

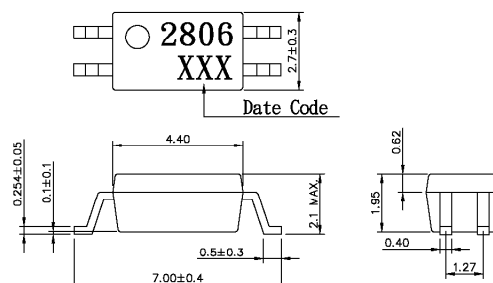
## Features

1. High isolation voltage (BV=2500 Vrms)
2. Small and thin package (4pin SOP , Pin pitch 1.27 mm)
3. AC input response
4. High current transfer ratio  
(CTR=2000% TYP. @  $I_F=1\text{mA}$ ,  $V_{CE}=2\text{V}$ )

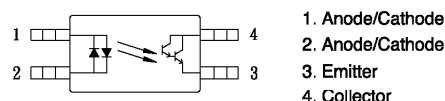
## Applications

1. Programmable logic controllers
2. Measuring instruments
3. Hybrid IC

## Outside Dimension:Unit (mm)

TOLERANCE :  $\pm 0.2\text{mm}$ 

## Schematic:Top View



## Absolute Maximum Ratings

(Ta=25°C)

|        | Parameter                  | Symbol          | Rating      | Unit    |
|--------|----------------------------|-----------------|-------------|---------|
| Input  | Forward current (DC)       | $I_F$           | $\pm 50$    | mA      |
|        | Power dissipation derating | $P_D/\text{°C}$ | 0.6         | mW / °C |
|        | Power dissipation          | $P_D$           | 60          | mW      |
|        | Peak forward current *1    | $I_{FP}$        | $\pm 1$     | A       |
| Output | Collector-emitter voltage  | $V_{CEO}$       | 40          | V       |
|        | Emitter-collector voltage  | $V_{ECO}$       | 6           | V       |
|        | Collector current          | $I_C$           | 90          | mA      |
|        | Power dissipation derating | $P_C/\text{°C}$ | 1.2         | mW / °C |
|        | Total power dissipation    | $P_C$           | 120         | mW      |
|        | Isolation voltage *2       | Viso            | 2500        | Vrms    |
|        | Operating temperature      | Topr            | -30 to +100 | °C      |
|        | Storage temperature        | Tsig            | -55 to +150 | °C      |

\*1 PW=100  $\mu\text{s}$ , duty cycle=1%

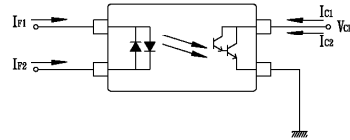
\*2 AC voltage for 1 minute at TA=25°C, RH=60% between input and output

## Electro-optical Characteristics

(Ta=25°C)

|                          | Parameter                              | Symbol               | Conditions                                                  | MIN.               | TYP.      | MAX. | Unit          |
|--------------------------|----------------------------------------|----------------------|-------------------------------------------------------------|--------------------|-----------|------|---------------|
| Input                    | Forward voltage                        | $V_F$                | $I_F = \pm 5\text{mA}$                                      | —                  | 1.1       | 1.4  | V             |
|                          | Terminal capacitance                   | C t                  | V=0V, f=1.0MHz                                              | —                  | 60        | —    | pF            |
| Output                   | Collector-emitter dark current         | $I_{CEO}$            | $V_{CE}=40\text{V}$ , $I_F=0\text{mA}$                      | —                  | —         | 400  | nA            |
| Transfer characteristics | Current transfer ratio ( $I_C / I_F$ ) | CTR                  | $I_F = \pm 1\text{mA}$ , $V_{CE}=2\text{V}$                 | 200                | 2000      | —    | %             |
|                          | CTR ratio *1                           | CTR1/CTR2            | $I_F=1\text{mA}$ , $V_{CE}=2\text{V}$                       | 0.3                | 1.0       | 3.0  | —             |
|                          | Collector saturation voltage           | $V_{CE}(\text{sat})$ | $I_F = \pm 1\text{mA}$ , $I_C=2\text{mA}$                   | —                  | —         | 1.0  | V             |
|                          | Isolation resistance                   | Viso                 | $V_{I-O}=500\text{VDC}$                                     | $5 \times 10^{10}$ | $10^{11}$ | —    | ohm           |
|                          | Floating capacitance                   | Cf                   | V=0V, f=1.0MHZ                                              | —                  | 0.4       | —    | pF            |
|                          | Response time (Rise)*2                 | tr                   | $V_{CE}=5\text{V}$ , $I_C=2\text{mA}$ , $R_L=100\text{ohm}$ | —                  | 200       | —    | $\mu\text{s}$ |
|                          | Response time (Fall)*2                 | tf                   |                                                             | —                  | 200       | —    | $\mu\text{s}$ |

\*1  $CTR1=I_{C1}/I_{F1}$ ,  $CTR1=I_{C2}/I_{F2}$



\*2 Test circuit for switching time

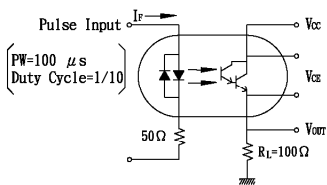


**Fig.1** Forward Current vs. Ambient Temperature

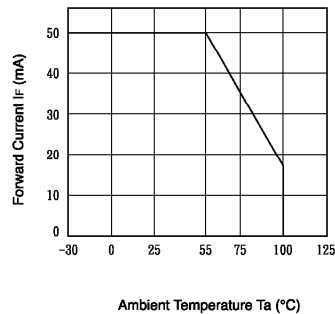


**Fig.2** Collector Power Dissipation vs. Ambient Temperature

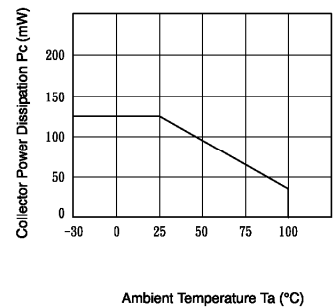


**Fig.3** Peak Forward Current vs. Duty Ratio

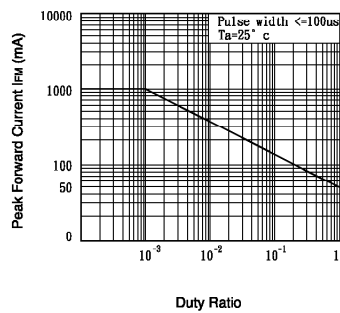


**Fig.4** Forward Current vs. Forward Voltage

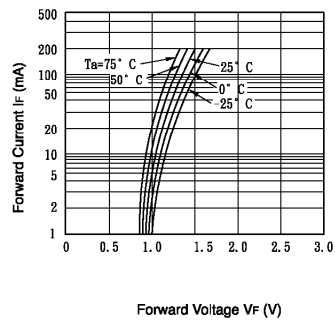


**Fig.5** Current Transfer Ratio vs. Forward Current

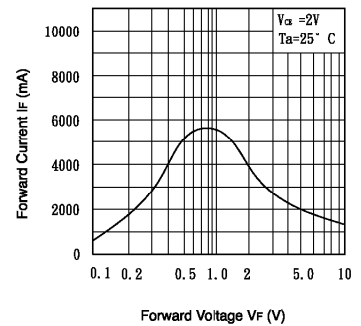


**Fig.6** Collector Current vs. Collector-emitter Voltage

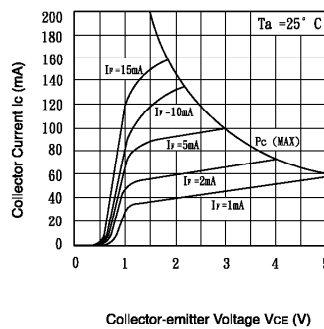


**Fig.7** Relative Current Transfer Ratio vs. Ambient Temperature

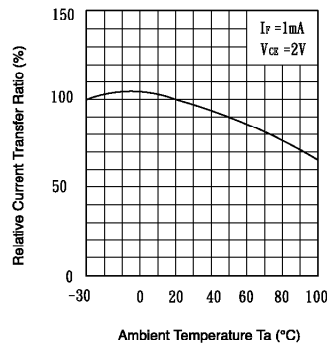


**Fig.8** Collector-emitter Saturation Voltage vs. Ambient Temperature

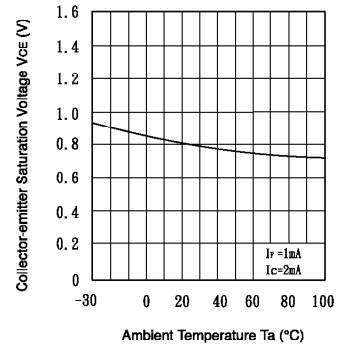


**Fig.9** Collector Dark Current vs. Ambient Temperature

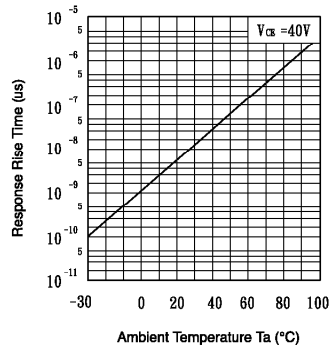


**Fig.10** Response Time vs. Load Resistance

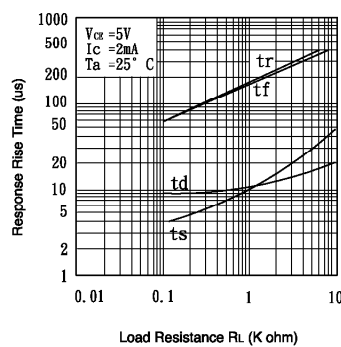


**Fig.11** Collector-emitter Saturation Voltage vs. Forward Current

