Description

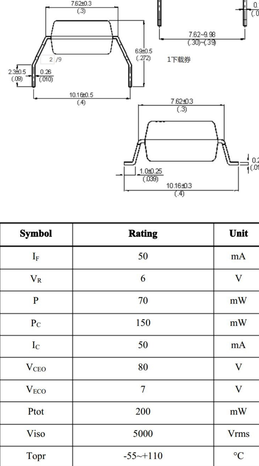
The CYTLP521 consist of a photo−transistor optically coupled to a gallium arsenide infrared emitting diode, The CYTLP521 offer sigal isolated channels in an eight lead plastic DIP , DIP-M or SMD package.

Features

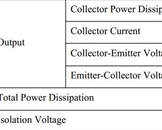
- Current transfer ratio (CTR: 130–600% at I_F =5mA ,V_{CE} =5V)
- High isolation voltage between input and output (Viso=5000 Vrms)
- Minimum BV_{CEO} of 80V guaranteed

Applications

- Switching power supply, intelligent meter
- Industrial control, measuring instruments
- Office equipment such as copiers
- Household appliances, such as air conditioners, fans, water heaters, etc.



Block Diagram and Package



Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Rating	Unit
Input	Forward Current	I_F	50	mA
	Reverse Voltage	V_R	6	V
	Power Dissipation	P	70	mW
Output	Collector Power Dissipation	P_C	150	mW
	Collector Current	I_C	50	mA
	Collector-Emitter Voltage	V_{CEO}	80	V
	Emitter-Collector Voltage	V_{ECO}	7	V
Total Power Dissipation		Ptot	200	mW
Isolation Voltage		Viso	5000	Vrms
Operating Temperature		Topr	-55~+110	°C
Storage Temperature		Tstg	-55~+125	°C
Soldering Temperature		Tsol	260	°C

Electro-optical Characteristics (Ta=25°C)

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage	V_{F1}	I_F=10mA	1.0	-	1.3	V
	Forward Voltage	V_{F2}	I_F=20mA	1.1	-	1.4	V
	Reverse Current	I_R	V_R=5V	-	-	10	μA
	Terminal Capacitance	C_t	V=0, f=1kHz	-	30	250	pF
Output	Collector Dark Current	I_{CEO}	V_{CE}=50V	-	-	100	nA
	Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=0.1mA, I_F=0	80	-	-	V
	Emitter-Collector Breakdown Voltage	BV_{ECO}	I_E=10μA, I_F=0	7	-	-	V
Transfer Characteristics	Current Transfer Ratio	CTR	I_F=5mA, V_{CE}=5V	130	-	600	%
	Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_F=2mA, I_C=5mA	-	0.25	0.8	V
	Isolation Resistance	R_{ISO}	DC500V, 40~60%R.H.	$1x10^{12}$	-	-	Ω
	Floating Capacitance	Cf	V=0, f=1MHz	-	0.6	1.0	pF
	Cut-off Frequency	Fc	V_{CE}=5V, I_C=2mA, R_L=100Ω, -3dB	-	80	-	kHz
Switching Characteristics	Rise Time	Tr	V_{CE}=10V, I_C=2mA, R_L=100Ω	-	2	-	μs
	Fall Time	Tf		-	3	-	μs
	Turn On Time	Ton		-	3	-	μs
	Turn Off Time	Toff		-	3	-	μs
	Turn On Time	Ton	RL = 1.9 kΩ Vcc = 5 V, IF = 16 mA	-	2	-	μs
	Storage time	Ts		-	15	-	μs
	Turn Off Time	Toff		-	25	-	μs

* CTR=I_C/I_F x 100%

Rank Table of CTR

Type	Classification	Current Transfer Ratio (%) (I_C/I_A) IF = 5mA, VCE = 5V, Ta = 25°C		Marking Of Classification
		Min	Max	
CYTLP521	A	50	600	
	Rank Y	50	150	
	Rank GR	100	300	
	Rank BL	200	600	
	Rank GB	100	600	

Fig.1 Test Circuits

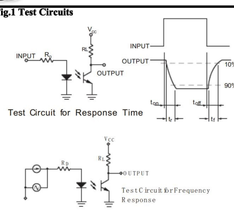


Fig.2 Current Transfer Ratio vs. Forward Current

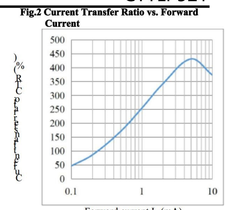


Fig.3 Forward Current vs. Forward Voltage

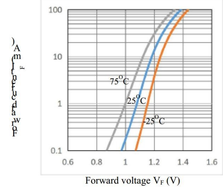


Fig.4 Collector Current vs. Collector-emitter Voltage