

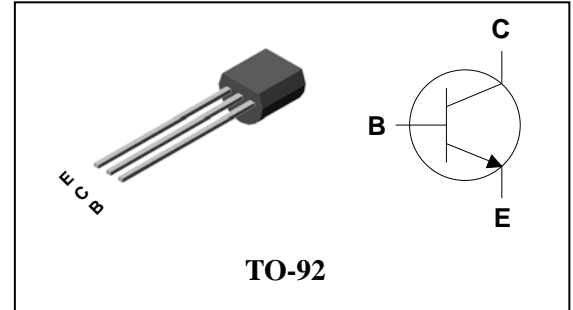
Features

- High Voltage, high speed switching
- $V_{CEO(sus)} = 530V$
- Suitable for Switching Regulator and Motor Control, Electronic Ballast

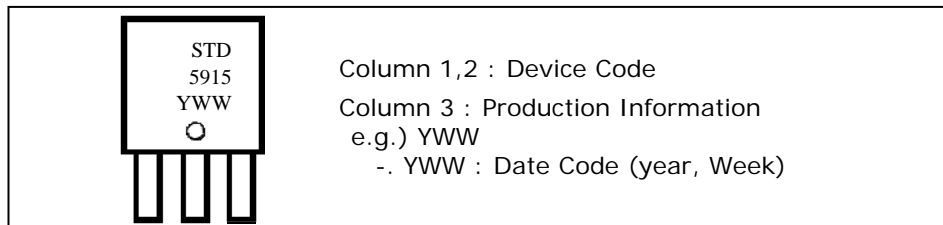
Ordering Information

| Type NO. | Marking | Package Code |
|----------|---------|--------------|
| STD5915 | STD5915 | TO-92 |

PIN Connection



Marking Diagram



Absolute Maximum Ratings

(Ta=25°C)

| Characteristic | Symbol | Ratings | Unit |
|-----------------------------|-----------|-----------|------|
| Collector-base voltage | V_{CBO} | 900 | V |
| Collector-emitter voltage | V_{CEO} | 530 | V |
| Emitter-base voltage | V_{EBO} | 9 | V |
| Collector current (DC) | I_C | 1.5 | A |
| Collector current (Pulse) | I_{CP} | 3 | A |
| Base current (DC) | I_B | 0.75 | A |
| Collector power dissipation | P_C | 1.1 | W |
| Junction temperature | T_J | 150 | °C |
| Storage temperature | T_{stg} | -55 ~ 150 | °C |

Electrical Characteristics

(Ta=25°C)

| Characteristic | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|--------------------------------------|-----------------|---|------|------|------|---------|
| Collector-base breakdown voltage | BV_{CBO} | $I_C=100\mu A, I_E=0$ | 900 | - | - | V |
| Collector-emitter breakdown voltage | BV_{CEO} | $I_C=10mA, I_B=0$ | 530 | - | - | V |
| Emitter-base breakdown voltage | BV_{EBO} | $I_E=100\mu A, I_C=0$ | 9 | - | - | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=900V, I_E=0$ | - | - | 10 | μA |
| Collector cut-off current | I_{CEO} | $V_{CE}=530V, I_B=0$ | - | - | 1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB}=9V, I_C=0$ | - | - | 10 | μA |
| DC current gain | h_{FE}^* | $I_C=0.4A, V_{CE}=10V$ | 20 | - | 40 | - |
| | | $I_C=1A, V_{CE}=10V$ | 6 | - | 40 | - |
| Collector-emitter saturation voltage | $V_{CE(sat)}^*$ | $I_C=0.5A, I_B=0.1A$ | - | - | 0.8 | V |
| | | $I_C=1A, I_B=0.25A$ | - | - | 1 | |
| | | $I_C=1.5A, I_B=0.5A$ | - | - | 2.5 | |
| Base-emitter saturation voltage | $V_{BE(sat)}^*$ | $I_C=0.5A, I_B=0.1A$ | - | - | 1 | V |
| | | $I_C=1A, I_B=0.25A$ | - | - | 1.2 | |
| Transition frequency | f_T | $V_{CB}=10V, I_C=0.1A, f=1MHz$ | 4 | - | - | MHz |
| Output capacitance | C_{ob} | $V_{CB}=10V, I_E=0, f=0.1MHz$ | - | 11 | - | pF |
| Turn on Time | t_{on} | <p>$I_{B1} = -I_{B2} = 200mA$ DUTY CYCLE $\leq 1\%$</p> | - | - | 1.1 | μs |
| Storage Time | t_{stg} | | - | - | 4 | |
| Fall Time | t_f | | - | - | 0.7 | |

* Pulse test: $PW \leq 300 \mu s$, Duty cycle $\leq 2\%$ Pulse

Electrical Characteristic Curves

Fig. 1 $P_C - T_a$

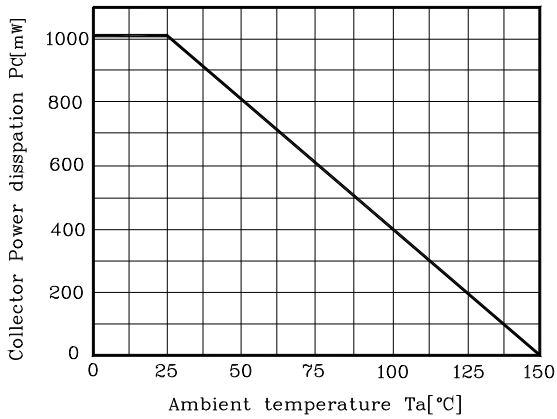


Fig. 2 $I_C - V_{CE}$

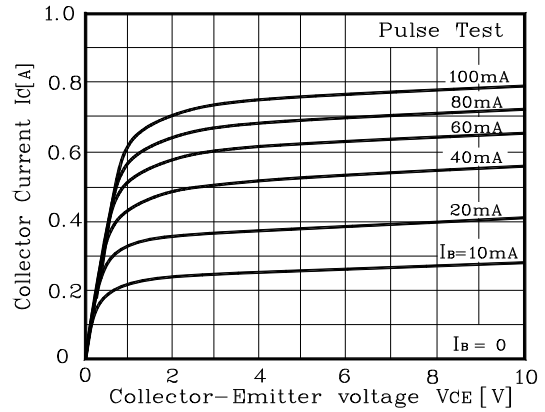


Fig. 3 $V_{CE(sat)} - I_C$

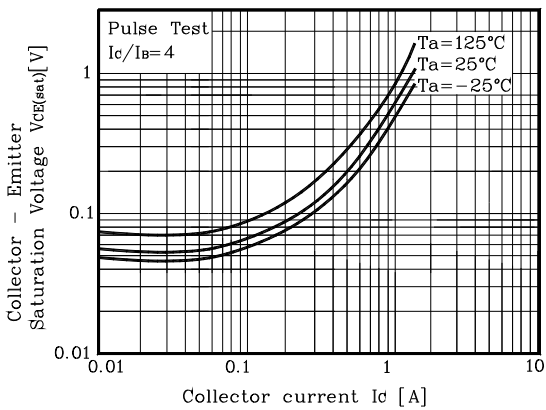


Fig. 4 $V_{BE(sat)} - I_C$

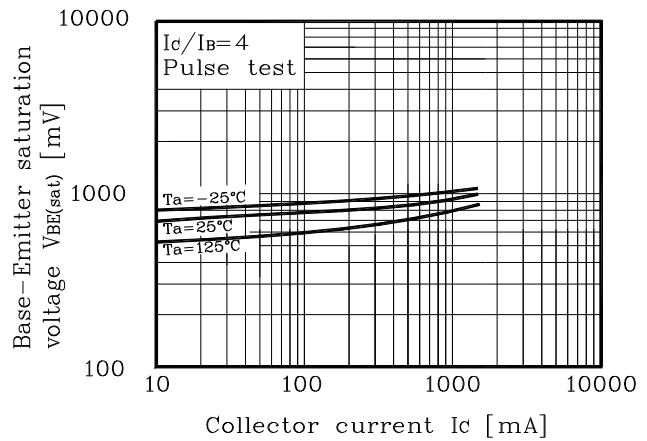


Fig. 5 $h_{FE} - I_C$

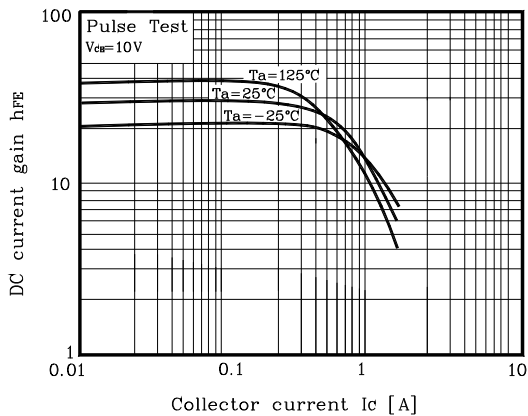
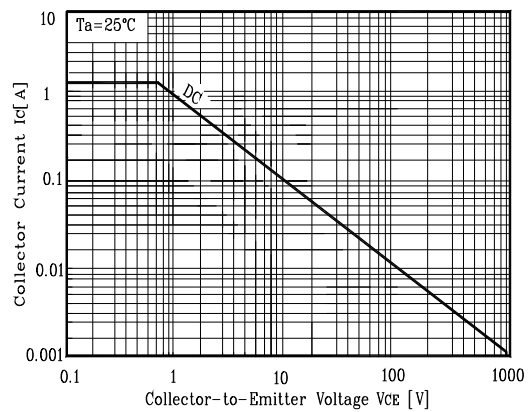


Fig. 6 Safe Operating Area



Electrical Characteristic Curves

Fig. 7 Turn on time

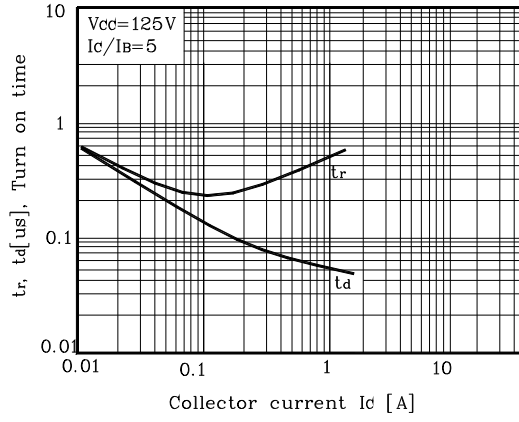
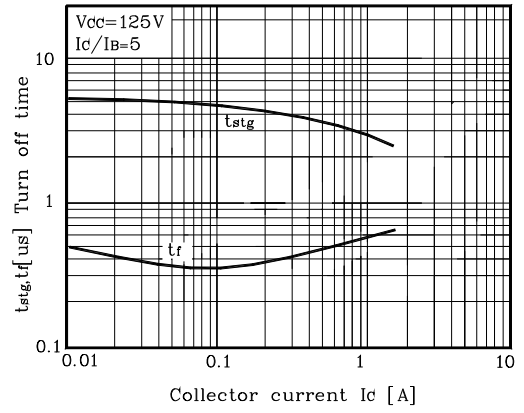
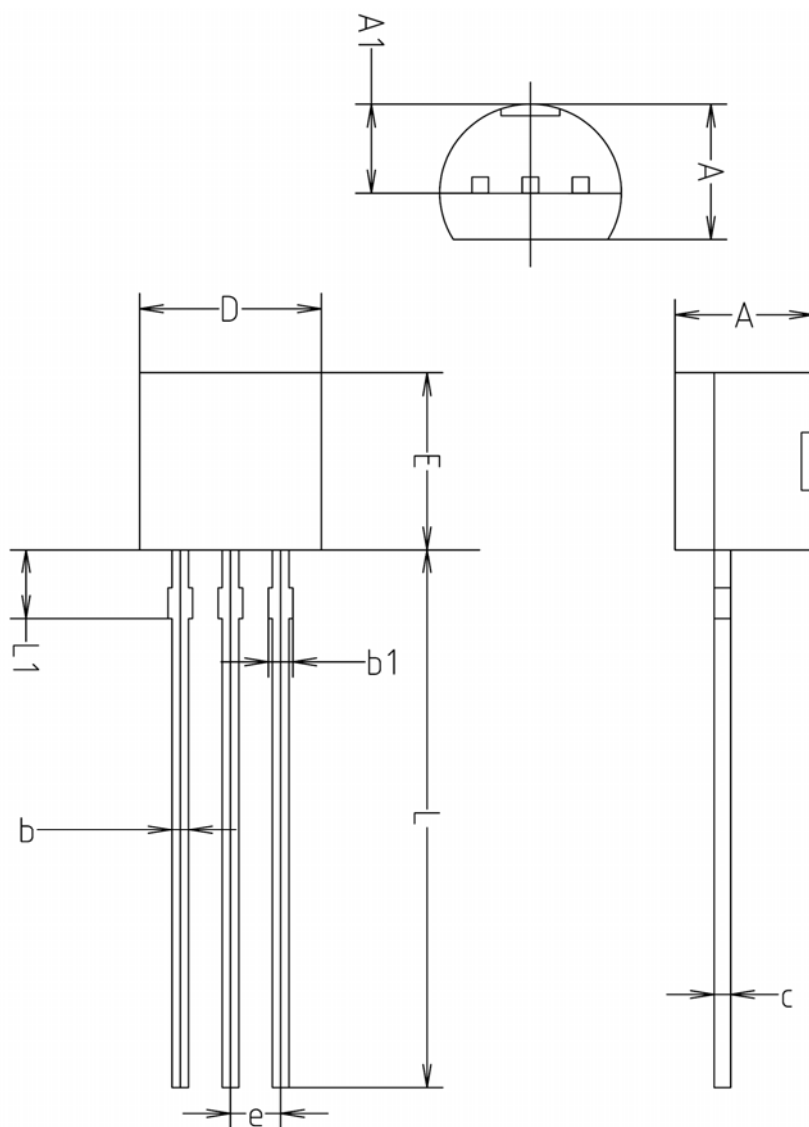


Fig. 8 Turn off time



Outline Dimension (Unit: mm)



| SYMBOL | MILLMETERS(mm) | | |
|--------|----------------|---------|---------|
| | MINIMUM | NOMINAL | MAXIMUM |
| A | 3.40 | 3.50 | 3.66 |
| A1 | 2.46 | 2.51 | 2.59 |
| b | 0.39 | 0.44 | 0.53 |
| b1 | 0.39 | — | 0.63 |
| c | 0.35 | 0.42 | 0.47 |
| D | 4.48 | 4.60 | 4.70 |
| E | 4.48 | 4.60 | 4.70 |
| e | 1.17 | 1.27 | 1.37 |
| L | 13.70 | 14.00 | 14.77 |
| L1 | 1.55 | 1.70 | 2.15 |

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