BRIGHT LED ELECTRONICS CORP.

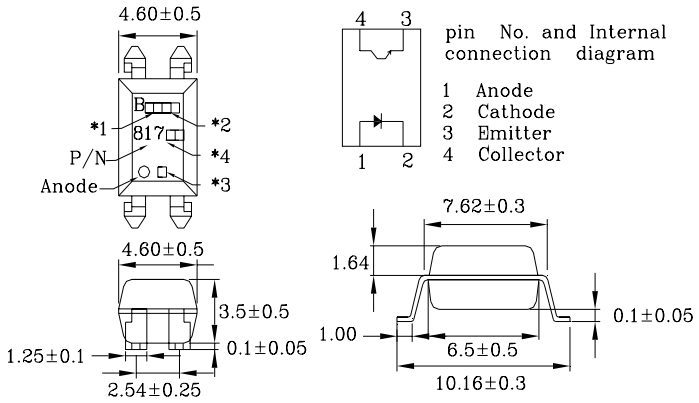
SINCE 1981

BPC-817S

● Features:

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. 4μs at V_{CE}=2V, I_C=2mA, R_L=100 Ω)
4. UL approved(NO.E236324)
5. CSA approved(NO.218896)
6. VDE approved(NO.40007240)
7. TUV approved(NO.R50029014)
8. FIMKO approved(NO.F123724)
9. NEMKO approved(NO.P06206181)
10. SEMKO approved(NO.712540)
11. DEMKO approved(NO.19195597)
12. CQC approved (NO.CQC08001026994)
13. This product doesn't contain restriction substance, comply RoHS standard(No Halogen)

● Outline Dimensions



●NOTES：

*1. Year date code.
*2. 2-digit work week.
*3. Factory identification mark shall be marked.
(T：Taiwan, G：China)
*4. Rank shall be or shall not be marked.
5 · All dimensions are in millimeters (inches).
6 · Tolerance is ±0.25mm (0.01") unless otherwise

● Description

1. The BPC-817S series are optically coupled isolators containing a GaAs light emitting diode and an NPN silicon phototransistor
2. The lead pitch is 2.54mm

● Applications:

1. Computer terminals.
2. System appliances, measuring instruments.
3. Registers, copiers, automatic vending machines.
4. Electric home appliances, such as fan heaters, etc.
5. Signal transmission between circuits of different potentials and impedances.

●Absolute Maximum Ratings (Ta=25℃)

Parameter		Symbol	Rating	Unit
INPUT	Forward Current	I_F	50	mA
	Reverse Voltage	V_R	6	V
	Power Dissipation	P	70	mW
OUTPUT	Collector-Emitter Voltage	V_{CEO}	35	V
	Emitter- Collector Voltage	V_{ECO}	6	
	Collector Current	I_C	50	mA
	Collector Power Dissipation	P_C	150	mW
Total Power Dissipation		P_{tot}	200	mW
*1 Isolation Voltage		V_{iso}	5,000	Vrms
Rated impulse isolation voltage		V_{IOTM}	6,000	V
Rated repetitive peak isolation voltage		V_{IORM}	630	V
Operating Temperature		T_{opr}	-30 to + 110	℃
Storage Temperature		T_{stg}	-55 to + 125	
*2 Soldering Temperature		Tsol	260	

*1. AC For minute, R.H. =40~60%
Isolation voltage shall be measured using the following method.
(1) Short between anode and cathode on the primary side and between collector and emitter on the secondary side.
(2) The isolation voltage tester with zero-cross circuit shall be used.
(3) The waveform of applied voltage shall be a sine wave.
*2. For 10 Seconds

●Electro-Optical Characteristics (Ta=25℃)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
INPUT	Forward Voltage	V_F	I_F=20mA	---	1.2	1.4	V
	Reverse Current	I_R	V_R=6V	---	---	10	μA
	Terminal Capacitance	C_t	V=0, f=1KHz	---	30	250	pF
OUTPUT	Collector Dark Current	I_{CEO}	V_{CE}=20V, I_F=0	---	---	100	nA
	Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=0.1mA I_F=0	35	---	---	V
	Emitter-Collector Breakdown Voltage	BV_{ECO}	I_E=10μA I_F=0	6	---	---	V
TRANSFER CHARACTERISTICS	Collector Current	I_c	I_F=5mA V_{CE}=5V	2.5	---	30	mA
	*1 Current Transfer Ratio	CTR		50	---	600	%
	Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_F=20mA I_C= 1mA	---	0.1	0.2	V
	Isolation Resistance	R_{iso}	DC500V 40~60%R.H.	5×10^{10}	1×10^{11}	---	Ω
	Floating Capacitance	C_f	V=0, f=1MHz	---	0.6	1	pF
	Cut-Off Frequency	f_c	V_{CE}=5V, I_C=2mA R_L=100Ω, -3dB	---	80	---	kHz
	Response Time(Rise)	t_r	V_{CE}=2V, I_C=2mA R_L=100Ω	---	4	18	μs
	Response Time(Fall)	t_f		---	3	18	μs

*1 CTR= I_C / I_F × 100%

●RANK TABLE OF CURRENT TRANSFER RATIO(CTR)

RANK MARK	Min. (%)	Max. (%)
L	50	100
A	80	160
B	130	260
C	200	400
D	300	600
L or A or B or C or D	50	600

Notes:

1. Conditions: I_F=5mA, V_{CE}=5V, Ta=25℃.

●CHARACTERISTICS CURVES

Fig.1 Forword Current vs. Ambient Temperatute

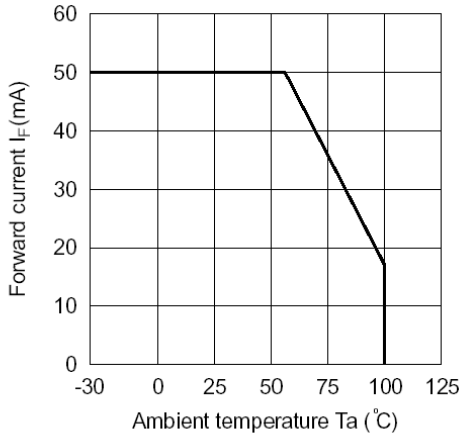


Fig.2 Collector Power Dissiption vs. Ambient Temperature

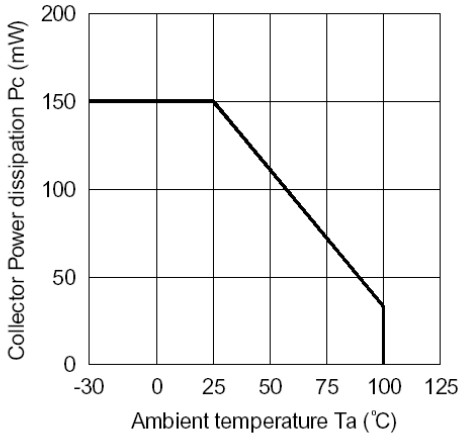


Fig.3 Collector-emitter Saturation Voltage vs. Forward Current

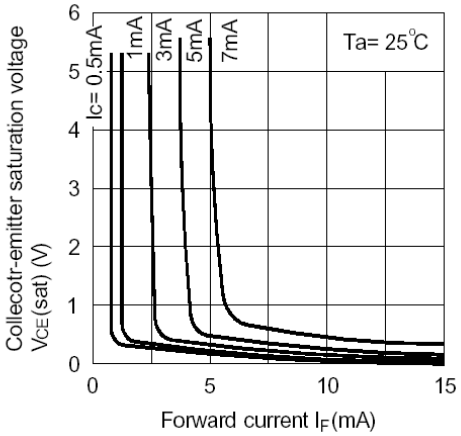


Fig.4 Forward Current vs. Forward Voltage

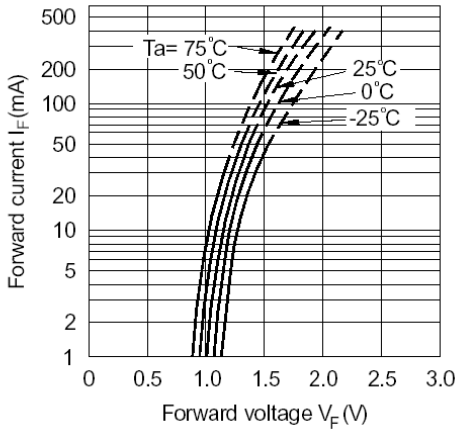


Fig.5 Current Transfer Ratio vs. Forward Current

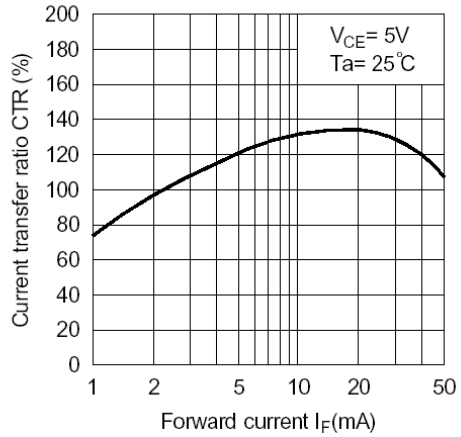
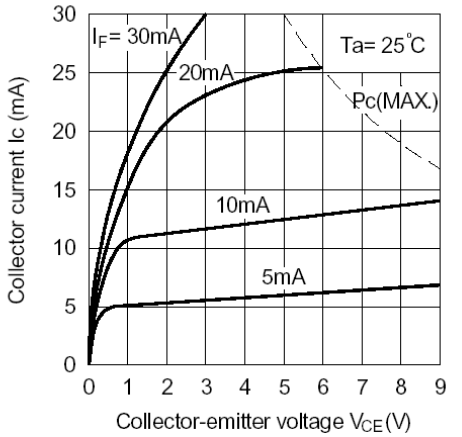


Fig.6 Collector Current vs. Collector-emitter Voltage



●Characteristics Curves

Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

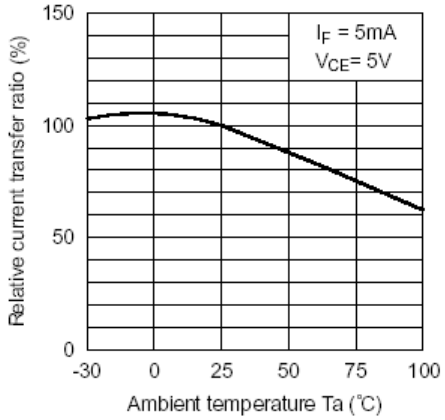


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

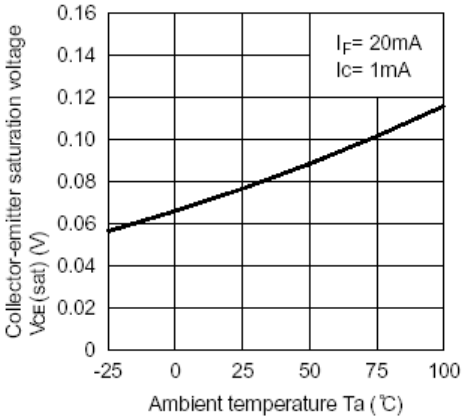


Fig.9 Collector Dark Current vs. Ambient Temperature

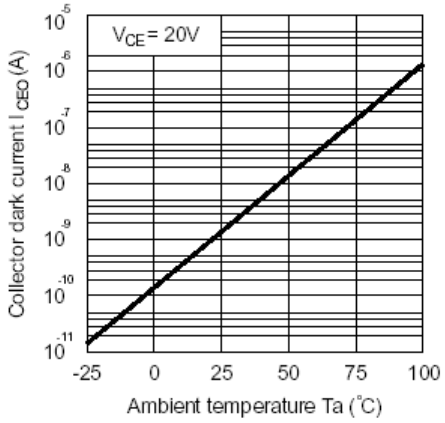


Fig.10 Response Time vs. Load Resistance

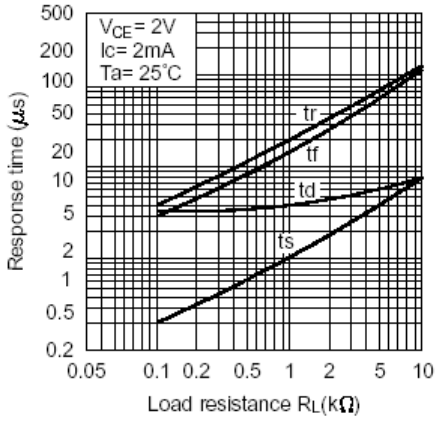
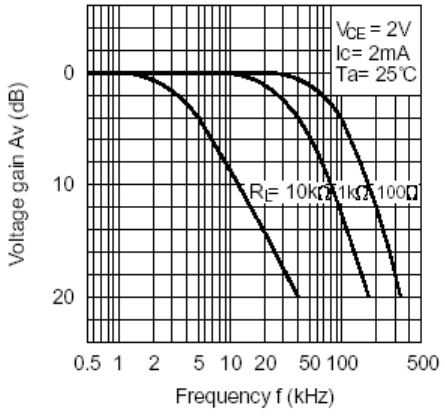
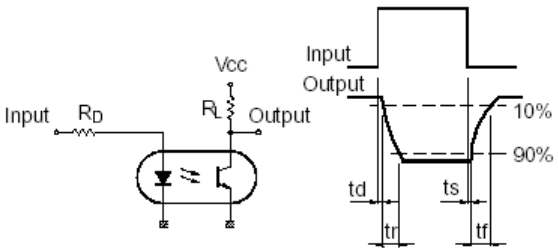


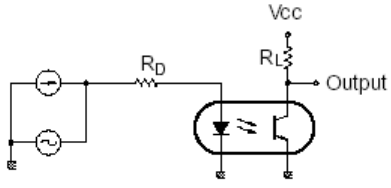
Fig.11 Frequency Response



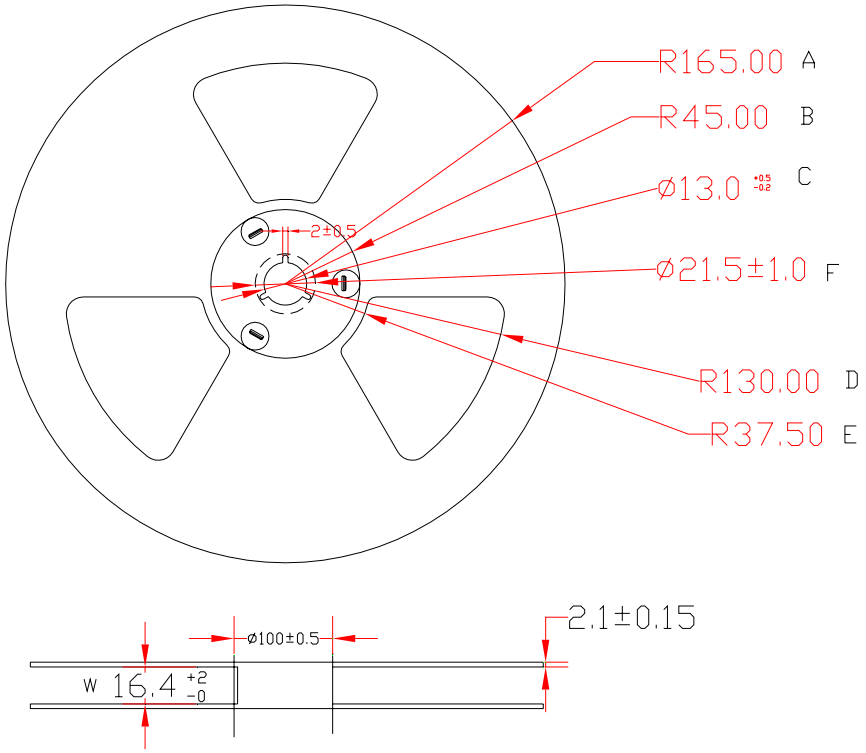
Test Circuit for Response Time



Test Circuit for Frequency Response



● Packaging Box Dimensions (Units: mm)



● Packaging Tube Dimensions