Elektronische Bauelemente

BL817M-C

0.05A, 35V, 150mW

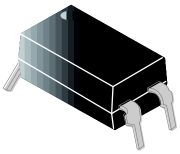
High Density Mounting Type Photocoupler

RoHS Compliant Product
A suffix of “-C” specifies halogen & lead-free

DESCRIPTION

The BL817M-C Series of devices each consist of an Infrared Emitting Diode, optically coupled to a phototransistor detector. They are packaged in a 4-pin DIP package. and available in Wide-lead spacing and SMD option.

DIP4M



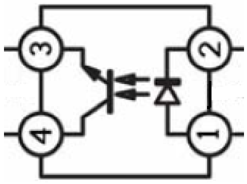
FEATURES

- Current Transfer Ratio
  (CTR: 50%~600% @I_F=5mA, V_{CE}=5V)
- High Isolation Voltage Between Input and Output
  (V_{iso}=5000V rms)
- Creepage Distance>7.00mm
- UL/CUL Approved

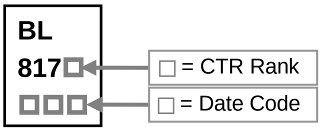
APPLICATIONS

- Programmable Controllers
- System Appliances, Measuring Instruments
- Telecommunication Equipments
- Home Appliances, Such as Fan Heaters, etc.
- Signal Transmission Between Circuits of Different Potentials and Impedances

Top View



MARKING



ORDER INFORMATION

Part Number	Type
BL817M-□-C	Lead (Pb)-free and Halogen-free

***□=Rank**

RANK TABLE OF CURRENT TRANSFER RATIO (CTR)

Product-Rank	BL817M-A-C	BL817M-B-C	BL817M-C-C	BL817M-D-C	BL817M-E-C
Range(%)	80~160	130~260	200~400	300~600	50~600

ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

Parameter		Symbol	Ratings	Unit
Input	Forward Current	I_F	60	mA
	Peak Forward Current [1]	I_{FM}	1	A
	Reverse Voltage	V_R	6	V
	Power Dissipation	P_D	100	mW
Output	Collector-Emitter Voltage	V_{CEO}	35	V
	Emitter-Collector Voltage	V_{ECO}	7	V
	Collector Current	I_C	50	mA
	Collector Power Dissipation	P_C	150	mW

ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Total Power Dissipation	P_{tot}	200	mW
Isolation Voltage [2]	V_{iso}	5000	Vrms
Rated Impulse Isolation Voltage	V_{IOTM}	5000	V
Rated Repetitive Peak Isolation Voltage	V_{IORM}	890	V
Operating Temperature	T_{opr}	-55~110	°C
Storage Temperature	T_{stg}	-55~125	
Soldering Temperature	T_{sol}	260	

Notes:
1. 100μs pulse, 100Hz frequency.
2. AC for 1 minute, R.H.=40~60% R.H. In this test, pins 1, 2 are shorted together, and pins 3, 4 are shorted together.

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Input	Forward Voltage	V_F	-	1.2	1.4	V	I_F=10mA
	Reverse Current	I_R	-	-	10	μA	V_R=6V
	Input Capacitance	C_t	-	10	-	pF	V=0, f=1KHz
Output	Collector-Emitter Dark Current	I_{CEO}	-	-	100	nA	V_{CE}=20V, I_F=0
	Collector-Emitter Breakdown Voltage	BV_{CEO}	35	-	-	V	I_C=0.1mA, I_F=0
	Emitter-Collector Breakdown Voltage	BV_{ECO}	7	-	-	V	I_E=10μA, I_F=0
Transfer Characteristics	Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	-	0.1	0.2	V	I_F=20mA, I_C=1mA
	Isolation Resistance	R_{iso}	$5x10^{10}$	-	-	Ω	V_{IO}=500V_{DC} 40~60%R.H.
	Floating Capacitance	C_f	-	0.6	-	pF	V=0, f=1MHz
	Cut-off Frequency	f_C	-	80	-	kHz	V_{CE}=2V, I_C=2mA, R_L=100Ω, -3dB
	Rise Time	T_r	-	3	-	μs	V_{CE}=2V, I_C=2mA, R_L=100Ω
	Fall Time	T_f	-	4	-		

CHARACTERISTIC CURVE

Fig.1 Forward Current vs. Ambient Temperature

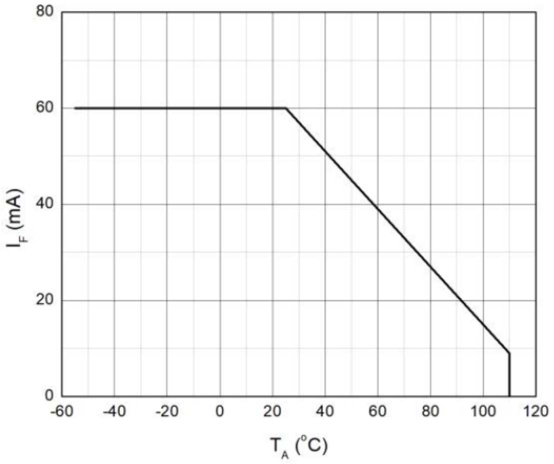


Fig. 2 Collector Power Dissipation

Vs.Ambient Temperature

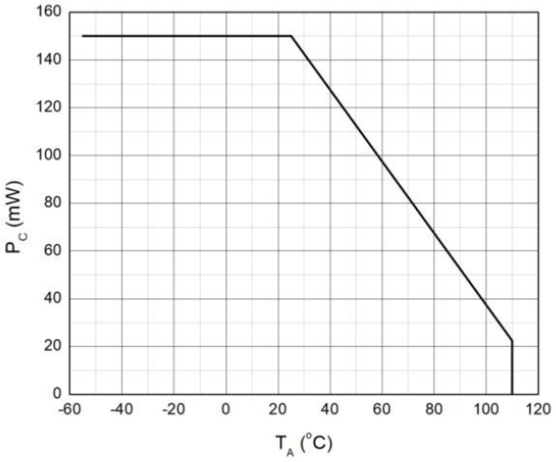


Fig.3 Forward Current vs.Forward Voltage

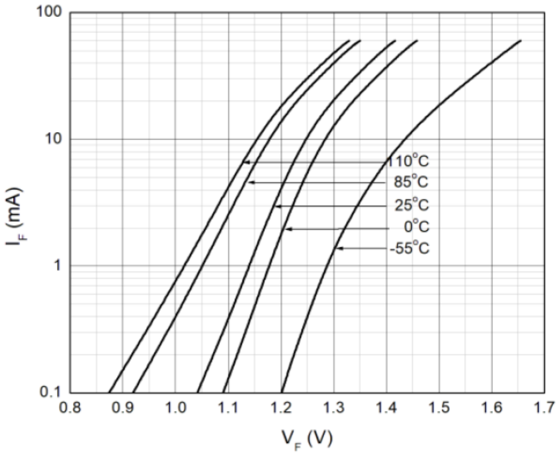


Fig. 4 Collector Dark Current vs.Ambient Temperature

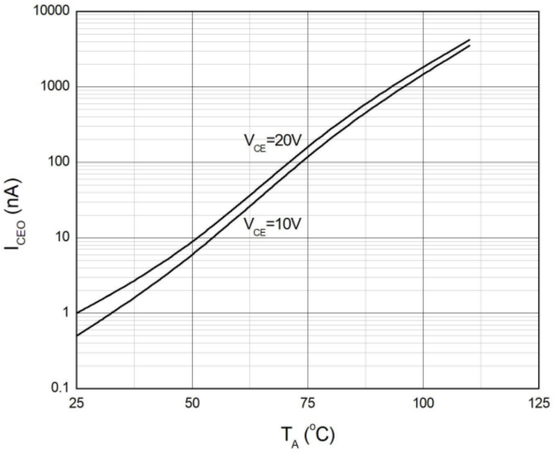


Fig.5 Collector Current vs.Collector-emitter Voltage

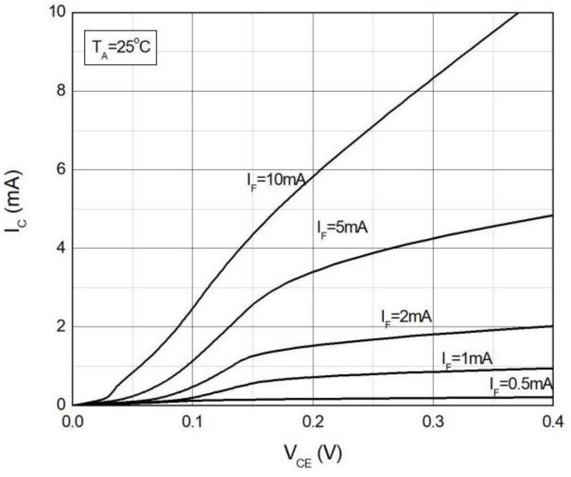
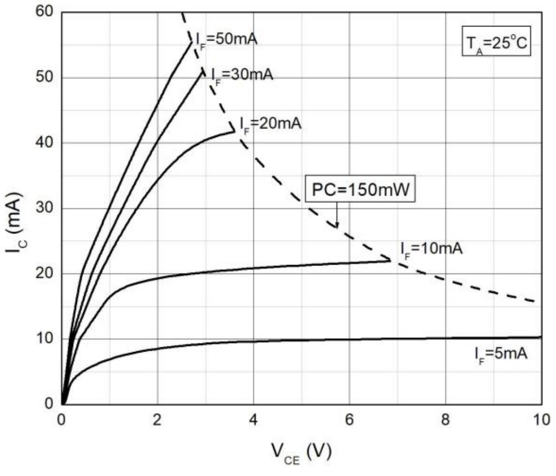


Fig.6 Collector Current vs.Collector-emitter Voltage



CHARACTERISTIC CURVE

Fig.7 Normalized Current Transfer Ratio vs. Forward Current

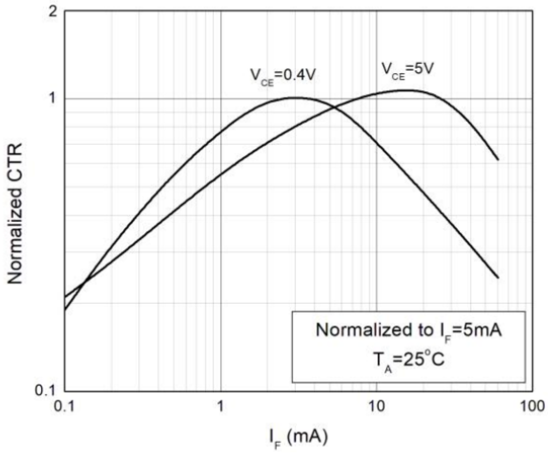


Fig.8 Normalized Current Transfer Ratio vs. Ambient Temperature

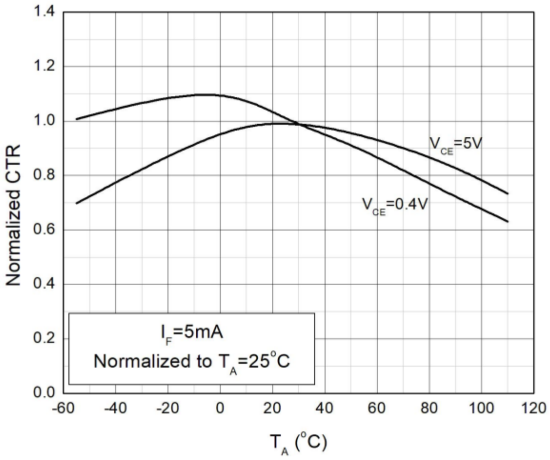


Fig.9 Collector-emitter Saturation Voltage vs. Ambient Temperature

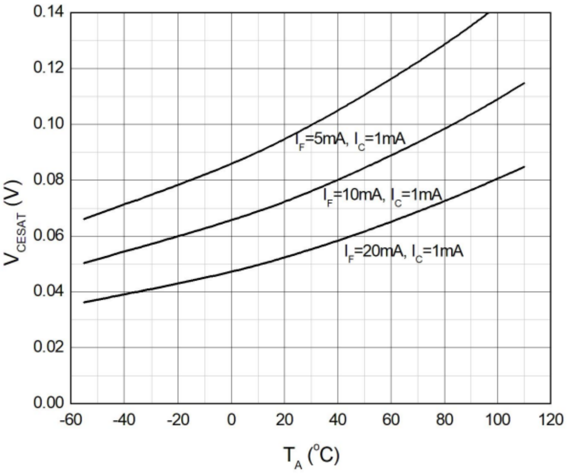


Fig.10 switching Time vs. Load Resistance

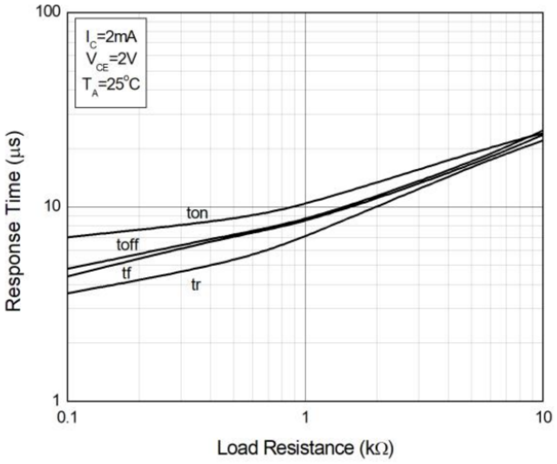


Fig.11 Frequency Response

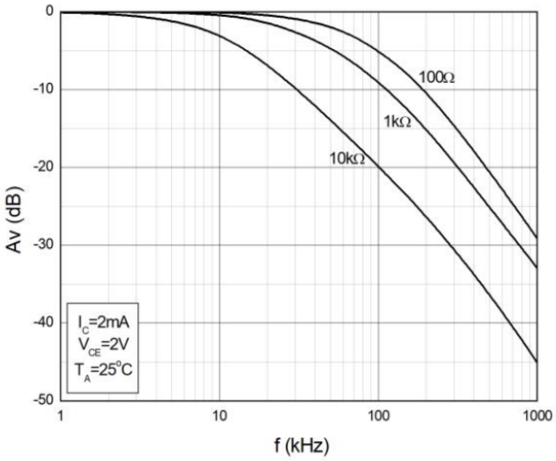
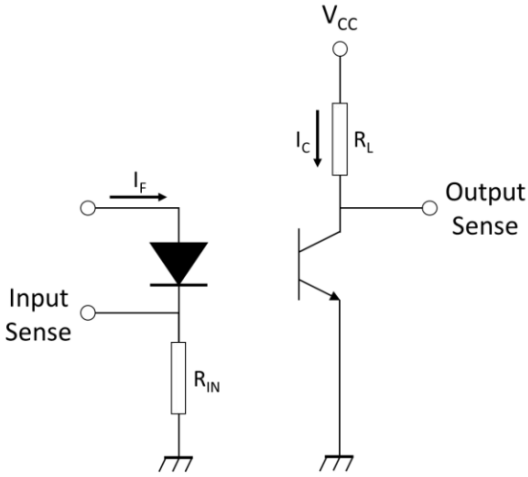
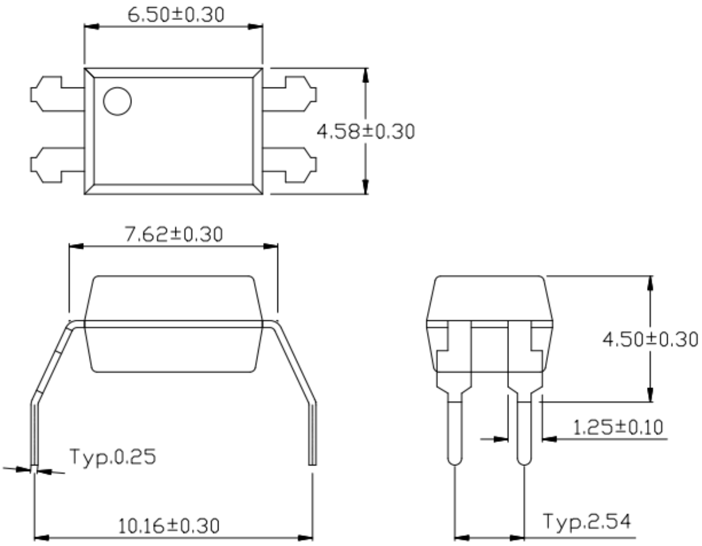


Fig.12 Test Circuits of Response Time



PACKAGE OUTLINE DIMENSIONS

DIP4M



MOUNTING PAD LAYOUT

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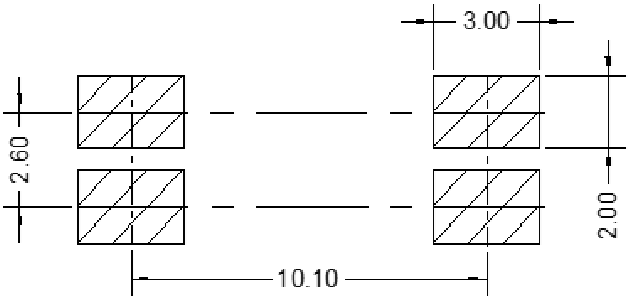

*Dimensions in millimeters