



2SA1773/2SC4616

High-Voltage Driver Applications

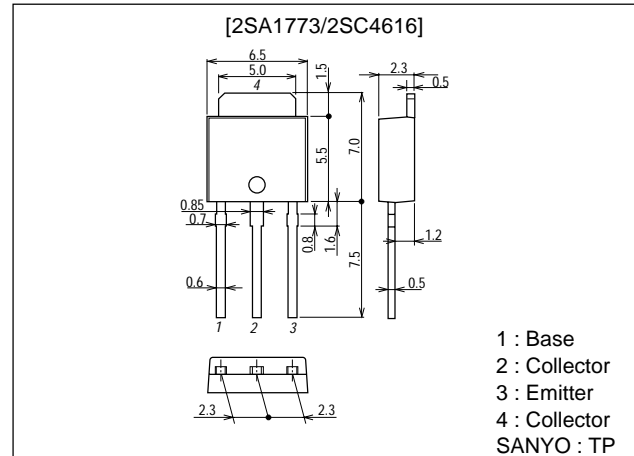
Features

- Large current capacity ($I_C=2A$).
- High breakdown voltage ($V_{CEO} \geq 400V$).

Package Dimensions

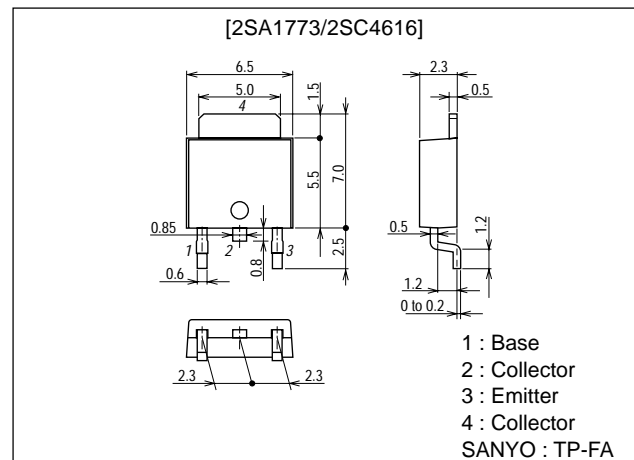
unit:mm

2045B



unit:mm

2044B



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Specifications

Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|------------------------|-------------|------------------|
| Collector-to-Base Voltage | V_{CB0} | | (-)400 | V |
| Collector-to-Emitter Voltage | V_{CEO} | | (-)400 | V |
| Emitter-to-Base Voltage | V_{EBO} | | (-)5 | V |
| Collector Current | I_C | | (-)2 | A |
| Collector Current (Pulse) | I_{CP} | | (-)4 | A |
| Collector Dissipation | P_C | | 1 | W |
| | | $T_c=25^\circ\text{C}$ | 15 | W |
| Junction Temperature | T_j | | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | | -55 to +150 | $^\circ\text{C}$ |

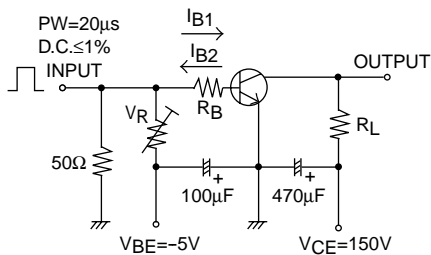
Electrical Characteristics at $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---------------|---|---------|--------|--------|---------------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CBO} | $V_{CB} = (-)300\text{V}, I_E = 0$ | | | (-)1.0 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB} = (-)4\text{V}, I_C = 0$ | | | (-)1.0 | μA |
| DC Current Gain | h_{FE} | $V_{CE} = (-)10\text{V}, I_C = (-)100\text{mA}$ | 40* | | 200* | |
| Gain-Bandwidth Product | f_T | $V_{CE} = (-)10\text{V}, I_C = (-)100\text{mA}$ | | (40)60 | | MHz |
| Output Capacitance | C_{ob} | $V_{CB} = (-)30\text{V}, f = 1\text{MHz}$ | | (25)15 | | pF |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = (-)500\text{mA}, I_B = (-)50\text{mA}$ | | | (-)1.0 | V |
| Base-to-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C = (-)500\text{mA}, I_B = (-)50\text{mA}$ | | | (-)1.0 | V |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C = (-)10\mu\text{A}, I_E = 0$ | (-)400 | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = (-)1\text{mA}, R_{BE} = \infty$ | (-)400 | | | V |
| Emitter-to-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E = (-)10\mu\text{A}, I_C = 0$ | (-)5 | | | V |
| Turn-ON Time | t_{on} | See specified Test Circuit | | (0.12) | | μs |
| | | | | 0.085 | | μs |
| Storage Time | t_{stg} | See specified Test Circuit | | (3.0) | | μs |
| | | | | 4.0 | | μs |
| Fall Time | t_f | See specified Test Circuit | | (0.3) | | ns |
| | | | | 0.6 | | μs |

* : The 2SA1773/2SC4616 are classified by 100mA h_{FE} as follows :

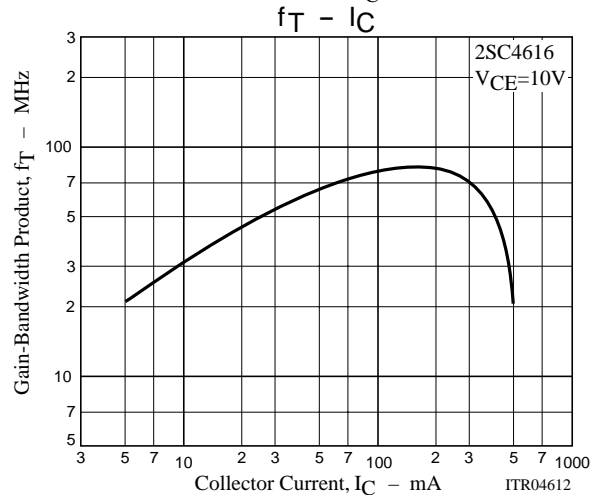
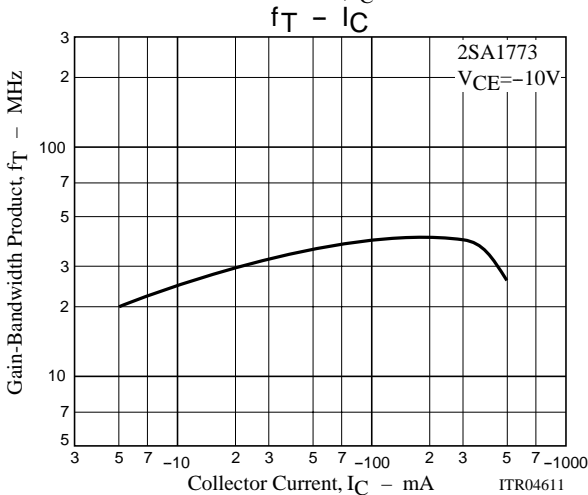
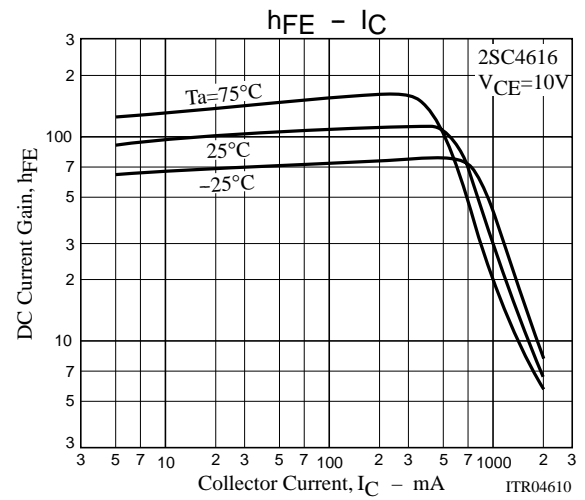
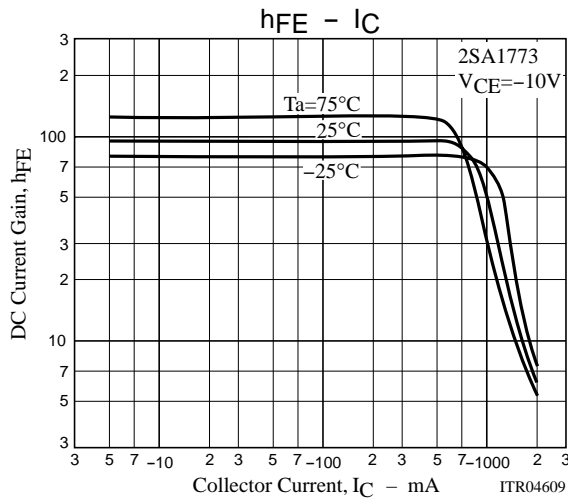
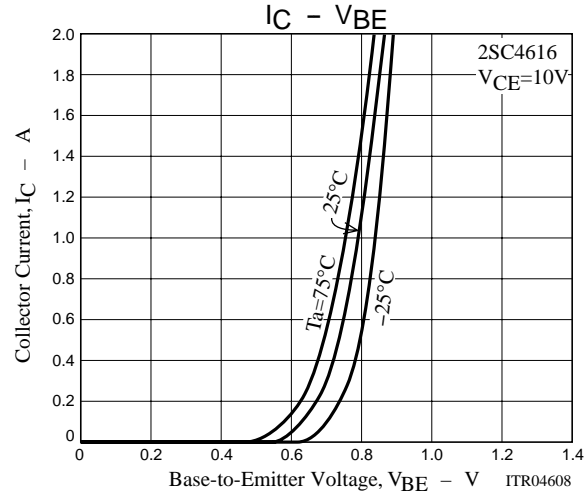
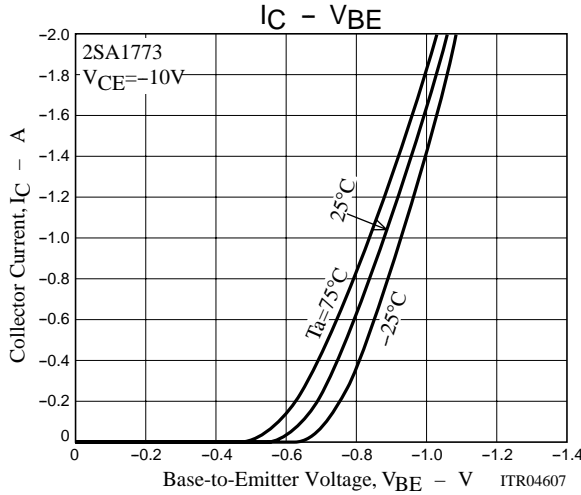
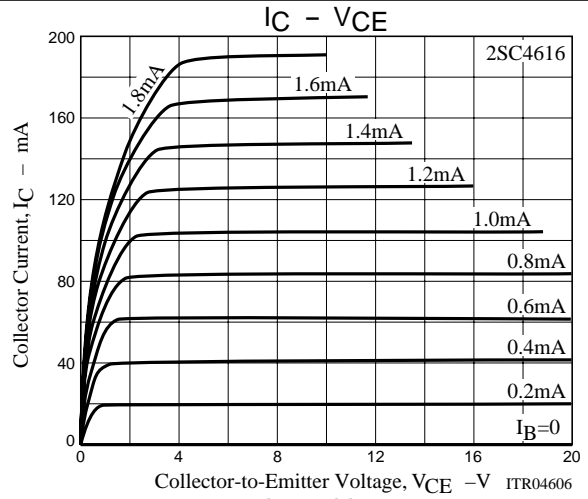
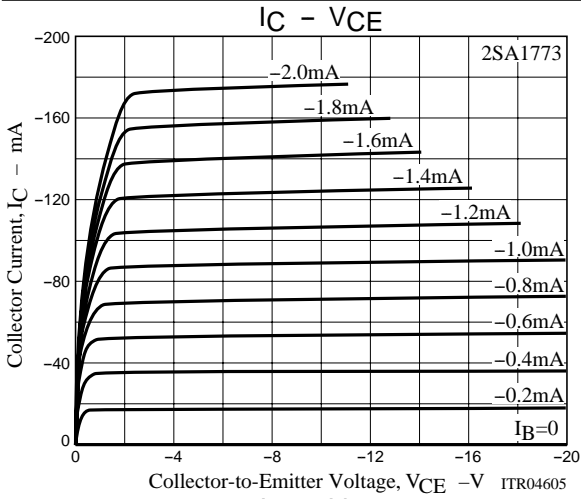
| Rank | C | D | E |
|----------|----------|-----------|------------|
| h_{FE} | 40 to 80 | 60 to 120 | 100 to 200 |

Switching Time Test Circuit

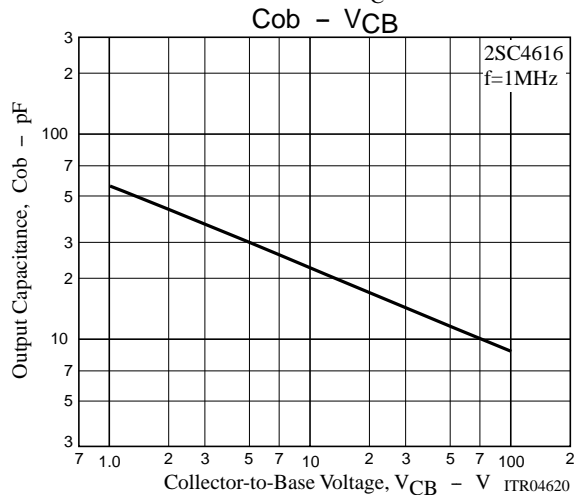
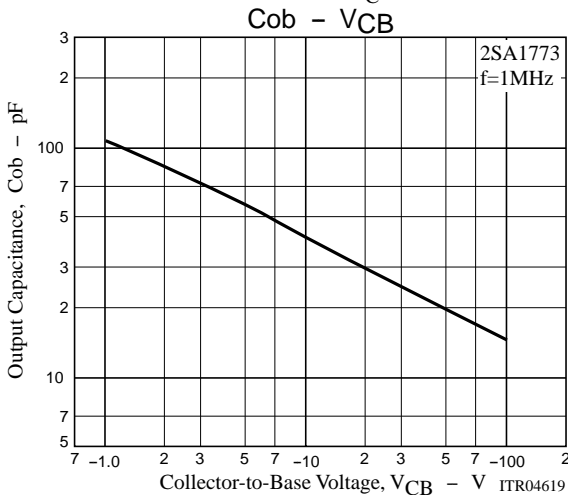
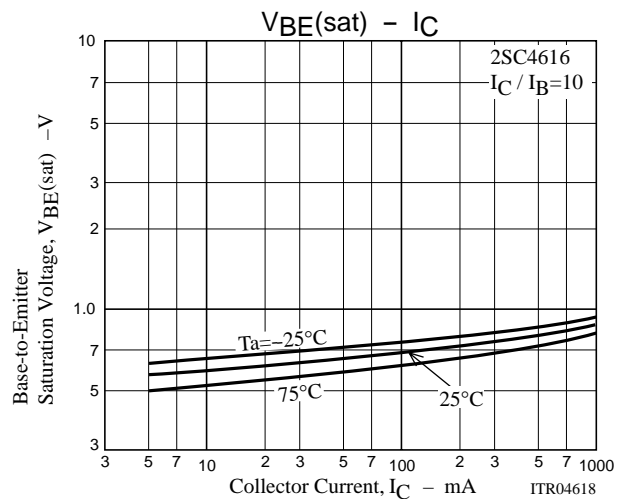
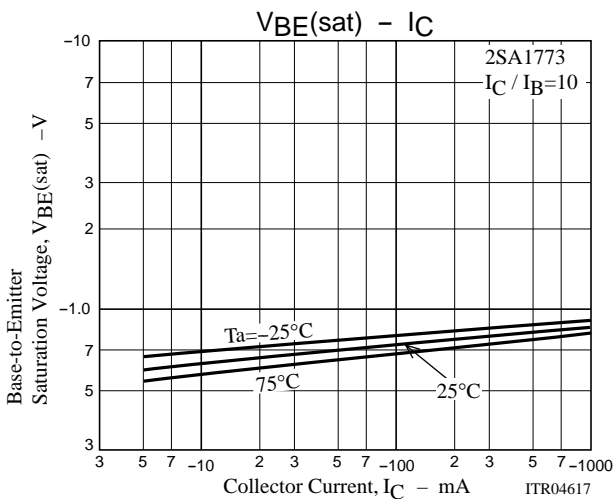
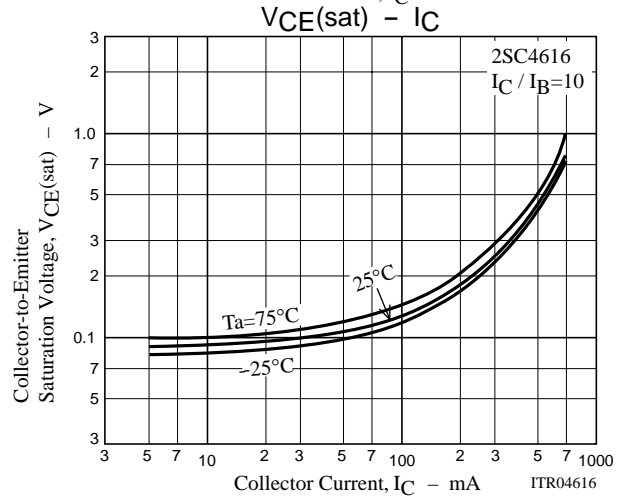
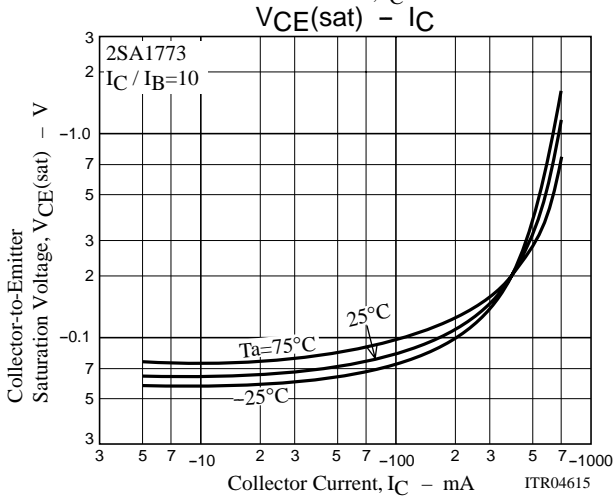
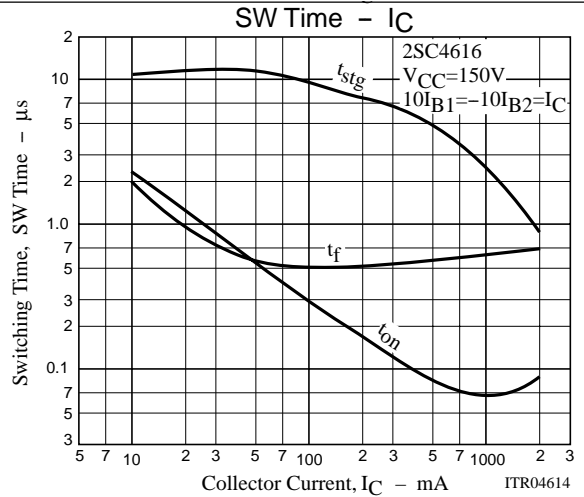
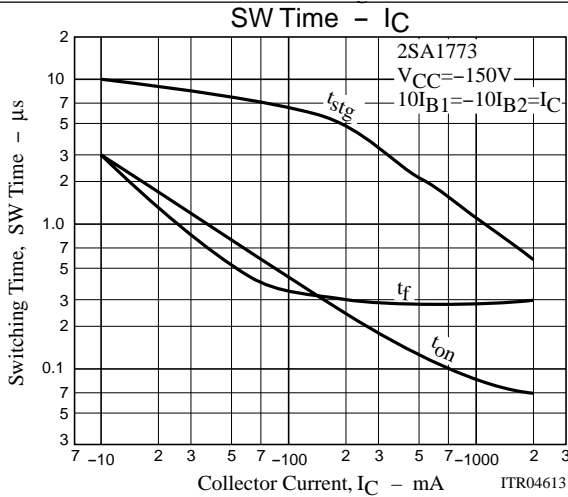


$10I_{B1} = -10I_{B2} = I_C = 500\text{mA}$
 $R_L = 300\Omega, R_B = 20\Omega$, at $I_C = 500\text{mA}$
 For PNP, the polarity is reversed.

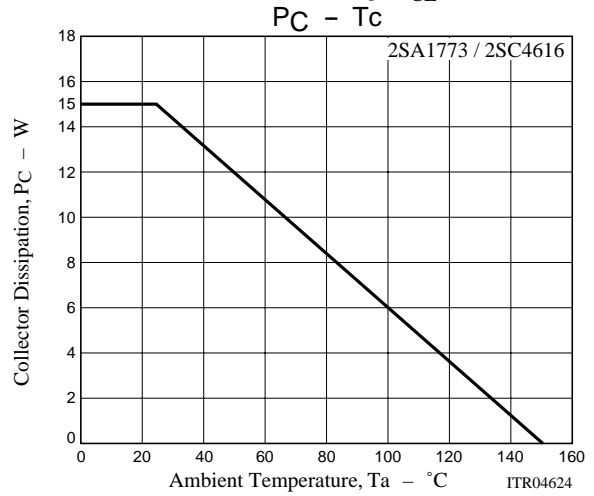
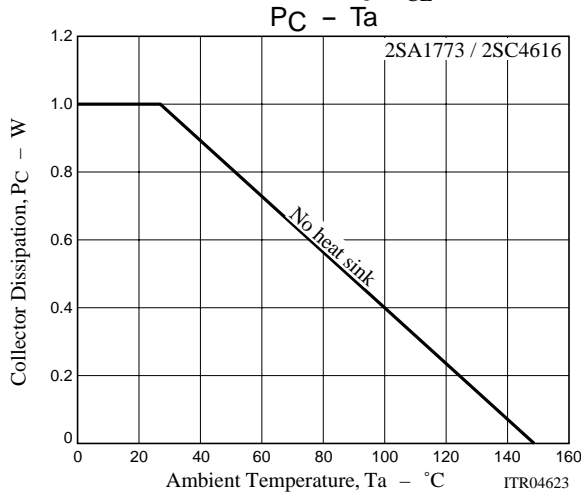
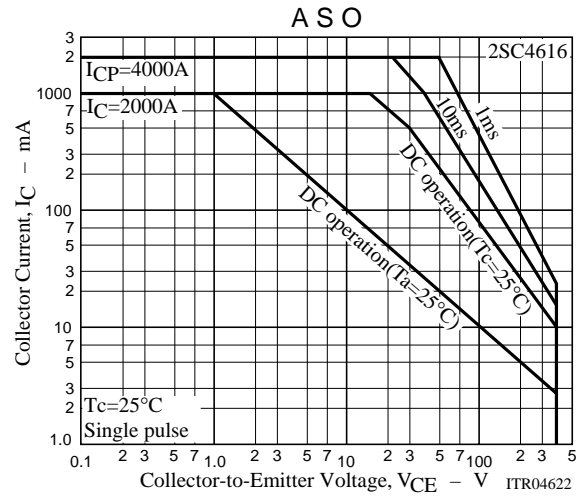
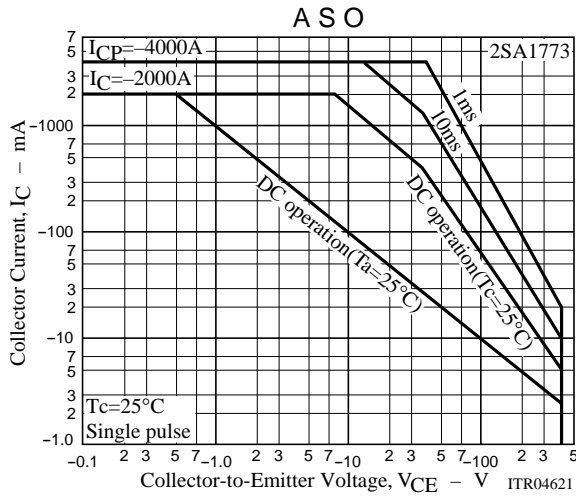
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