ORIENT

Photo coupler

Product Data Sheet

Part Number: ORPC-817-(GK)

Customer: _____

Date: _____

一级代理商：

深圳市弗瑞鑫电子有限公司

地址：深圳市宝安区西乡大道302号金源商务大厦B座三楼

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frxelec

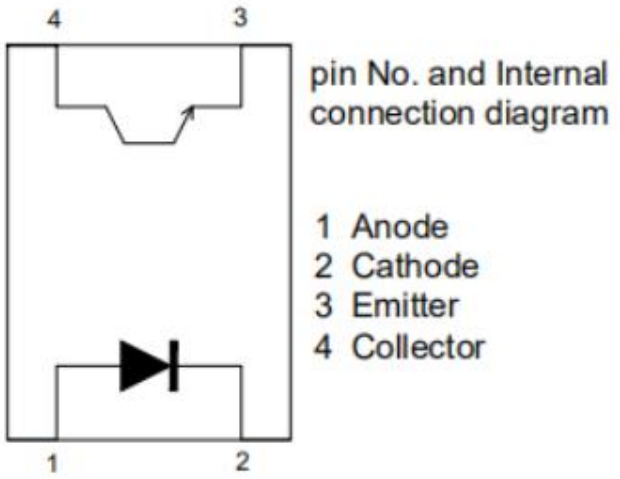
(1) Current transfer ratio (CTR : MIN. 50% at I_F = 5mA, V_{CE} = 5V)
(2) High input-output isolation voltage (V_{iso} = 5,000Vrms)
(3) Response time (tr : TYP. 2.9 s at V_{CE} = 2V, I_C = 2mA, R_L = 100)
(4) ESD pass HBM 8000V/MM 2000V
(5) Safety approval

UL	approved (No.E323844)
VDE	approved(No.40029733)
CQC	approved (No.CQC09001029446)
CE	approved (No.AC/0431008)
State Grid	approved (No.SGCM013420170152)

(6) In compliance with RoHS, REACH standards
(7) MSL Class

(1) ORPC-817-(GK) photo coupler consist of one piece of GaAs emitter and one piece of NPN transistor.
(2) Packaged in a 4-pin DIP package and available in wide-lead spacing and SMD option.

(1) Switching power supply
(2) Ammeter
(3) Computer
(4) Instrumental application, measurement machine
(5) Signal transforming systems
(6) Imbursement equipments, duplicating machine, automat
(7) Family-use electric equipments, such as fans



	Forward Voltage	V_F	---	1.2	1.4	V	I_F=20mA
	Reverse Current	I_R	---	---	5	A	V_R=5V
	Input Capacitance	C_t	---	10	200	pF	V=0, f=1MHz
	Dark Current	I_{CEO}	---	---	100	nA	V_{CE}=20V I_F=0mA
	Collector and Emitter attenuation Voltage	BV_{CEO}	80	---	---	V	I_C=0.1mA I_F=0mA
	Emitter and Collector attenuation Voltage	BV_{ECO}	7	---	---	V	I_E=0.1mA I_F=0mA
	*1 Current transfer ratio	CTR	50	---	600	%	I_F=5mA V_{CE}=5V
	Collector Current	I_C	2.5	---	30	mA	I_F=5mA V_{CE}=5V
	Collector and Emitter Saturation Voltage	$V_{CE(sat)}$	---	0.1	0.2	V	I_F=20mA I_C= 1mA
	Isolation Impedance	R_{iso}	5 10^{10}	1 10^{12}	---		DC500V 40~60%R.H.
	Floating Capacitance	C_f	---	0.4	1.0	pF	V=0, f=1MHz
	Cut-off Frequency	f_c	---	260	---	kHz	V_{CE}=5V I_C=2mA R_L=100 , -3dB
	Rise Time	t_r	---	2.9	10	s	V_{CC}=2V I_C=2mA R_L=100
	Fall Time	t_f	---	4.5	10	s	
	Turn-on Time	t_{on}	---	6.3	10	s	
	Turn-off Time	t_{off}	---	7.1	10	s	

*1 Current Conversion Ratio = I_C / I_F 100% , CTR Tolerance:±3%.

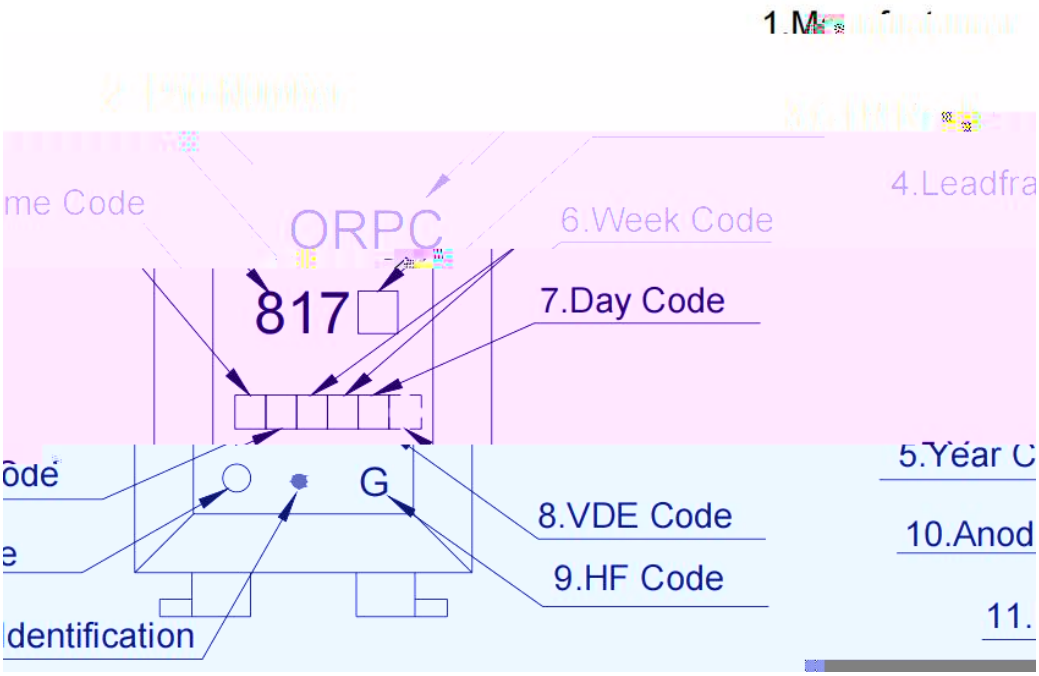
L	50	100	I_F=5mA, V_{CE}=5V, Ta=25	%
A	80	160		
B	130	260		
C	200	400		
D	300	600		

A5	4	20	I_F=0.1mA, V_{CE}=5V, Ta=25	%
B5	6.5	34		
C5	10	52		
D5	15	78		
A6	24	72	I_F=0.5mA, V_{CE}=5V, Ta=25	
B6	40	120		
C6	70	140		
D6	90	270		
A7	40	105	I_F=1mA, V_{CE}=5V, Ta=25	
B7	65	170		
C7	100	260		
D7	150	390		

X = Lead form option (S, M or none)

T = CTR Rank (L, A, B, C, D, A5, B5, C5...)

V = Ta □



(1) ORIENT PHOTOCOUPLER.

(2) 817 denotes Device Part Number.

(3) ☐ denotes Rank Code.(Number not mark, L,A,B,C or D only)

(For example C6 mark C only)

(4) ☐ denotes Lead Frame Code.

(5) ☐ denotes Year Code.

(6) ☐☐ denotes Week Code.

(7) ☐ denotes Day Code.

(8) ⬚ denotes VDE Code. (Optional)

(9) ⬚ denotes HF Code. (Copper for HF only)

(10) Anode.

(11) Identification.

* VDE Mark can be selected.

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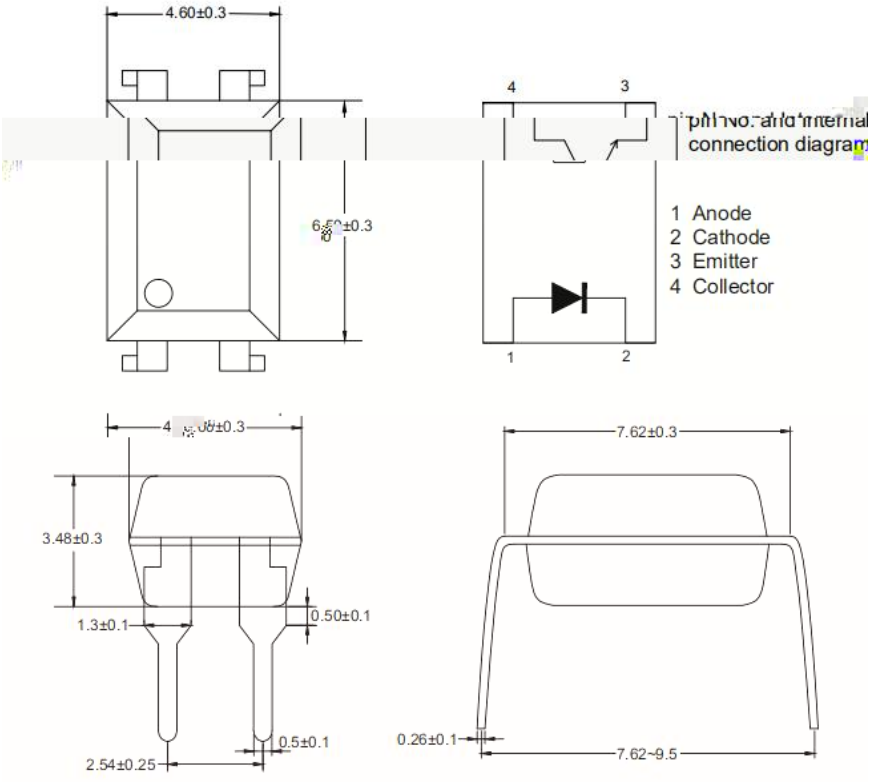
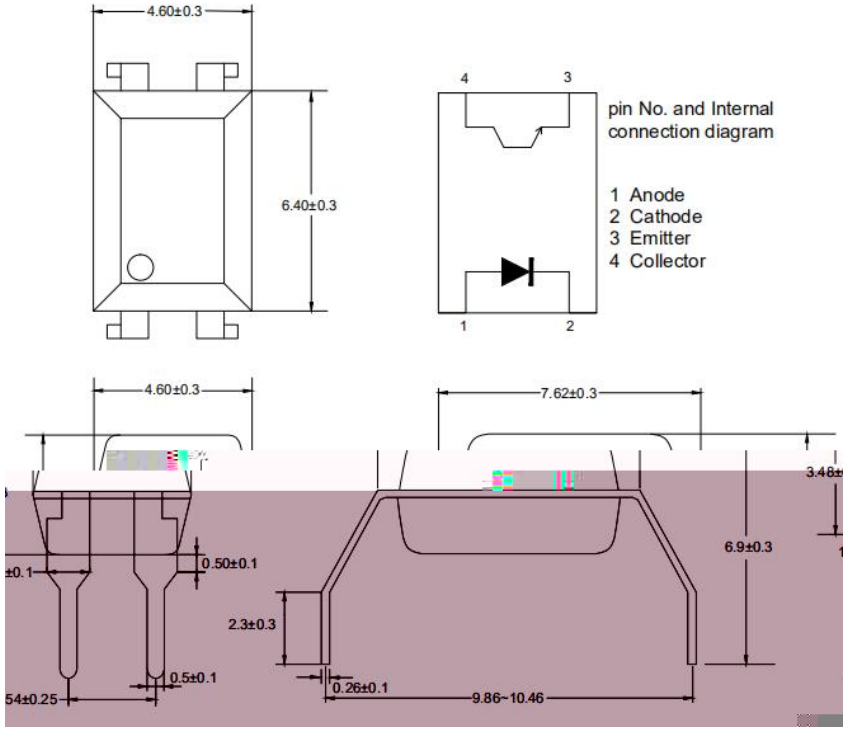

4.60±0.3
6.40±0.3
4
3
pin No. and Internal
connection diagram
1 Anode
2 Cathode
3 Emitter
4 Collector
1
2
3.48±0.3
1.3±0.1
0.50±0.1
0.5±0.1
2.54±0.25
7.62±0.3
0.26±0.1
7.62~9.5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4.60±0.3
7.62±0.3
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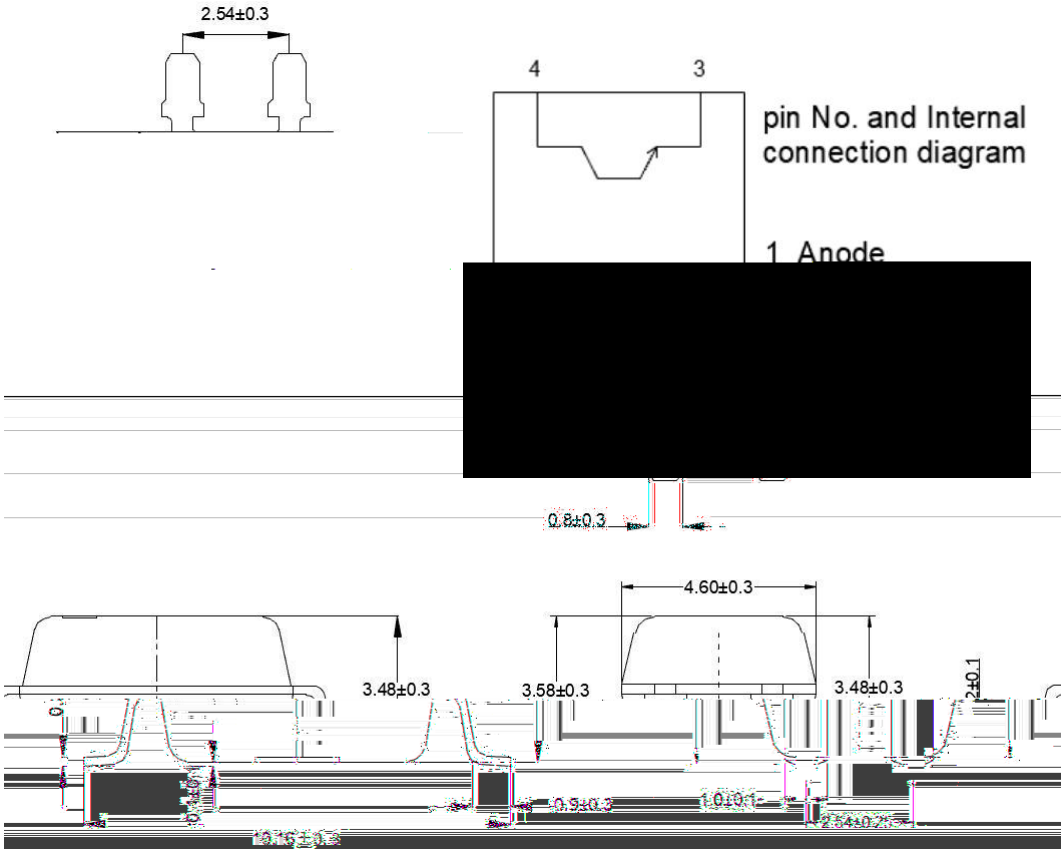
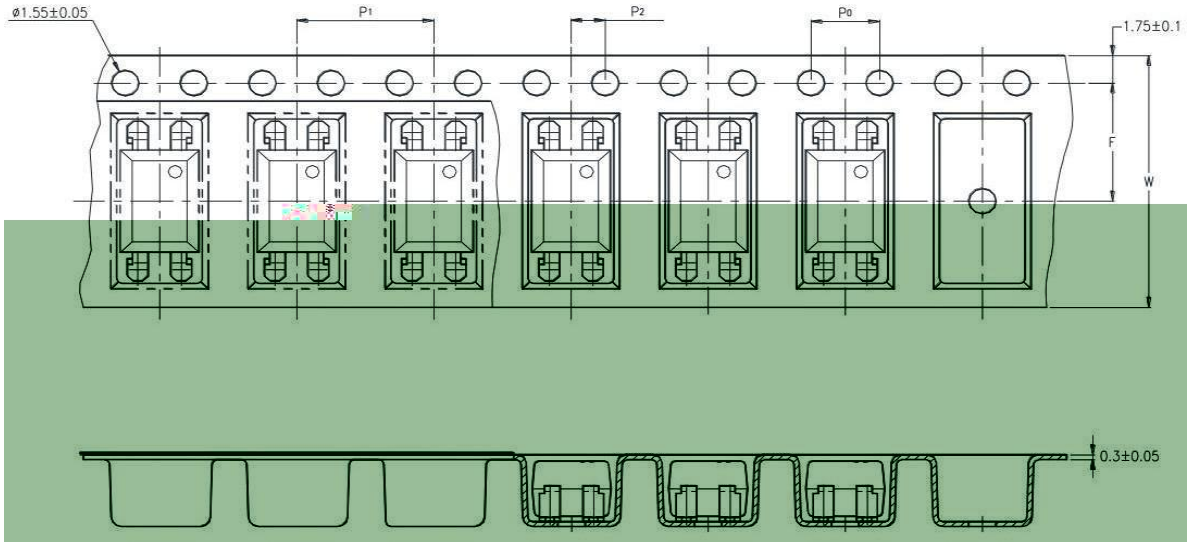
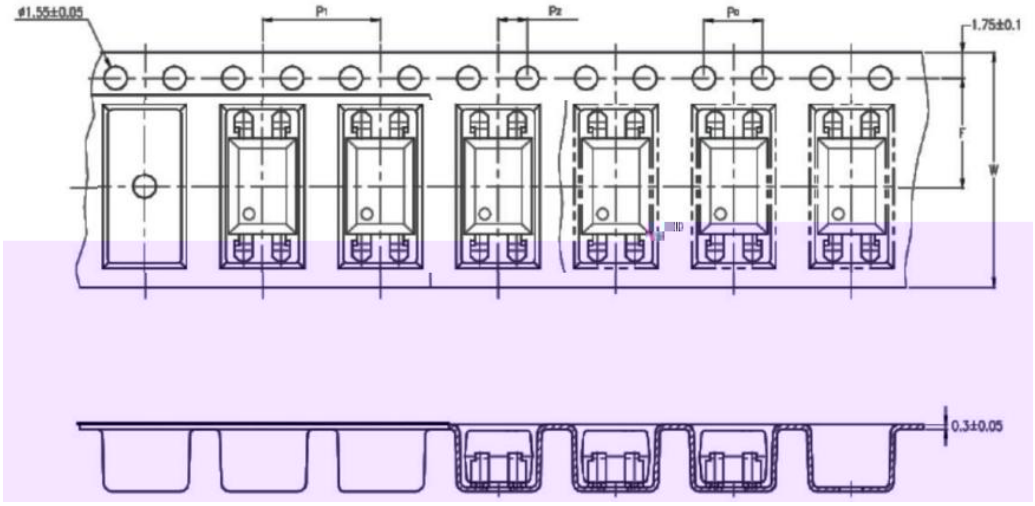
0.5±0.1
2.3±0.3
0.26±0.1
9.86~10.46
6.9±0.3


2.54±0.3
4
3
pin No. and Internal
connection diagram
1. Anode
0.9±0.3
4.60±0.3
3.48±0.3
3.58±0.3
3.48±0.3
2±0.1
0.5±0.3
1.0±0.1


ø1.55±0.05
P1
P2
P0
1.75±0.1
F
W
0.3±0.05



Tape wide	W	16±0.3 (.63)
Pitch of sprocket holes	P_0	4±0.1 (.15)
Distance of compartment	F	7.5±0.1 (.295)
	P2	2±0.1 (.0079)
Distance of compartment to compartment	P1	8±0.1 (.472)

Package Type	TP/TP1
Quantities(pcs)	2000

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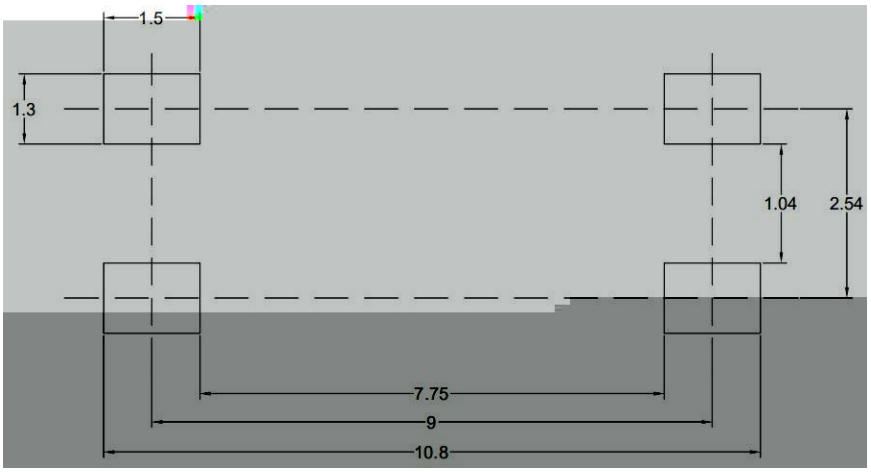

		Reliability Testing				
1	耐焊接热	22	260±5℃	10s/3 次	锡炉	JESD22-A106
2	高温存储	77	125℃	168 hrs 500 hrs 1000 hrs	高温烤箱 测试仪	JESD22-A103
3	低温存储	77	-55℃	168 hrs 500 hrs 1000 hrs	低温箱 测试仪	JESD22-A119
4	温度循环	77	H:125℃ 15min ∫ 5min L:-55℃ 15min	300 cycle	冷热冲击机	JESD22-A104
5	温度冲击	77	H:100℃ 5min ∫ 15s L:-40℃ 5min	300 cycle	冷热冲击机	JESD22-A106
6	高温操作	77	110℃ IF=10mA Vce=5V	168 hrs 500 hrs 1000 hrs	高温烤箱 测试仪、老 化电路板	JESD22-A108
7	人体模式	22	≥8KV 1Cycle	1次	ESD静电测 试仪	JESD22-A114
8	可焊性	22	Pb-free 245±5℃	5S/1次	锡炉	JESD22-B102
9	HTRB 高温反向偏压	77	HTRB @125℃ Vce=80v	168 hrs 500 hrs 1000 hrs	高温烤箱 ，测试仪	JESD22-A103
10	H3TRB 温湿度反向偏压，寿命试验	77	H3TRB 85℃,85%RH Vce=80v	168 hrs 500 hrs 1000 hrs	恒温恒湿 机，测试仪	JESD22-A101
11	Autoclave 压力锅	77	Ta=121 ℃,100%RH,2atm	96hrs	压力锅	JESD22-A102

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Fig.1 Forward current vs Ambient temperature

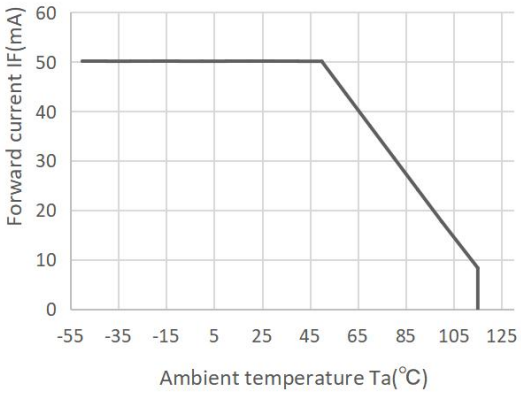


Fig.2 Collector Power Dissipation vs. Ambient temperature

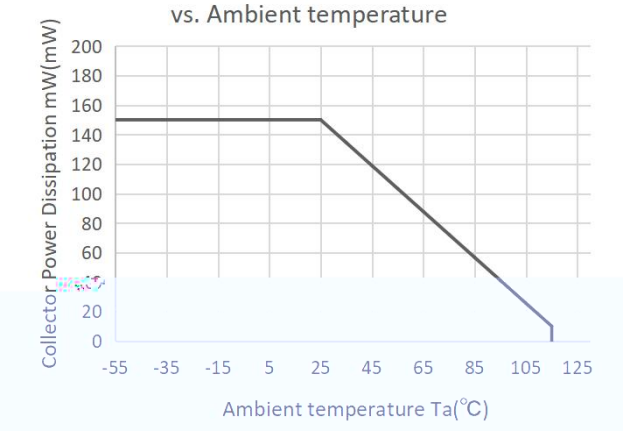


Fig.3 Collector-emitter Saturation Voltage vs. Forward Current

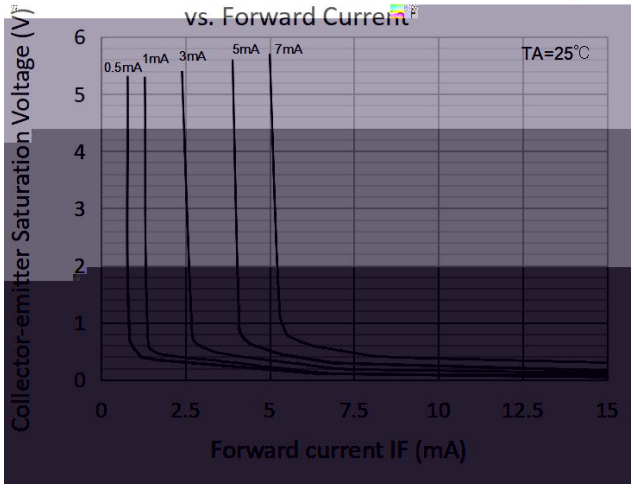


Fig.4 Forward Current vs. Forward Voltage

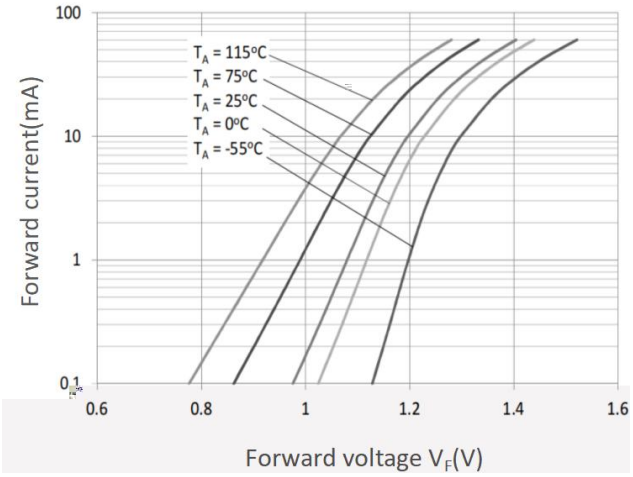


Fig.5 Forward Current vs. Current Transfer Ration

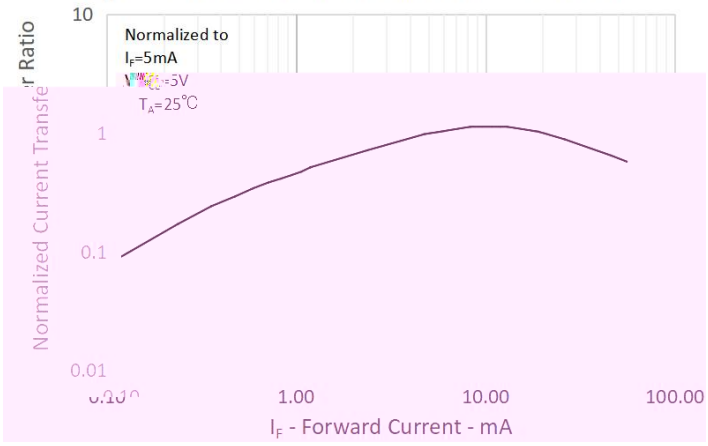


Fig.6 Collector Current vs. Collector-emitter Voltage

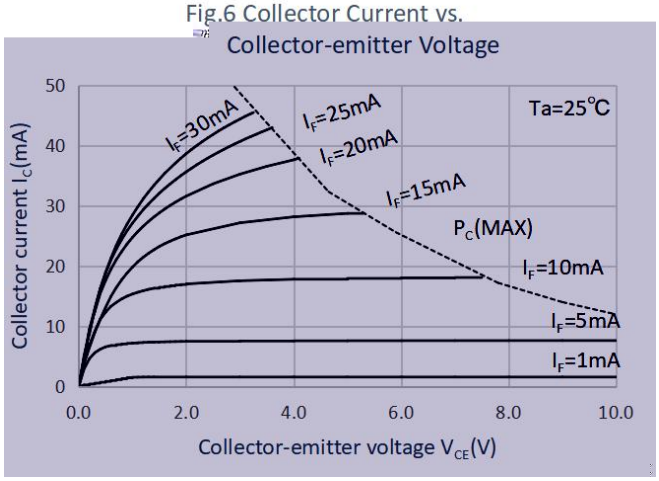


Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

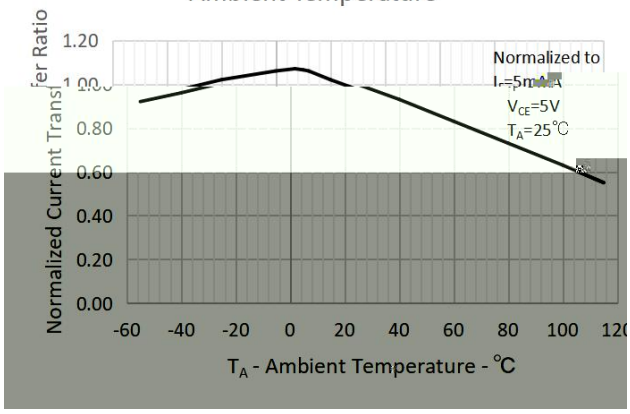


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

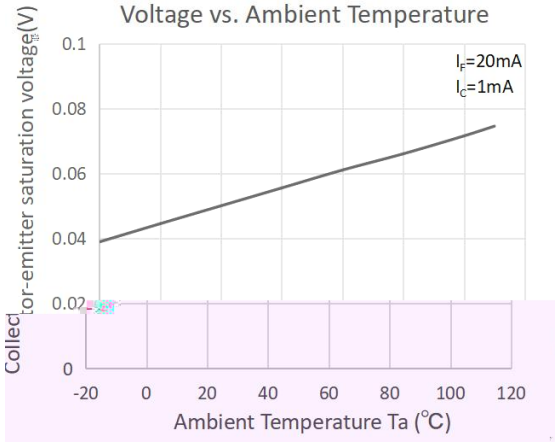


Fig.9 Collector Dark Current vs. Ambient Temperature

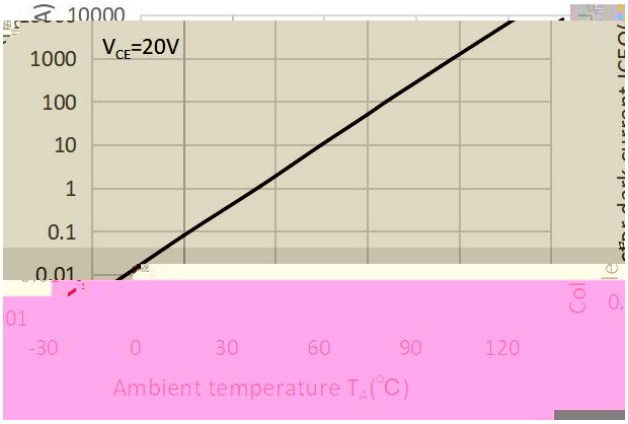


Fig.10 Respinse Time vs. Load Resistance

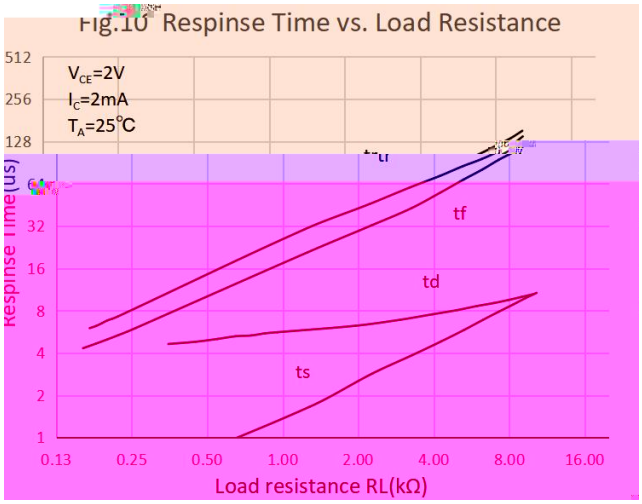
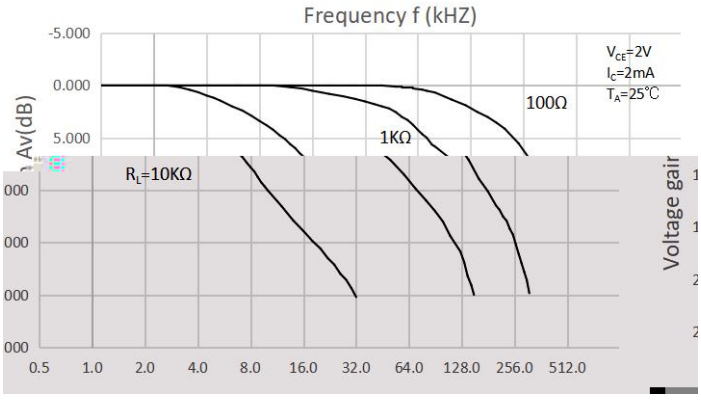
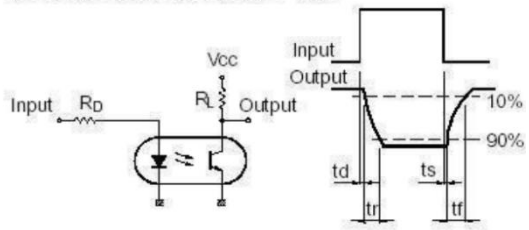


Fig.11 Frequency Response



Test Circuit for Response Time



Test Circuit for Frequency Response