

Features

- Current transfer ratio
(CTR: 50~600% at $I_F = 5\text{mA}$, $V_{CE} = 5\text{V}$)
- High isolation voltage between input and output ($V_{iso} = 5000\text{V rms}$)

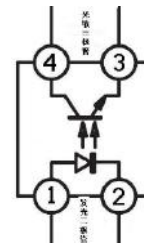
HF

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

Mechanical Data

- Case: DIP-4L, SOP-4L
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL817	DIP-4L	100 pcs / Tube	BL817
BL817M	DIP-4L(leads with 0.4" spacing)	100 pcs / Tube	BL817
BL817S	SOP-4L	2000 pcs / Tape & Reel	BL817

Maximum Ratings (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter		Symbol	Value	Unit
Input	Forward Current	I_F	50	mA
	Peak Forward Current ^{*1}	I_{FM}	1	A
	Reverse Voltage	V_R	6	V
	Power Dissipation	P_D	70	mW
Output	Collector Power Dissipation	P_C	150	mW
	Collector Current	I_C	50	mA
	Collector-Emitter Voltage	V_{CEO}	80	V
	Emitter-Collector Voltage	V_{ECO}	6	V

Thermal Characteristics

Parameter	Symbol	Value	Unit
Total Power Dissipation	P_{TOT}	200	mW
Isolation Voltage ^{*2}	V_{ISO}	5000	V _{rms}
Rated Impulse Isolation Voltage	V_{IOTM}	6000	V
Rated Repetitive Peak Isolation Voltage	V_{IORM}	630	V
Thermal Resistance Junction-to-Air	$R_{\theta JA}$	430	°C/W
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	350	°C/W
Thermal Resistance Junction-to-Lead	$R_{\theta JL}$	368	°C/W
Operating Temperature	T_{OPR}	-55 ~ +110	°C
Storage Temperature Range	T_{STG}	-55 ~ +125	°C
Soldering Temperature ^{*3}	T_{SOL}	260	°C

Notes:

1. Pulse width $\leq 1\mu s$, Duty ratio: 0.001
2. 40 to 60% RH, AC for 1 minute
3. For 10 seconds

Electrical Characteristics (@ $T_A = 25^\circ C$ unless otherwise specified)

Parameter		Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage	V_F	$I_F = 20mA$	-	1.2	1.4	V
	Peak Forward Voltage	V_{FM}	$I_{FM} = 0.5A$	-	-	3.0	V
	Reverse Current	I_R	$V_R = 4V$	-	-	10	μA
	Input Capacitance	C_{in}	$V_R = 0V, f = 1kHz$	-	30	250	pF
Output	Collector-Emitter Dark Current	I_{CEO}	$V_{CE} = 20V, I_F = 0$	-	-	100	nA
	Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = 0.1mA, I_F = 0$	80	-	-	V
	Emitter-Collector Breakdown Voltage	BV_{ECO}	$I_E = 10\mu A, I_F = 0$	6	-	-	V
Transfer Characteristics	Collector Current	I_C	$I_F = 5mA, V_{CE} = 5V$	2.5	-	30	mA
	Current Transfer Ratio	CTR	$I_F = 5mA, V_{CE} = 5V$	50	-	600	%
	Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_F = 20mA, I_C = 1mA$	-	0.1	0.2	V
	Isolation Resistance	R_{IO}	$V_{IO} = 500Vdc$ 40~60% R.H.	5×10^{10}	1×10^{11}	-	Ω
	Floating Capacitance	C_{IO}	$V_{IO} = 0, f = 1MHz$	-	0.6	1.0	pF
	Cut-off frequency	f_c	$V_{CE} = 5V, I_C = 2mA$ $RL = 100\Omega, -3dB$	-	80	-	kHz
	Turn On Time	T_{on}	$V_{CE} = 2V, RL = 100\Omega$	-	4	18	μs
	Turn Off Time	T_{off}	$I_C = 2mA$	-	3	18	

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

Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

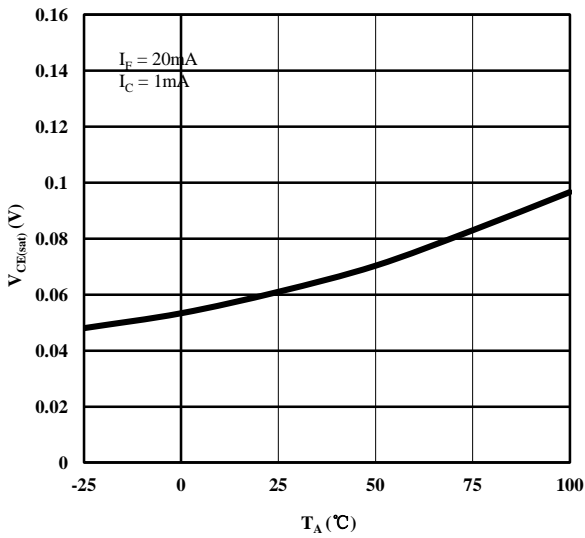


Fig. 1 Collector-Emitter Saturation Voltage vs. Ambient Temperature

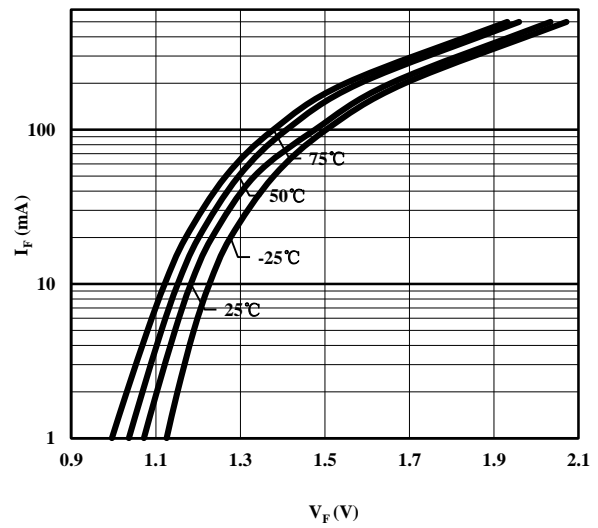


Fig. 2 Forward Current vs. Forward Voltage

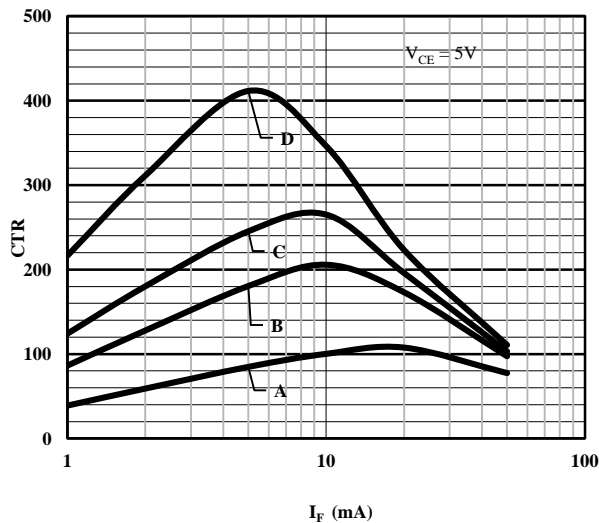
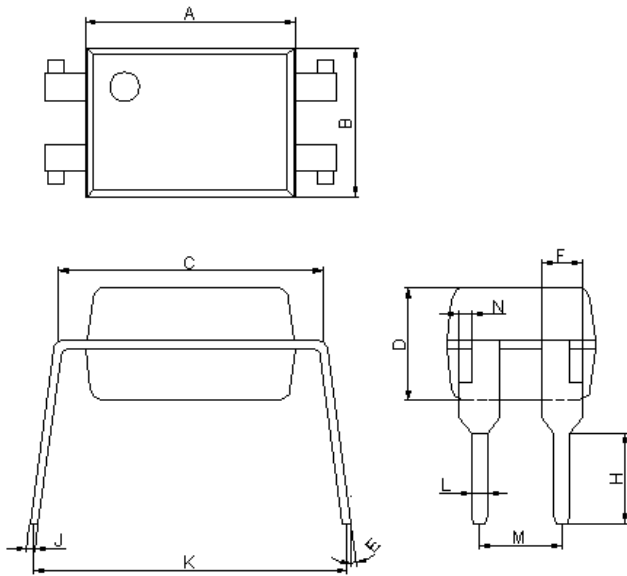


Fig. 3 Current Transfer Ratio vs. Forward Current

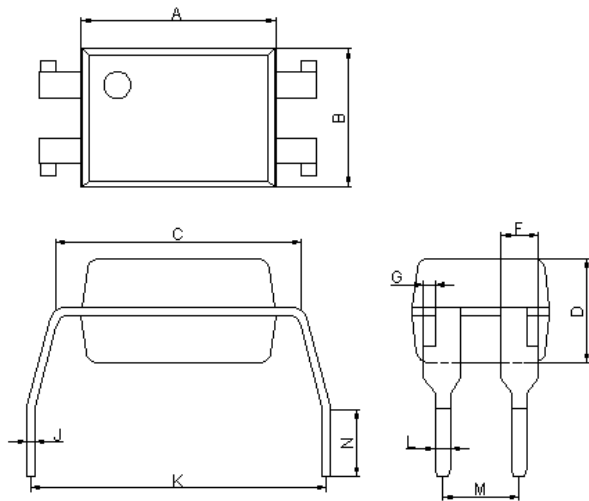
Package Outline Dimensions (unit: mm)

BL817



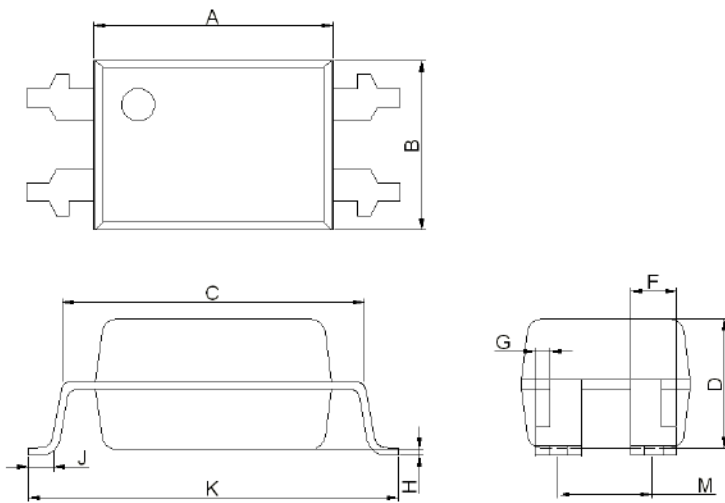
Dim	Min	Max
A	6.40	6.60
B	4.50	4.70
C	7.90	8.30
D	3.28	3.68
E	2°	8°
F	1.15	1.35
H	2.70	2.90
J	0.20	0.30
K	8.86	9.31
L	0.40	0.60
M	2.44	2.64
N	0.30	0.50

BL817M



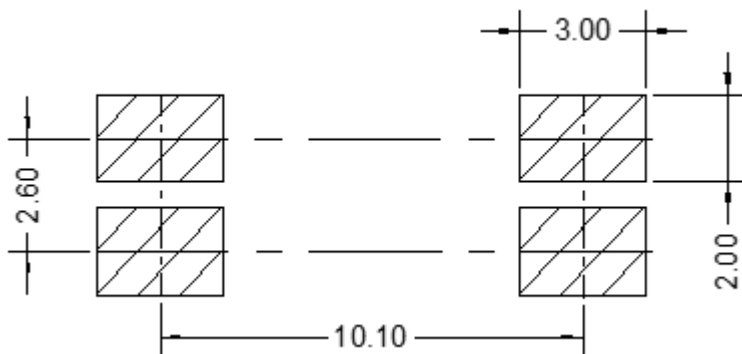
Dim	Min	Max
A	6.40	6.60
B	4.50	4.70
C	7.90	8.30
D	3.28	3.68
F	1.15	1.35
G	0.30	0.50
J	0.20	0.30
K	9.86	10.46
L	0.40	0.60
M	2.44	2.64
N	2.40	2.90

BL817S



Dim	Min	Max
A	6.40	6.60
B	4.50	4.70
C	7.90	8.30
D	3.28	3.68
F	1.15	1.35
G	0.30	0.50
H	0.00	0.20
J	0.9	1.2
K	9.80	10.30
M	2.49	2.69

SOLDERING FOOTPRINT (unit: mm)



IMPORTANT NOTICE

Galaxy Microelectronics (GME) reserves the right to make changes without further notice to any product herein to make corrections, modifications, improvements, or other changes. GME does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others.