



# ORIENT

## Pho o co pler

### Prod c Da a Shee

Par N mber: ORPC-817-(GK)

C omer: \_\_\_\_\_

Da e: \_\_\_\_\_

#### 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

frxelec

- (1) Current transfer ratio (CTR : MIN. 50% at  $I_F = 5\text{mA}$ ,  $V_{CE} = 5\text{V}$ )
- (2) High input-output isolation voltage ( $V_{i-o} = 5,000\text{V}_{\text{rms}}$ )
- (3) Repetitive time (tr : TYP. 2.9  $\mu\text{s}$  at  $V_{CE} = 2\text{V}$ ,  $I_C = 2\text{mA}$ ,  $R_L = 100\ \Omega$ )
- (4) ESD protection HBM 8000V/MM 2000V
- (5) Safe approval

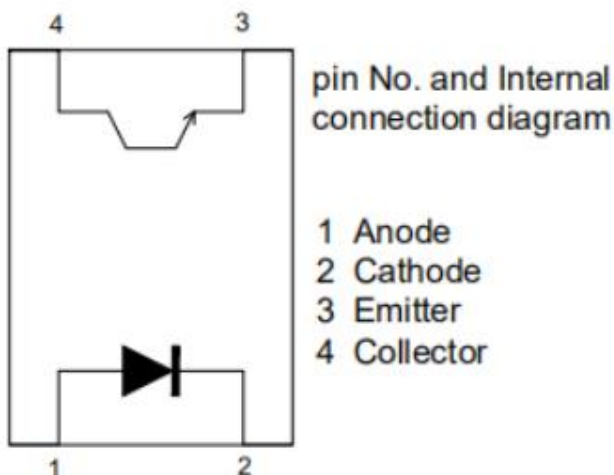
- UL approved (No.E323844)
- VDE approved (No.40029733)
- CQC approved (No.CQC09001029446)
- CE approved (No.AC/0431008)
- Safety Grid approved (No.SGCM013420170152)

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



- (1) ORPC-817-(GK) photo coupler consists 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) Signal chipping power supply
- (2) Ammeter
- (3) Computer
- (4) Industrial application, measuring machine
- (5) Signal waveform generator
- (6) Image measuring equipment, duplicating machine, automatic
- (7) Family electronic equipment, chassis fan





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	For ard Vol age	$V_F$	---	1.2	1.4	V	$I_F=20mA$
	Re er e C rren	$I_R$	---	---	5	A	$V_R=5V$
	Inp Capaci ance	C	---	10	200	pF	$V=0, f=1MH$
	Dark C rren	$I_{CEO}$	---	---	100	nA	$V_{CE}=20V$ $I_F=0mA$
	Collec or and Emi er a en a ion Vol age	$BV_{CEO}$	80	---	---	V	$I_C=0.1mA$ $I_F=0mA$
	Emi er and Collec or a en a ion Vol age	$BV_{ECO}$	7	---	---	V	$I_E=0.1mA$ $I_F=0mA$
	*1 C rren ran fer ra io	CTR	50	---	600	%	$I_F=5mA$ $V_{CE}=5V$
	Collec or C rren	$I_C$	2.5	---	30	mA	$I_F=5mA$ $V_{CE}=5V$
	Collec or and Emi er Sa ra ion Vol age	$V_{CE(a)}$	---	0.1	0.2	V	$I_F=20mA$ $I_C=1mA$
	I ola ion Impedance	$R_{i o}$	$5 \cdot 10^{10}$	$1 \cdot 10^{12}$	---		DC500V 40 60%R.H.
	Floa ing Capaci ance	$C_f$	---	0.4	1.0	pF	$V=0, f=1MH$
	C -off Freq enc	$f_c$	---	260	---	kH	$V_{CE}=5V$ $I_C=2mA$ $R_L=100 \Omega, -3dB$
	Ri e Time	$t_r$	---	2.9	10		$V_{CC}=2V$ $I_C=2mA$ $R_L=100 \Omega$
	Fall Time	$t_f$	---	4.5	10		
	T rn-on Time	$t_{on}$	---	6.3	10		
	T rn-off Time	$t_{off}$	---	7.1	10		

\*1 C rren Con er ion Ra io =  $I_C / I_F$  100% , CTR Tolerance: 3%.



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

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



# IRIS

## FORMS

Mark lead form option (S, M or none)

T = CTR Rank (1 to 5)

Mark

Mark

Mark

Mark

Mark

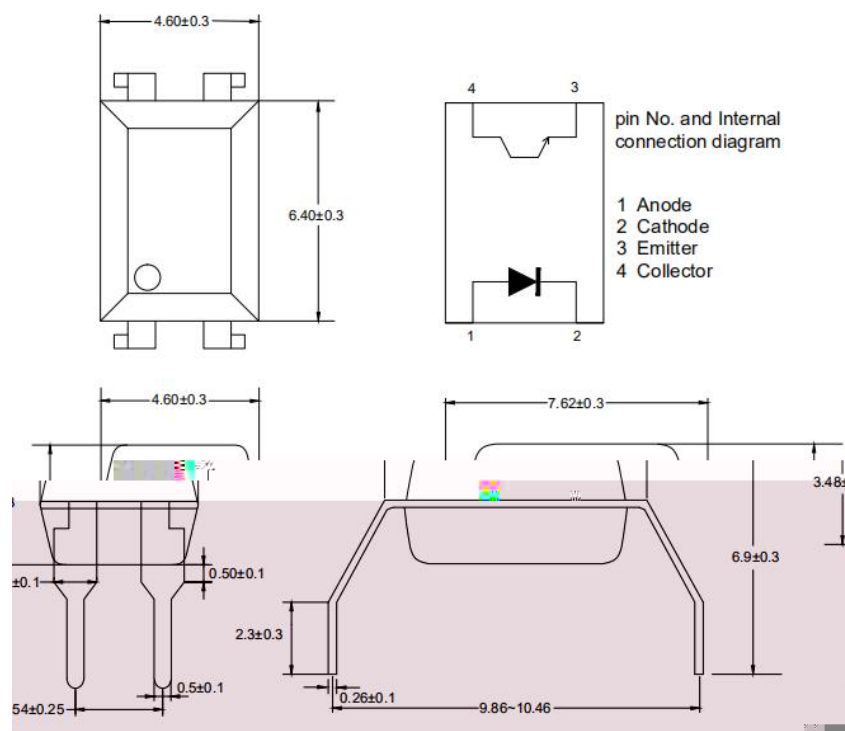
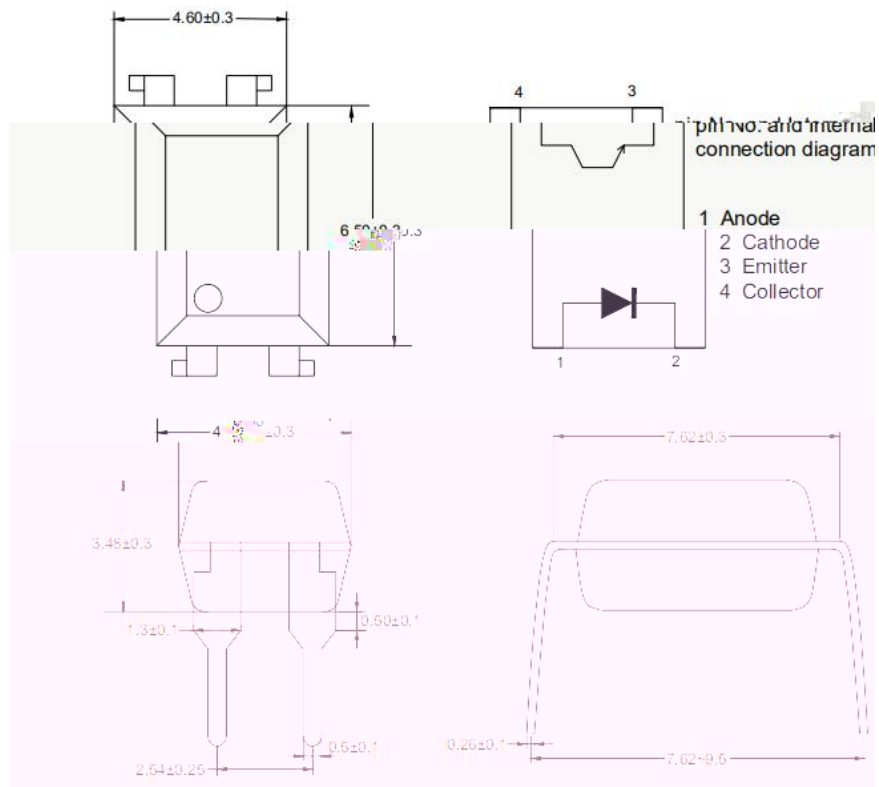
# IRIS



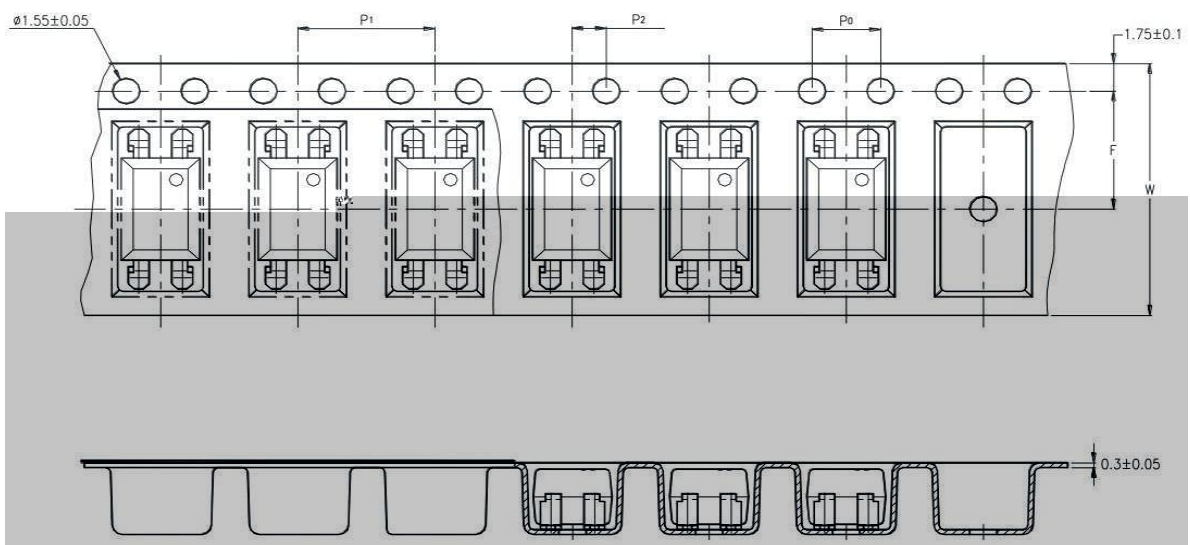
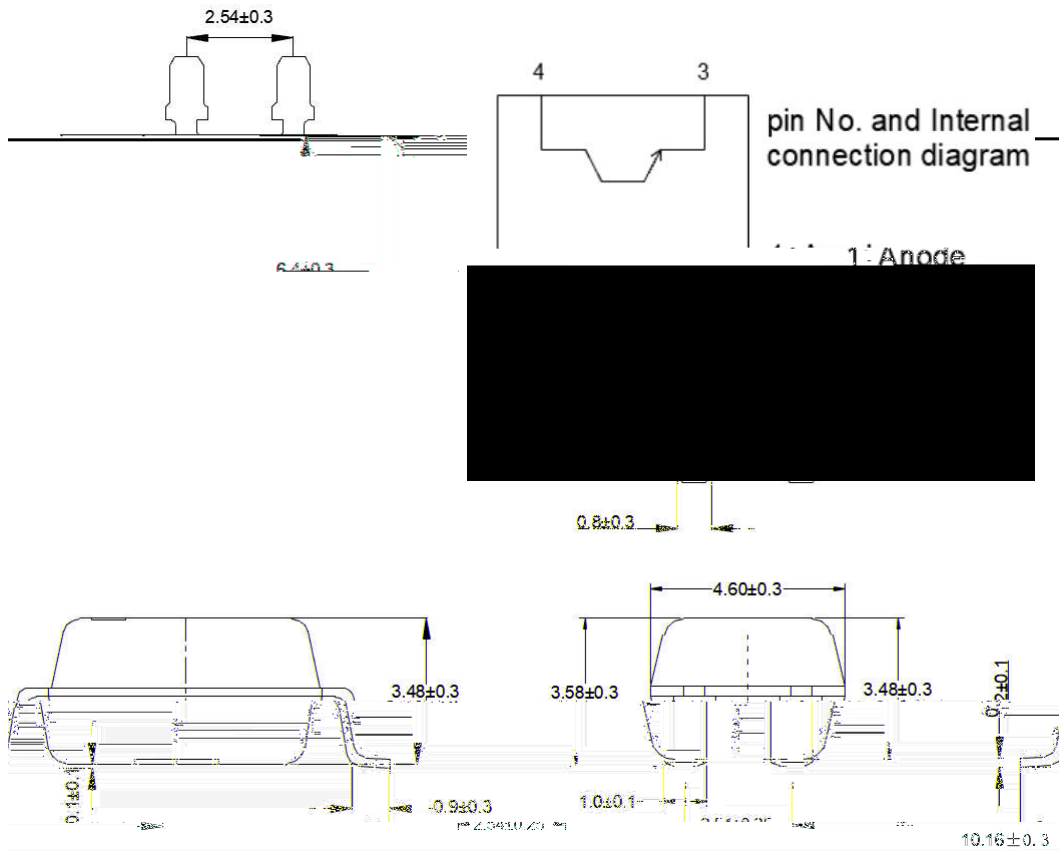
- (1) ORIENT PHOTOCOUPLER.
- (2) 817 deno e De ice Par N mber.
- (3)  deno e Rank Code.(N mber no mark, L,A,B,C or D onl )  
(For e ample C6 mark C onl )
- (4)  deno e Lead Frame Code.
- (5)  deno e Year Code.
- (6)  deno e Week Code.
- (7)  deno e Da Code.
- (8)  deno e VDE Code. (Op ional)
- (9)  deno e HF Code. (Copper for HF onl )
- (10) Anode.
- (11) Iden ifica ion.

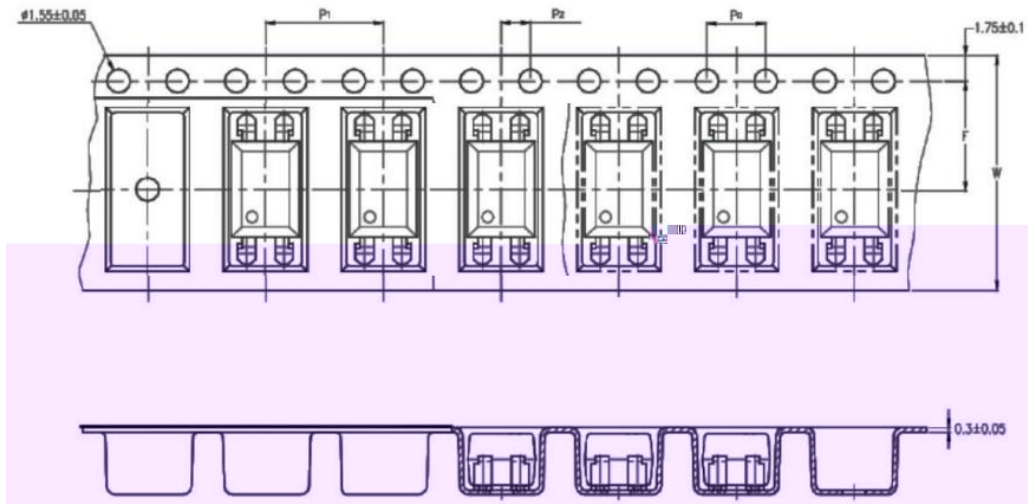
\* VDE Mark can be elec ed.

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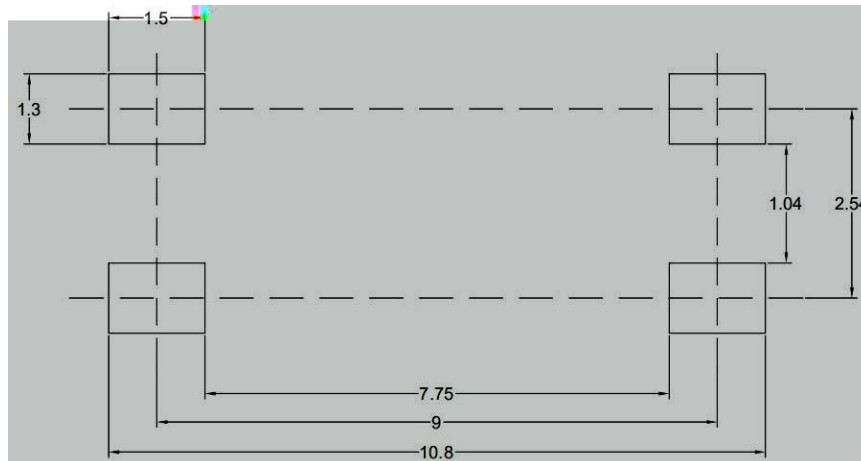




Tape width	W	16.0 ± 0.3 (.63)
Pitch of sprocket hole	$P_0$	4.0 ± 0.1 (.15)
Distance of comparison	F	7.5 ± 0.1 (.295)
	$P_2$	2.0 ± 0.1 (.0079)
Distance of comparison of comparison	$P_1$	8.0 ± 0.1 (.472)

Package Type	TP/TP1
Quantity (pc)	2000

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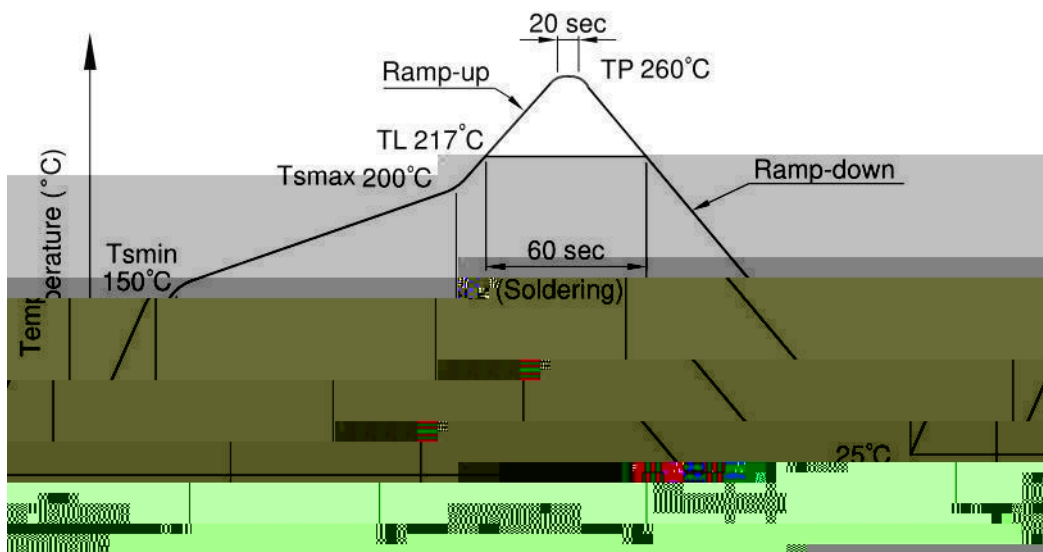
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		Reliability Testing				
1	耐焊接热	22	260±5℃	10 /3 次	锡炉	JESD22-A106
2	高温存储	77	125℃	168 hr	高温烤箱 测试仪	JESD22-A103
				500 hr		
				1000 hr		
3	低温存储	77	-55℃	168 hr	低温箱 测试仪	JESD22-A119
				500 hr		
				1000 hr		
4	温度循环	77	H:125℃ 15min ∫ 5min L:-55℃ 15min	300 c cle	冷热冲击机	JESD22-A104
5	温度冲击	77	H:100℃ 5min ∫ 15 L:-40℃ 5min	300 c cle	冷热冲击机	JESD22-A106
6	高温操作	77	110℃ IF=10mA Vce=5V	168 hr	高温烤箱 测试仪、老 化电路板	JESD22-A108
				500 hr		
				1000 hr		
7	人体模式	22	≥8KV 1C cle	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=80	168 hr	高温烤箱 , 测试仪	JESD22-A103
				500 hr		
				1000 hr		
10	H3TRB 温湿度反向偏 压, 寿命试验	77	H3TRB 85℃,85%RH Vce=80	168 hr	恒温恒湿 机, 测试仪	JESD22-A101
				500 hr		
				1000 hr		
11	Autoclave 压力锅	77	Ta=121 ℃,100%RH,2a m	96hr	压力锅	JESD22-A102

One time soldering reflow is recommended within the condition of temperature and time profile shown below. Do not solder more than three times.

Preheat	
- Temperature Min (T <sub>Smin</sub> )	150 C
- Temperature Max (T <sub>Smax</sub> )	200 C
- Time (min o max) ( )	90 30 sec
Soldering zone	
- Temperature (TL)	217 C
- Time ( L)	60 sec
Peak Temperature	260 C
Peak Temperature time	20 sec
Ramp-up rate	3 C / sec max.
Ramp-down rate from peak temperature	3 6 C / sec
Reflow time	3





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Fig.1 Forward current vs Ambient temperature

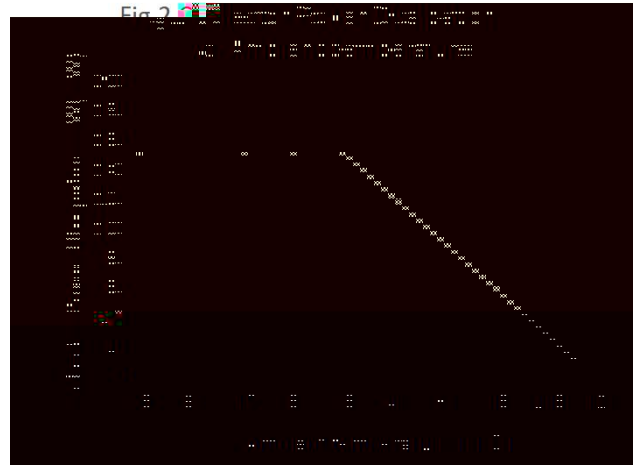
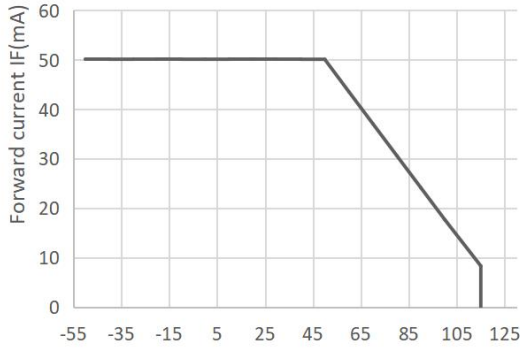


Fig.3 Collector-emitter Saturation Voltage

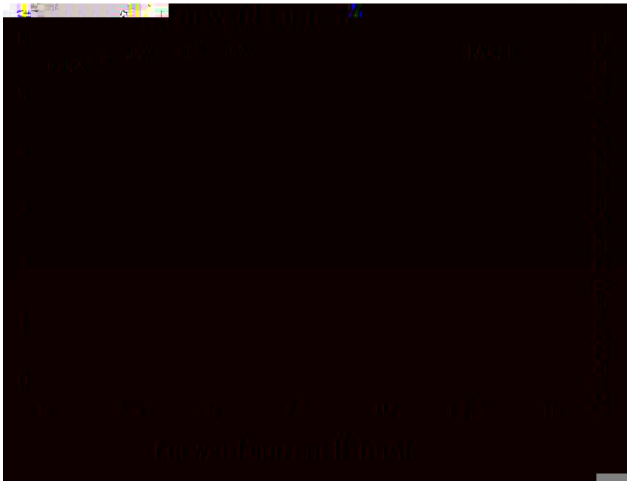


Fig.4 Forward Current vs. Forward Voltage

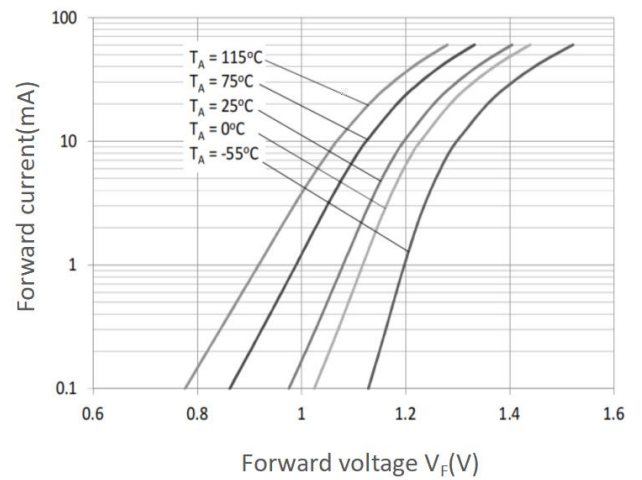


Fig.5 Forward Current vs. Current Transfer Ratio

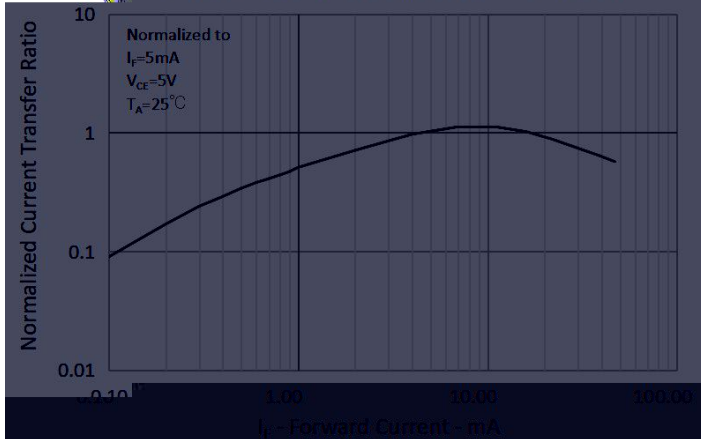


Fig.6 Collector Current vs. Collector-emitter Voltage

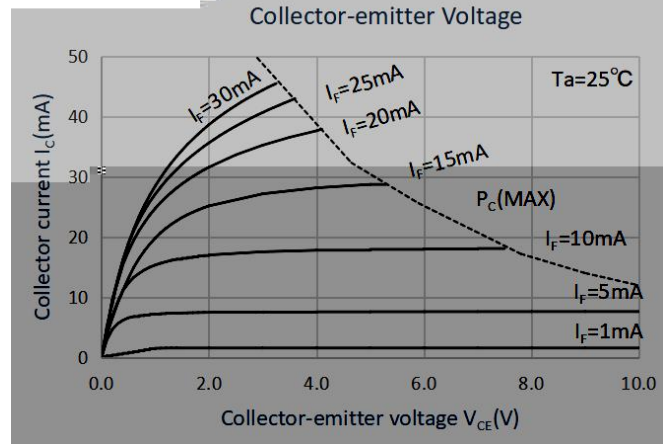


Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

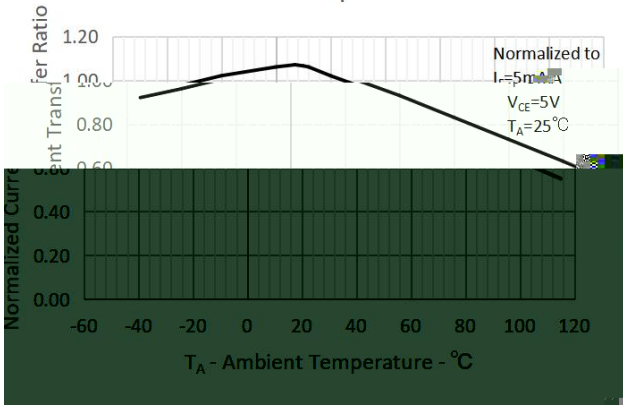


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

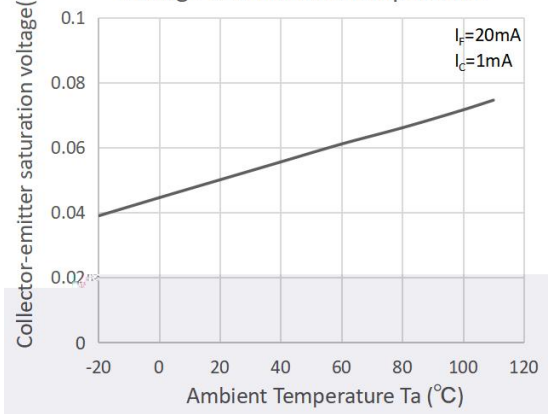


Fig.9 Collector Dark Current vs. Ambient Temperature

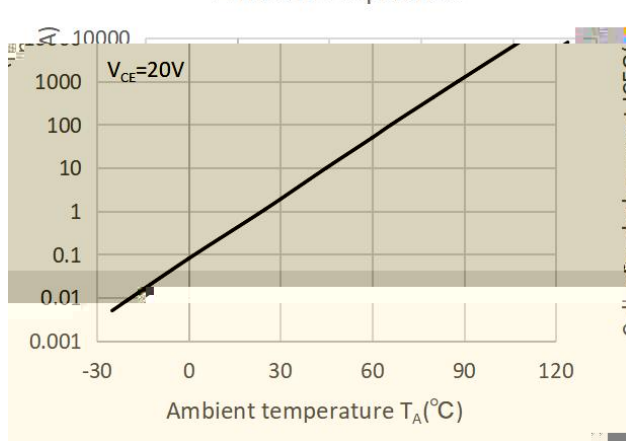


Fig.10 Respinse Time vs. Load Resistance

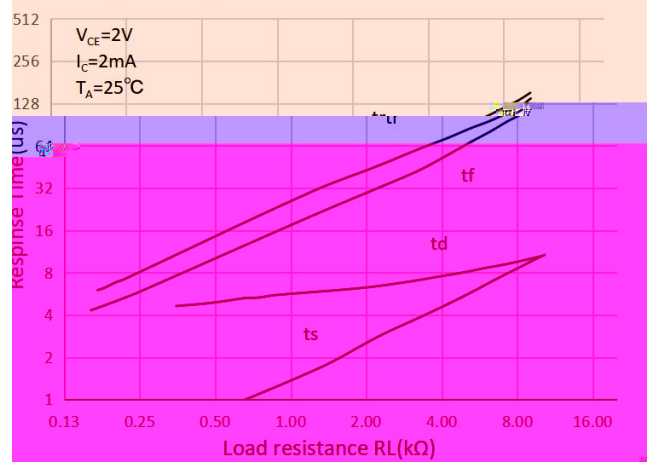
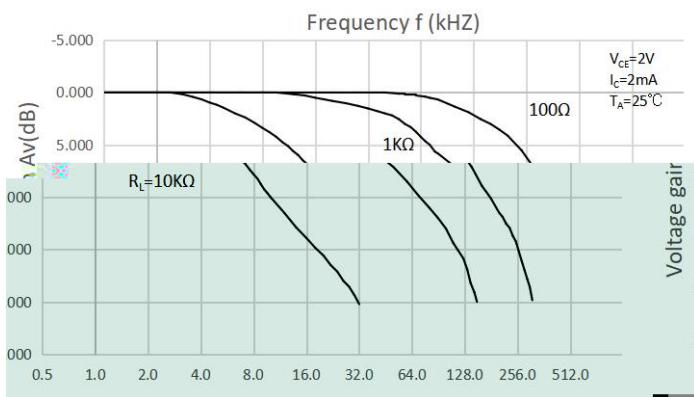
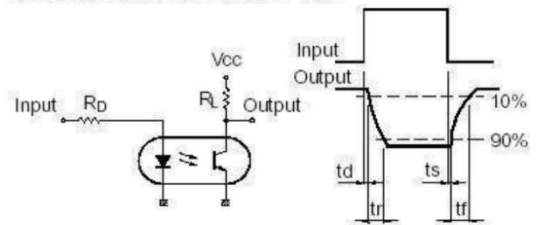


Fig.11 Frequency Response



Test Circuit for Response Time



Test Circuit for Frequency Response

