Ω
Isolation voltage	B V S	AC, 1 minute	4000	—	—	Vrms
		AC, 1 second, in oil	—	10000	—	
		DC, 1 minute, in oil	—	10000	—	Vdc

Switching Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Rise time	tr	VCC = 10 V, IC = 2 mA RL = 100Ω	—	2	—	μs
Fall time	tf		—	3	—	
Turn−on time	t ON		—	3	10	
Turn−off time	t OFF		—	3	10	
Turn−on time	t ON	RL = 1.9 kΩ (Fig.1) RBE = open VCC = 5 V, IF = 16 mA	—	3	—	μs
Storage time	tS		—	40	—	
Turn−off time	t OFF		—	90	—	
Turn−on time	t ON	RL = 1.9 kΩ (Fig.1) RBE = 220 kΩ (TLP733) VCC = 5 V, IF = 16 mA	—	3	—	μs
Storage time	tS		—	30	—	
Turn−off time	t OFF		—	60	—	