

2SB824/2SD1060

50V/5A Switching Applications

Applications

 Suitable for relay drivers, high-speed inverters, converters, and other general large-current switching.

Features

 \cdot Low collector-to-emitter saturation voltage : $V_{CE(sat)} \!\!=\! (-)0.4 V \; max/I_{C} \!\!=\! (-)3A, \; I_{B} \!\!=\! (-)0.3A.$

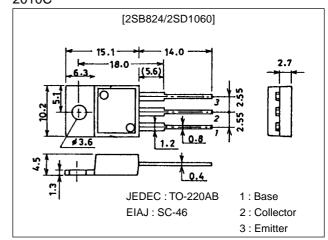
():2SB824

Specifications

Absolute Maximum Ratings at Ta = 25°C

Package Dimensions

unit:mm 2010C



| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|------------------|------------|-------------|------|
| Collector-to-Base Voltage | V _{CBO} | | (-)60 | V |
| Collector-to-Emitter Voltage | V _{CEO} | | (–)50 | V |
| Emitter-to-Base Voltage | V _{EBO} | | (–)6 | V |
| Collector Current | IC | | (–)5 | Α |
| Collector Current (Pulse) | I _{CP} | | (–)9 | Α |
| Collector Dissipation | PC | Tc=25°C | 30 | W |
| Junction Temperature | Tj | | 150 | °C |
| Storage Temperature | Tstg | | -55 to +150 | °C |

Electrical Characteristics at Ta = 25°C

| Parameter | Symbol | Conditions | | Ratings | | |
|--------------------------|-------------------|---|-----|---------|--------|------|
| | Symbol | | min | typ | max | Unit |
| Collector Cutoff Current | I _{CBO} | V _{CB} =(-)40V, I _E =0 | | | (-)0.1 | mA |
| Emitter Cutoff Current | I _{EBO} | V _{EB} =(-)4V, I _C =0 | | | (–)0.1 | mA |
| DC Current Gain | h _{FE} 1 | V _{CE} =(-)2V, I _C =(-)1A | 70* | | 280* | |
| | h _{FE} 2 | V _{CE} =(-)2V, I _C =(-)3A | 30 | | | |
| Gain-Bandwidth Product | f _T | V _{CE} =(-)5V, I _C =(-)1A | | 30 | | MHz |
| Output Capacitance | C _{ob} | V _{CB} =(-)10V, f=1MHz | | 100 | | pF |
| | | | | (160) | | pF |

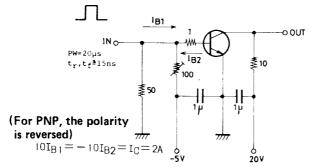
 $\mbox{\ast}$: The 2SB824/2SD1060 are graded as follows by \mbox{h}_{FE} at 1A :

70 Q 140 100 R 200 140 S 280

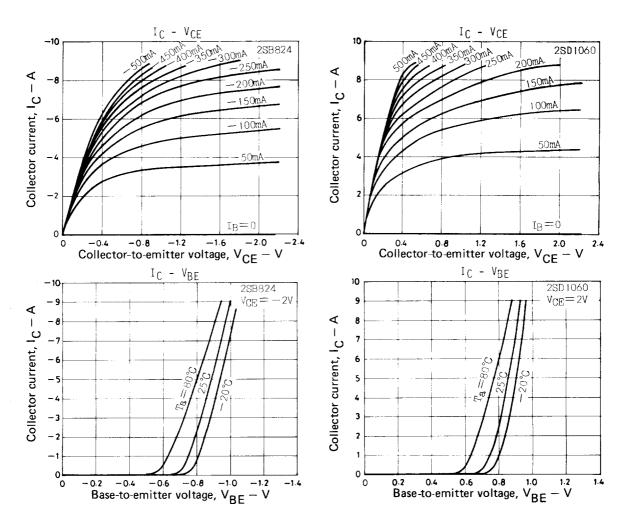
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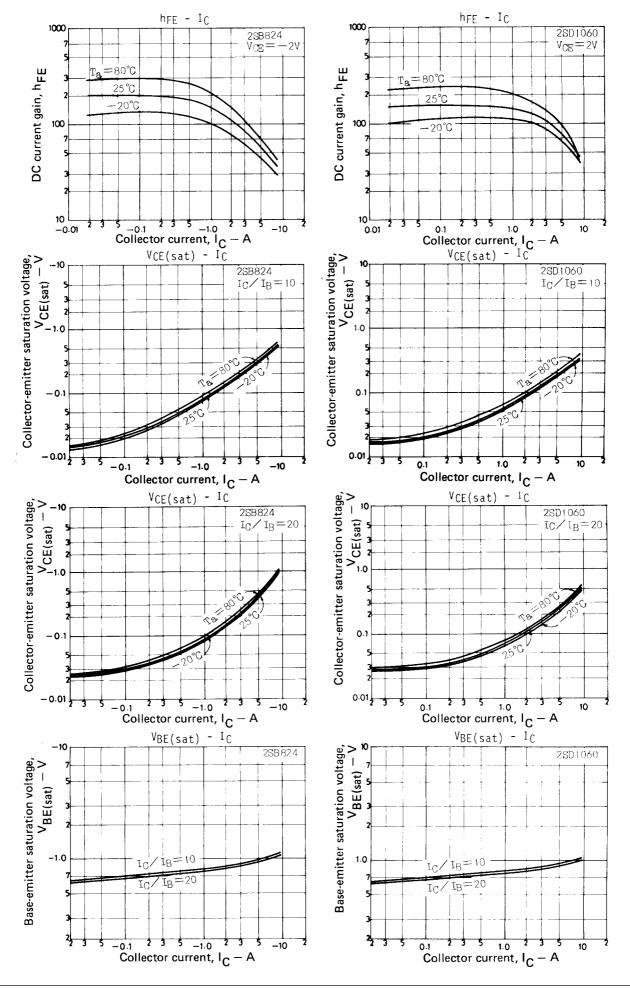
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|-----------------------|--|---------|-------|--------|-------|
| | | | min | typ | max | Offit |
| Collector-to-Emitter Saturation Voltage | V _{CE(sat)} | I _C =(-)3A, I _B =(-)0.3A | | | (-)0.4 | V |
| Collector-to-Base Breakdown Voltage | V _(BR) CBO | I _C =(-)1mA, I _E =0 | (–)60 | | | V |
| Collector-to-Emitter Breakdown Voltage | V(BR)CEO | I _C =(-)1mA, R _{BE} =∞ | (–)50 | | | V |
| Emitter-to-Base Breakdown Voltage | V(BR)EBO | I _E =(-)1mA, I _C =0 | (–)6 | | | V |
| Turn-ON Time | ton | See specified test circuit. | | 0.1 | | μs |
| Storage Time | t _{stg} | See specified test circuit. | | (0.7) | | μs |
| | | | | 1.4 | | μs |
| Fall Time | t _f | See specified test circuit. | | 0.2 | | μs |

Switching Time Test Circuit

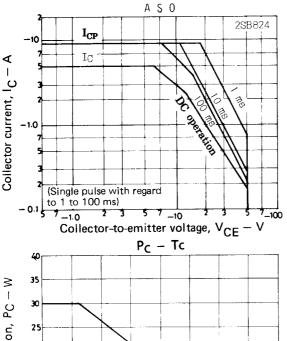


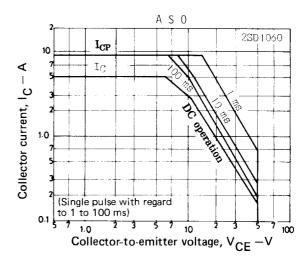
Unit (resistance : Ω , capacitance : F)

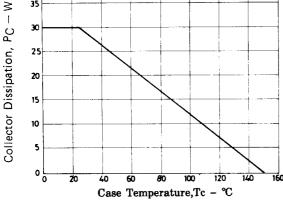




2SB824/2SD1060







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