



PRODUCT DATA SHEET



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Datasheet



Resources



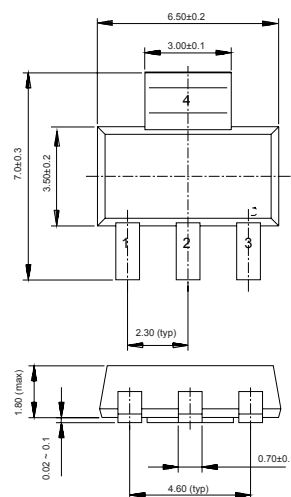
Samples

Please note: Please check the JINGAO Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.jg-semi.cn. Please email any questions regarding the system integration to JINGAO_questions@jgsemi.com.

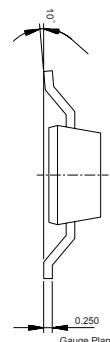
■ Features

- Collector Current Capability $I_C=7A$
- Collector Emitter Voltage $V_{CE0}=30V$
- Very low saturation voltages

SOT-223



Unit:mm



- 1.Base
- 2.Collector
- 3.Emitter
- 4.Collector

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

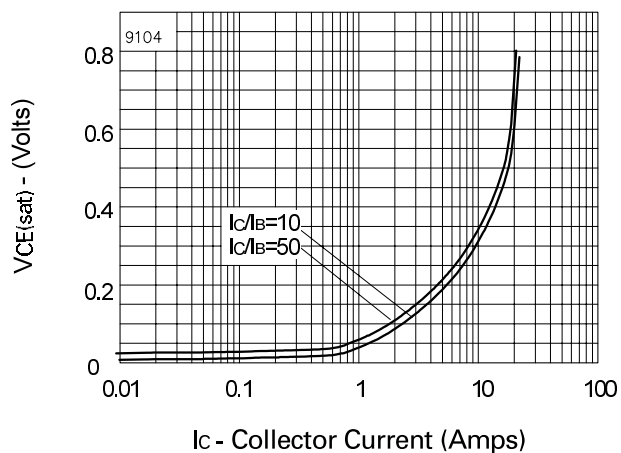
| Parameter | Symbol | Rating | Unit |
|--------------------------------|-----------|------------|-------------|
| Collector - Base Voltage | V_{CBO} | 80 | V |
| Collector - Emitter Voltage | V_{CEO} | 30 | |
| Emitter - Base Voltage | V_{EBO} | 6 | |
| Collector Current - Continuous | I_C | 7 | A |
| Collector Current - Pulse | I_{CP} | 20 | |
| Collector Power Dissipation | P_C | 3 | W |
| Junction Temperature | T_J | 150 | $^{\circ}C$ |
| Storage Temperature Range | T_{stg} | -55 to 150 | |

■ Electrical Characteristics Ta = 25℃

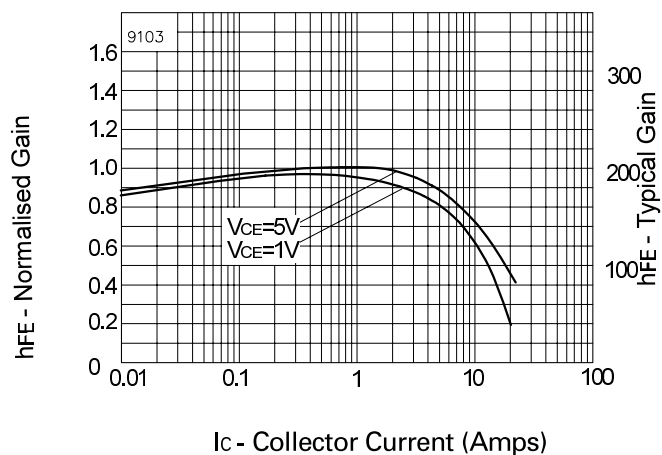
| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--|----------------------|---|-----|-----|------|------|
| Collector- base breakdown voltage | V _{CBO} | I _C = 100 μA, I _E = 0 | 80 | | | V |
| Collector- emitter breakdown voltage | V _{CER} | I _C = 1 uA, R _B ≤ 1KΩ | 80 | | | |
| Collector- emitter breakdown voltage | V _{CEO} | I _C = 10 mA, I _B = 0 | 30 | | | |
| Emitter - base breakdown voltage | V _{EBO} | I _E = 100 μ A, I _C = 0 | 6 | | | |
| Collector-base cut-off current | I _{CBO} | V _{CB} = 70 V , I _E = 0 | | | 0.05 | nA |
| | | V _{CB} = 70 V , I _E = 0 , Ta = 100℃ | | | 1 | uA |
| Collector-emitter cut-off current (R ≤ 1KΩ) | I _{CER} | V _{CB} = 70 V , I _E = 0 | | | 50 | nA |
| | | V _{CB} = 70 V , I _E = 0 , Ta = 100℃ | | | 1 | uA |
| Emitter cut-off current | I _{EBO} | V _{EB} = 6V , I _C =0 | | | 10 | nA |
| Collector-emitter saturation voltage | V _{CE(sat)} | I _C =500mA, I _B =20mA (Note.1) | | | 50 | mV |
| | | I _C =1 A, I _B =20mA (Note.1) | | | 110 | |
| | | I _C =2 A, I _B =20mA (Note.1) | | | 214 | |
| | | I _C =6.5 A, I _B =300mA (Note.1) | | | 350 | |
| Base - emitter saturation voltage | V _{BE(sat)} | I _C =6.5 A, I _B =300mA (Note.1) | | | 1.2 | V |
| Base - emitter turn-on voltage | V _{BE(on)} | V _{CE} = 1V, I _C = 6.5A (Note.1) | | | 1.13 | |
| DC current gain (Note.1) | h _{FE(1)} | V _{CE} = 1V, I _C = 10mA | 100 | | | |
| | h _{FE(2)} | V _{CE} = 1V, I _C = 1 A | 100 | | 300 | |
| | h _{FE(3)} | V _{CE} = 1V, I _C = 7 A | 100 | | | |
| | h _{FE(4)} | V _{CE} = 2V, I _C = 20 A | 30 | | | |
| Switching Times | t _{on} | I _C =1 A, V _{CC} =10V | | 45 | | ns |
| | t _{off} | I _{B1} =100mA, I _{B2} =100mA | | 630 | | |
| Collector output capacitance | C _{ob} | V _{CB} = 10V, f=1MHz (Note.1) | | 75 | | pF |
| Transition frequency | f _T | V _{CE} = 10V, I _C = 100mA, f=50MHz | | 100 | | MHz |

Note.1:Pulse Width=300us. Duty cycle ≤2%

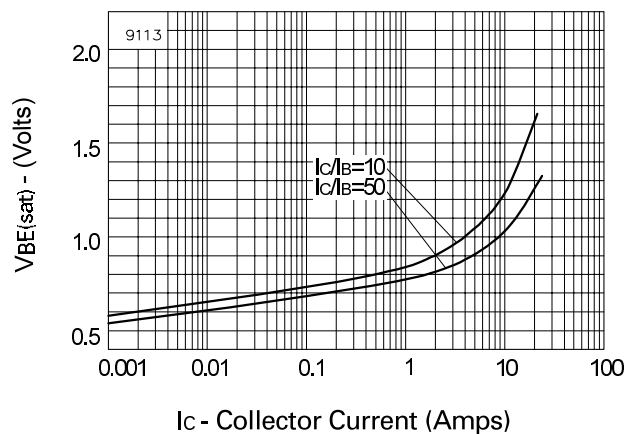
■ Typical Characteristics



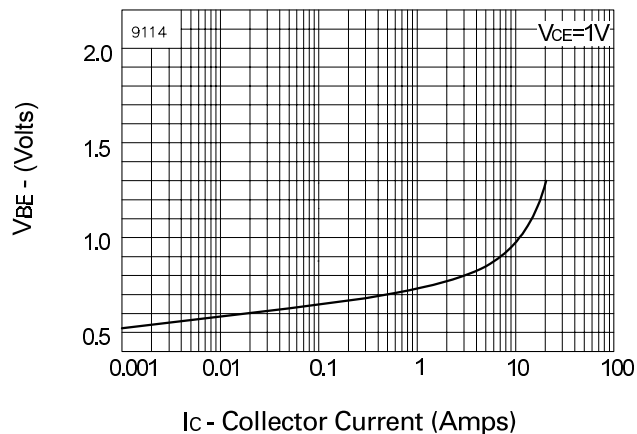
$V_{CE(sat)}$ v I_C



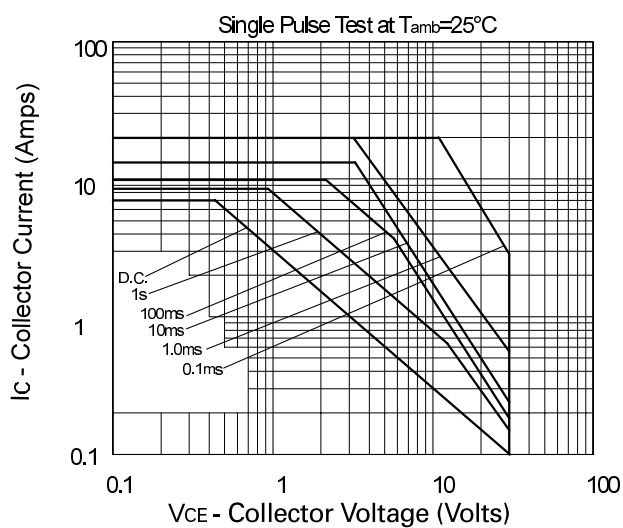
hFE v I_C



$V_{BE(sat)}$ v I_C



$V_{BE(on)}$ v I_C



Safe Operating Area

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