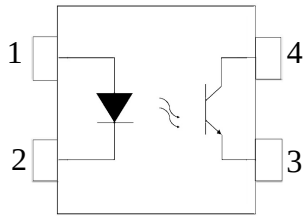
Summary

PS2701 is a small patch optoelectronic coupling device, suitable for surface mount production.

PS2701 is a optocoupler composed of a gallium arsenide led and a phototransistor. Its volume is smaller than dip. It is suitable for high-density surface mount applications, such as programmable controllers.

Structural schematic diagram



1. Anode
2. Cathode
3. Emitter
4. Collector

Characteristic

- Current conversion ratio (CTR) range: 50~300% (I_F =5mA ,V_{CE} =5V)
- Input output isolation voltage (Viso=5000 Vrms)
- Collector Emitter Breakdown Voltage BV_{CEO}≥80V
- Working temperature：-55~110° C
- UL -approved : UL 1577, File No .E 492440
- Accord with REACH and RoHS

Application

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

Limit parameter (Ta=25°C)

Parameter		Symbol	Condion	Unit
Input	Forward current	I_F	50	mA
	Forward pulse current	I_{FP}	1	A
	Reverse voltage	V_R	6	V
	Power derating	Δ P_D/° C	0.8	mW/℃
	Power waste	P_D	80	mW/ch
	Junction temperature	Tj	125	℃
Output	Collector power consumption	P_C	150	mW
	Collector current	I_C	50	mA
	Collector Emitter Voltage	V_{CEO}	80	V
	Emitter collector voltage	V_{ECO}	7	V
	Junction temperature	Tj	125	℃
Total power consumption		Ptot	200	mW
Isolation voltage		Viso	5000	Vrms
working temperature		Topr	-55~+110	℃
Storage temperature		Tstg	-55~+150	℃
welding temperature		Tsol	260(10s)	℃

Photoelectric characteristics (Ta=25°C)

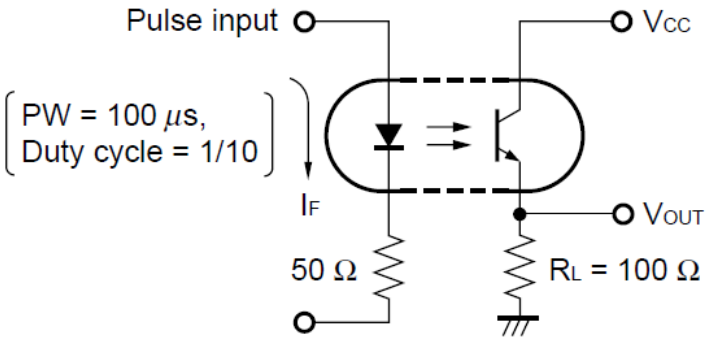
Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Input	Forward voltage	V_F	I_F=5mA		1.1	1.4	V
	Reverse current	I_R	V_R=5V			5	μA
	Input capacitance	C_{in}	V=0, f=1MHz	-	30		pF
Output	Collector dark current	I_{CEO}	V_{CE}=70V			100	nA
	Collector Emitter Breakdown Voltage	BV_{CEO}	I_C=0.1mA, I_F=0	80			V
	Emitter collector breakdown voltage	BV_{ECO}	I_E=0.1mA, I_F=0	7			V
Transmission characteristics	Current conversion ratio	CTR	I_F=5mA, V_{CE}=5V	50	100	300	%
	Collector Emitter Saturation Voltage Drop	$V_{CE(sat)}$	I_F=10mA, I_C=2mA			0.3	V
	Isolation resistance	R_{ISO}	DC1000V, 40~60%R.H.	$1x10^{11}$			Ω
	Isolation capacitance	Cf	V=0, f=1MHz		0.6	1.0	pF
	Collector Emitter capacitance	C_{CE}	V=0, f=1MHz		10		pF
	Input output capacitance	C_S	V=0, f=1MHz		0.8		pF
	cut-off frequency	Fc	V_{CE}=5V, I_C=2mA, R_L=100Ω, -3dB		80		kHz
Switching time	Rise time	Tr	V_{CE}=5V, I_C=2mA, R_L=100Ω	-	3		μs
	Descent time	Tf			5		μs

* CTR=I_C/I_F x 100%

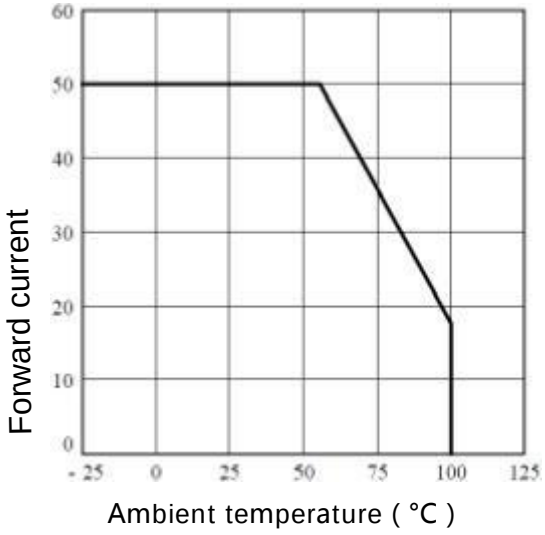
CTR Classification table

Model	Grading standard	Current conversion rate(%)(I_C/I_F)		
		I_F = 5mA, V_{CE} = 5V, Ta = 25°C		
		Min	Type	Max
PS2701	M	50	-	150
	P	150	-	300
	L	200	-	350
	K	300	-	450
	LK	400	-	600

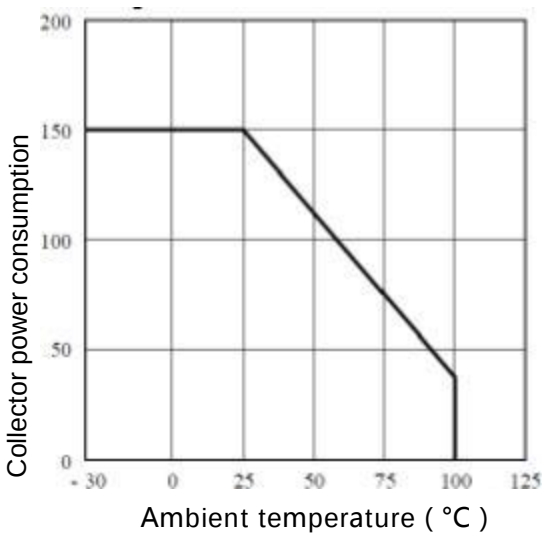
Test circuit



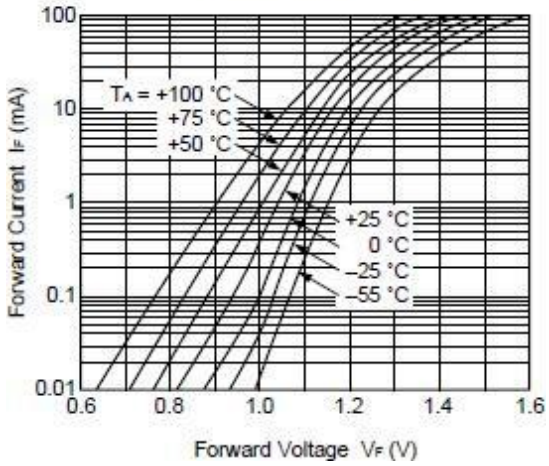
I_F-Ta



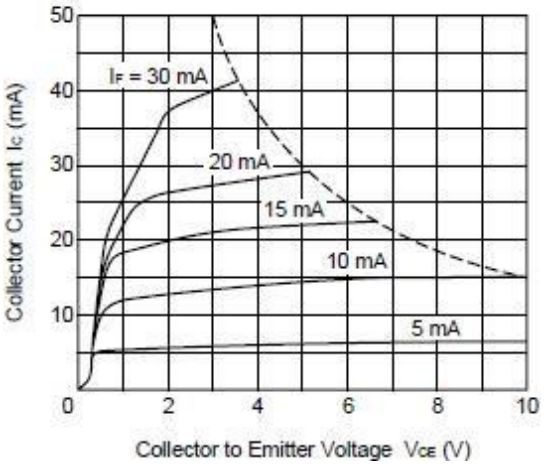
P_C-Ta



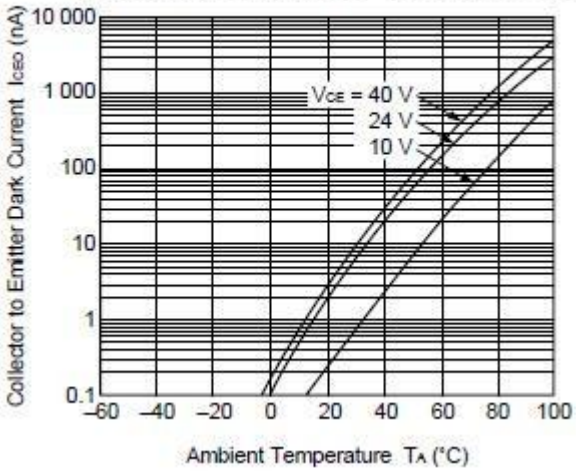
FORWARD CURRENT vs.
FORWARD VOLTAGE



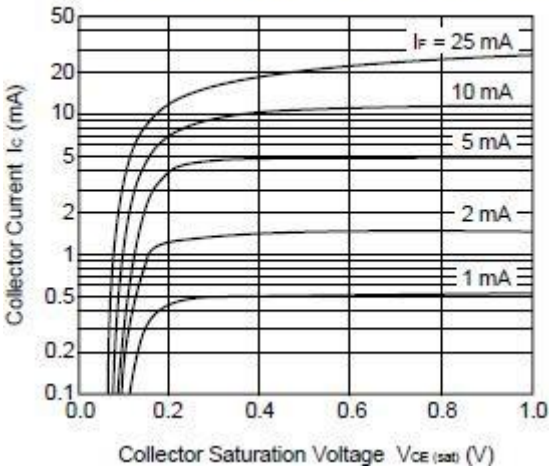
COLLECTOR CURRENT vs.
COLLECTOR TO EMITTER VOLTAGE



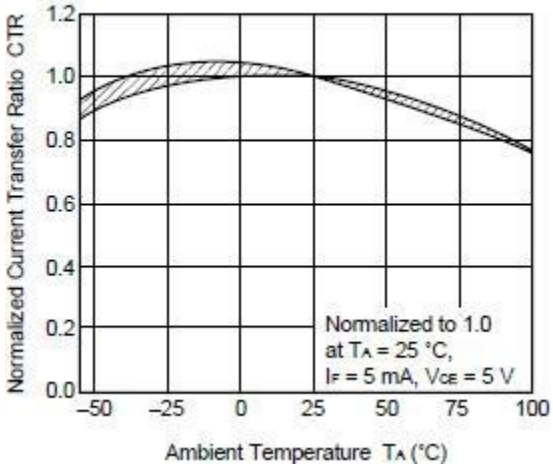
COLLECTOR TO EMITTER DARK CURRENT vs. AMBIENT TEMPERATURE



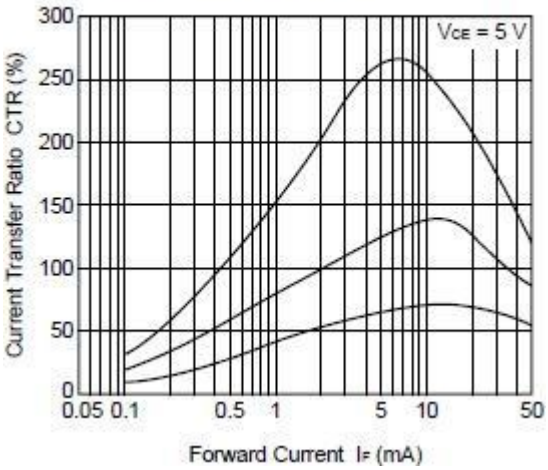
COLLECTOR CURRENT vs. COLLECTOR SATURATION VOLTAGE



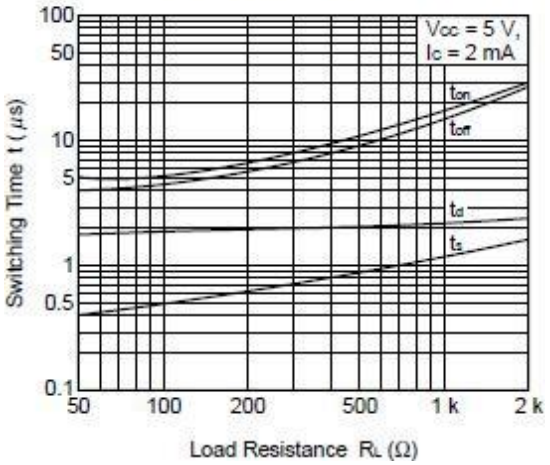
NORMALIZED CURRENT TRANSFER RATIO vs. AMBIENT TEMPERATURE



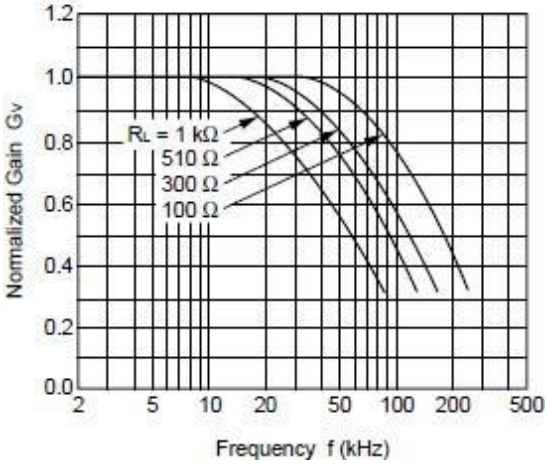
CURRENT TRANSFER RATIO vs. FORWARD CURRENT

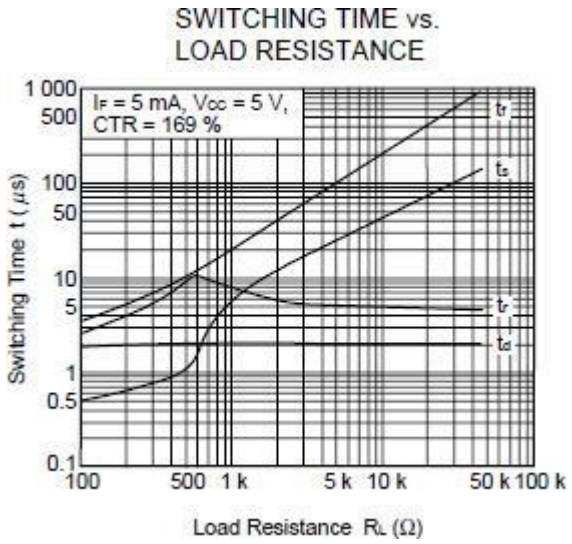


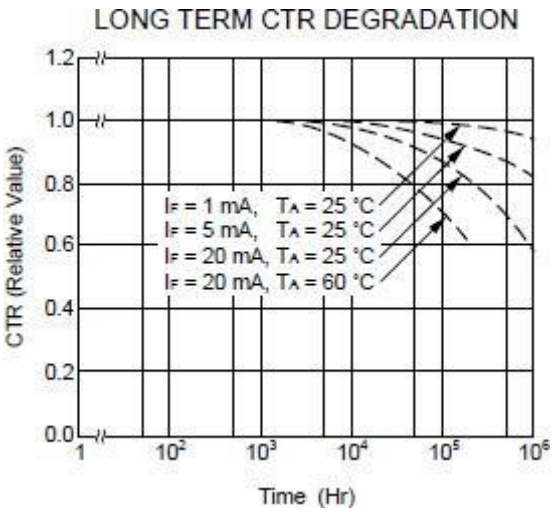
SWITCHING TIME vs. LOAD RESISTANCE



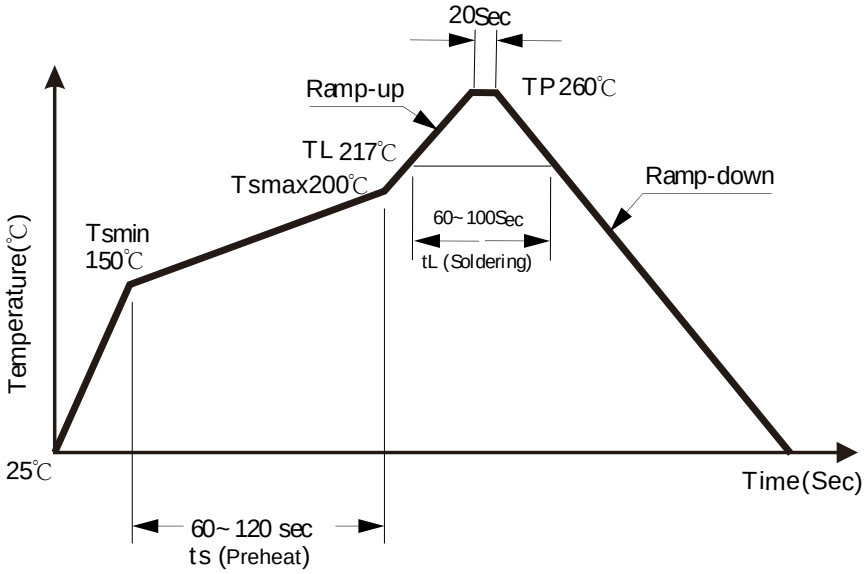
FREQUENCY RESPONSE



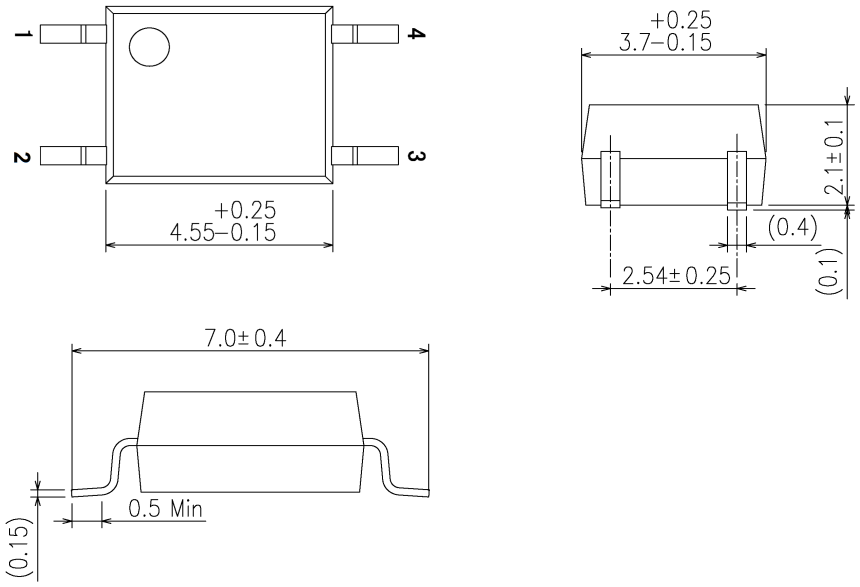




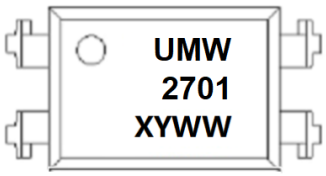
Reflow soldering temperature curve



PACKAGE OUTLINE



Marking



"X" : Grading standard

"YWW" : Year week number

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