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Part Name

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BC238B

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Description

NPN EPITAXIAL SILICON TRAN

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BC238B

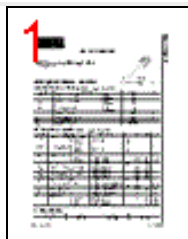
NPN EPITAXIAL SILICON TRANSISTOR (4 Page)

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BC237/238/239

Switching and Amplifier Applications

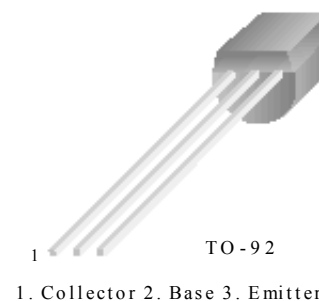
- Low Noise: BC239

NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings

T_a = 25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|-----------------|-----------|-------|-------|
| V _{CE} | | | |



BC237/238/239

| | | | | |
|------------------|-----------------------------|------------------------|-----------|--------|
| | Collector-Emitter Voltage | : BC237 : BC238/239 | 50 30 | V V |
| V _{CEO} | Collector-Emitter Voltage | : BC237 : BC238/239 | 45 25 | V V |
| V _{EBO} | Emitter-Base Voltage | : BC237 : BC238/239 | 6 5 | V V |
| I _C | Collector Current (DC) | | 1 0 0 | mA |
| P _C | Collector Power Dissipation | | 5 0 0 | mW |
| T _J | Junction Temperature | | 1 5 0 | °C |
| T _{STG} | Storage Temperature | | -55 ~ 150 | °C |

Electrical Characteristics T

a=25°C unless otherwise noted

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Units |
|----------------------|---|--|------|------|------|-------|
| B V _{CEO} | Collector-Emitter Breakdown Voltage : BC237 : BC238/239 | I _C =2mA, I _B =0 | 45 | | | V |
| | | | 25 | | | V |
| B V _{EBO} | Emitter Base Breakdown Voltage : BC237 : BC238/239 | I _E =1μA, I _C =0 | 6 | | | V |
| | | | 5 | | | V |
| I _{CES} | Collector Cut-off Current : BC237 : BC238/239 | V _{CE} =50V, V _{BE} =0 V _{CE} =30V, V _{BE} =0 | | 0.2 | 15 | nA |
| | | | | 0.2 | 15 | nA |
| h _{FE} | DC Current Gain | V _{CE} =5V, I _C =2mA | 120 | | 800 | |
| V _{CE(sat)} | Collector-Emitter Saturation Voltage | I _C =10mA, I _B =0.5mA | | 0.07 | 0.2 | V |
| | | I _C =100mA, I _B =5mA | | 0.2 | 0.6 | V |
| V _{BE(sat)} | Collector-Base Saturation Voltage | I _C =10mA, I _B =0.5mA | | 0.73 | 0.83 | V |
| | | I _C =100mA, I _B =5mA | | 0.87 | 1.05 | V |
| V _{BE(on)} | Base-Emitter On Voltage | V _{CE} =5V, I _C =2mA | 0.55 | 0.62 | 0.7 | V |
| f _T | Current Gain Bandwidth Product | V _{CE} =3V, I _C =0.5mA, f=100MHz | | 85 | | MHz |
| | | V _{CE} =5V, I _C =10mA, f=100MHz | 150 | 250 | | MHz |
| C _{ob} | Output Capacitance | V _{CB} =10V, I _E =0, f=1MHz | | 3.5 | 6 | pF |
| C _{ib} | Input Base Capacitance | V _{EB} =0.5V, I _C =0, f=1MHz | | 8 | | pF |
| NF | Noise Figure : BC237/238 : BC239 : BC239 | V _{CE} =5V, I _C =0.2mA, f=1KHz R _G =2KΩ V _{CE} =5V, I _C =0.2mA R _G =2KΩ, f=30~15KHz | | 210 | | dB |
| | | | | | 4 | dB |
| | | | | | 4 | dB |

hFE Classification

| Classification | A | B | C |
|-----------------|-----------|-----------|-----------|
| h _{FE} | 120 ~ 220 | 180 ~ 460 | 380 ~ 800 |

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| Part Number | Components Description | Html View | Manufacturer |
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| 2SC6015 | NPN Epitaxial Planar Silicon Transistor DC / DC Converter Applications | 1 2 3 4 | Sanyo Semicon Device |
| 2SC1927 | NPN SILICON EPITAXIAL DUAL TRANSISTOR FOR DIFFERENTIAL AMPLIFIER AND ULTRA HIGH SPEED SWITCHING INDUSTRIAL USE | 1 2 3 4 | NEC |
| 2SC3583 | MICROWAVE LOW NOISE AMPLIFIER NPN SILICON EPITAXIAL TRANSISTOR | 1 2 3 4 5 More | NEC |
| 2SC4092 | HIGH FREQUENCY LOW NOISE AMPLIFIER NPN SILICON EPITAXIAL TRANSISTOR 4 PINS MINI MOLD | 1 2 3 4 5 More | NEC |

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|---------|---|----------------|-----|
| 2SC4186 | UHF OSCILLATOR AND UHF MIXER NPN SILICON EPITAXIAL TRANSISTOR MINI MOLD | 1 2 3 4 5 More | NEC |
| 2SC4957 | HIGH FREQUENCY LOW NOISE AMPLIFIER NPN SILICON EPITAXIAL TRANSISTOR 4 PINS MINI MOLD | 1 2 3 4 5 More | NEC |
| 2SC5178 | NPN EPITAXIAL SILICON TRANSISTOR IN 4-PIN MINI-MOLD PACKAGE FOR LOW-NOISE MICROWAVE AMPLIFICATION | 1 2 3 4 5 More | NEC |
| 2SC5336 | NPN EPITAXIAL SILICON TRANSISTOR HIGH FREQUENCY LOW DISTORTION AMPLIFIER | 1 2 3 4 5 More | NEC |
| 2SD1001 | NPN SILICON EPITAXIAL TRANSISTOR POWER MINI MOLD | 1 2 3 4 | NEC |
| UPA807T | MICROWAVE LOW NOISE AMPLIFIER NPN SILICON EPITAXIAL TRANSISTOR WITH BUILT-IN 2 ELEMENTS SUPER MINI MOLD | 1 2 3 4 5 More | NEC |

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