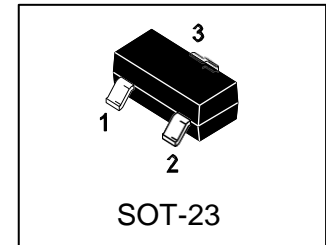


General Purpose Transistors NPN Silicon

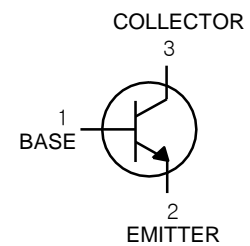
1. FEATURES

- Silicon NPN transistor in a SOT-23 Plastic Package
- Collector currents up to 600 mA, Qualified to AEC-Q101 Standards for High Reliability, HF Product
- General purpose amplifier, Meet the stringent requirements of automotive applications



2. DEVICE MARKING AND ORDERING INFORMATION

| Device | Marking | Shipping |
|-------------|---------|----------------|
| 2N2222AS-AB | Q1P | 3000/Tape&Reel |



3. MAXIMUM RATINGS(Ta = 25°C)

| Parameter | Symbol | Limits | Unit |
|--------------------------------|------------------|--------|------|
| Collector–Emitter Voltage | V _{CEO} | 40 | V |
| Collector–Base Voltage | V _{CBO} | 75 | V |
| Emitter–Base Voltage | V _{EB0} | 6 | V |
| Collector Current — Continuous | I _C | 600 | mA |

4. THERMAL CHARACTERISTICS

| Parameter | Symbol | Limits | Unit |
|---|----------------------------------|------------|-------------|
| Total Device Dissipation, FR-5 Board (Note 1) @ TA = 25°C Derate above 25°C | PD | 225 1.8 | mW mW/°C |
| Thermal Resistance, Junction–to–Ambient(Note 1) | R _{θJA} | 556 | °C/W |
| Junction–to–Case | R _{θJC} | 300 | °C/W |
| Junction and Storage temperature | T _J ,T _{stg} | -55~+150 | °C |

1. FR-5 = 1.0x0.75x0.062 in.



2N2222AS-AB

5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

OFF CHARACTERISTICS

| Characteristic | Symbol | Min. | Typ. | Max. | Unit |
|--|----------|--------|--------|------------|------|
| Collector–Emitter Breakdown Voltage (IC = 10 mA, IB = 0) | VBR(CEO) | 40 | - | - | V |
| Collector–Base Breakdown Voltage (IC = 10 μA, IE = 0) | VBR(CBO) | 75 | - | - | V |
| Emitter–Base Breakdown Voltage (IE = 10 μA, IC = 0) | VBR(EBO) | 6 | - | - | V |
| Collector Cutoff Current (VCB = 60 V, IE = 0) (VCB = 60 V, IE = 0, TA = 125°C) | ICBO | - - | - - | 0.01 10 | μA |
| Emitter Cutoff Current (VEB = 3.0 V, IC = 0) | IEBO | - | - | 100 | nA |
| Collector-Emitter cutoff Current (VCE 40V, IB=0) | ICEO | - | - | 10 | μA |

ON CHARACTERISTICS (Note 2.)

| | | | | | |
|--|----------|---|---------------------------------|-----------------------------------|---|
| DC Current Gain (IC = 0.1 mA, VCE = 10 V) (IC = 1.0 mA, VCE = 10 V) (IC = 10 mA, VCE = 10 V) (IC = 10 mA, VCE = 10 V, TA= -55°C) (IC = 150 mA, VCE = 10 V) (IC = 150 mA, VCE = 1.0 V) (IC = 500 mA, VCE = 10 V) | HFE | 35 50 75 35 100 50 40 | - - - - - - - | - - - - 300 - - | |
| Collector–Emitter Saturation Voltage (IC = 150 mA, IB = 15 mA) (IC = 500 mA, IB = 50 mA) | VCE(sat) | - - | - - | 0.3 1 | V |
| Base–Emitter Saturation Voltage (IC = 150 mA, IB = 15 mA) (IC = 500 mA, IB = 50 mA) | VBE(sat) | 0.6 - | - - | 1.2 2 | V |

SMALL–SIGNAL CHARACTERISTICS

| | | | | | |
|---|------|-----|---|---|-----|
| Current–Gain — Bandwidth Product (IC = 20mA, VCE= 20V, f = 100MHz) | fT | 300 | - | - | MHz |
| Output Capacitance (VCB = 10.0V, IE = 0, f = 1.0 MHz) | Cobo | - | - | 8 | pF |



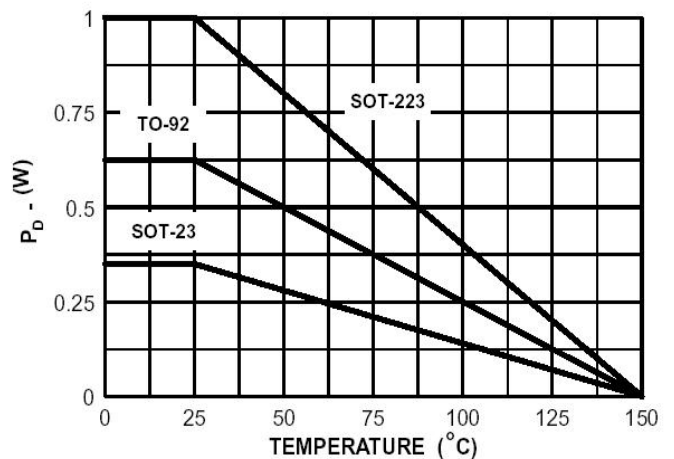
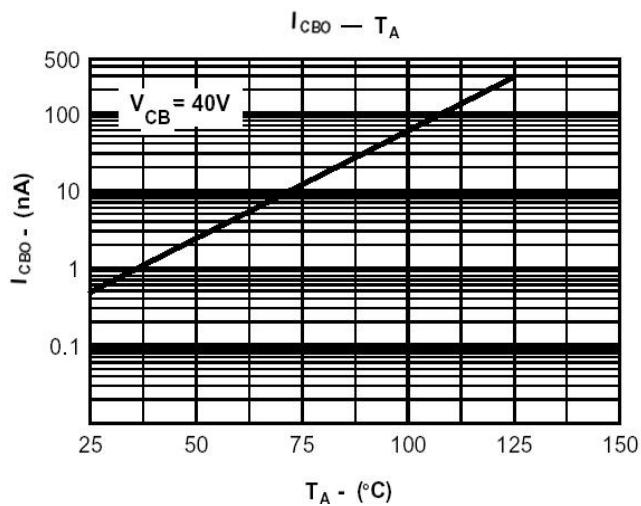
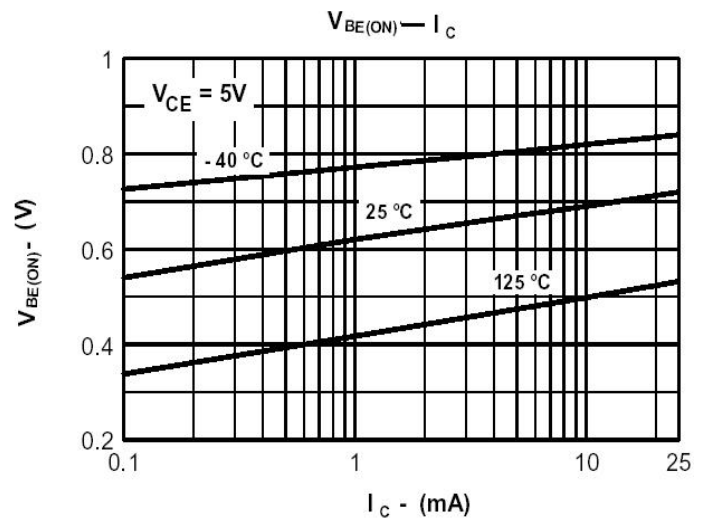
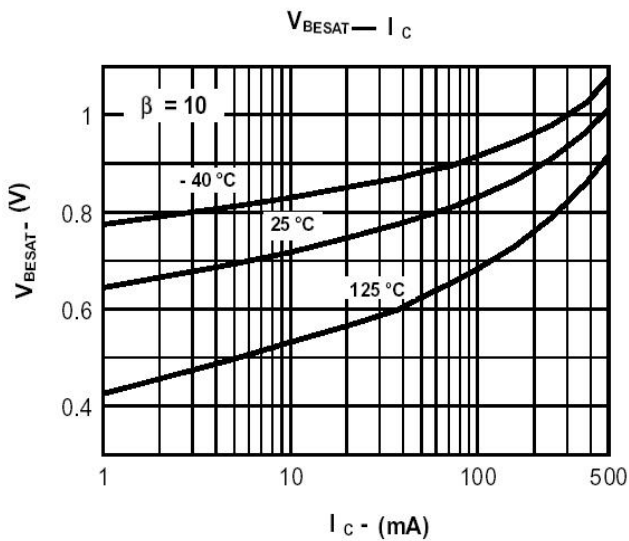
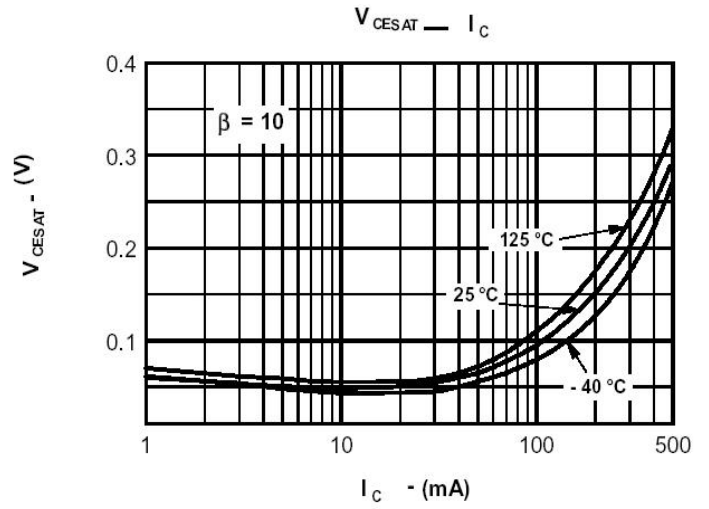
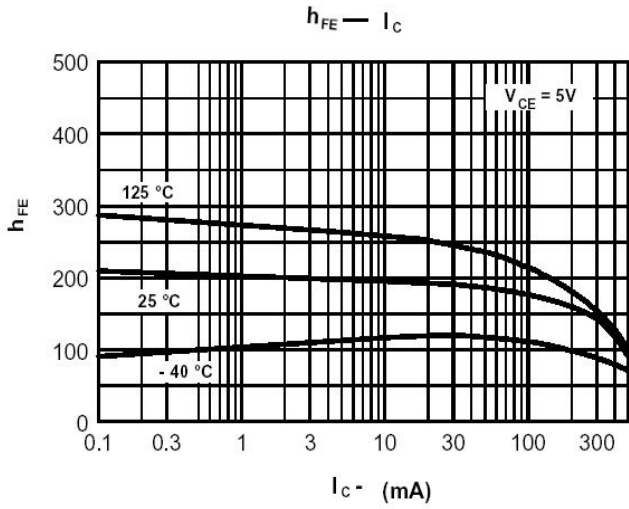
2N2222AS-AB

5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

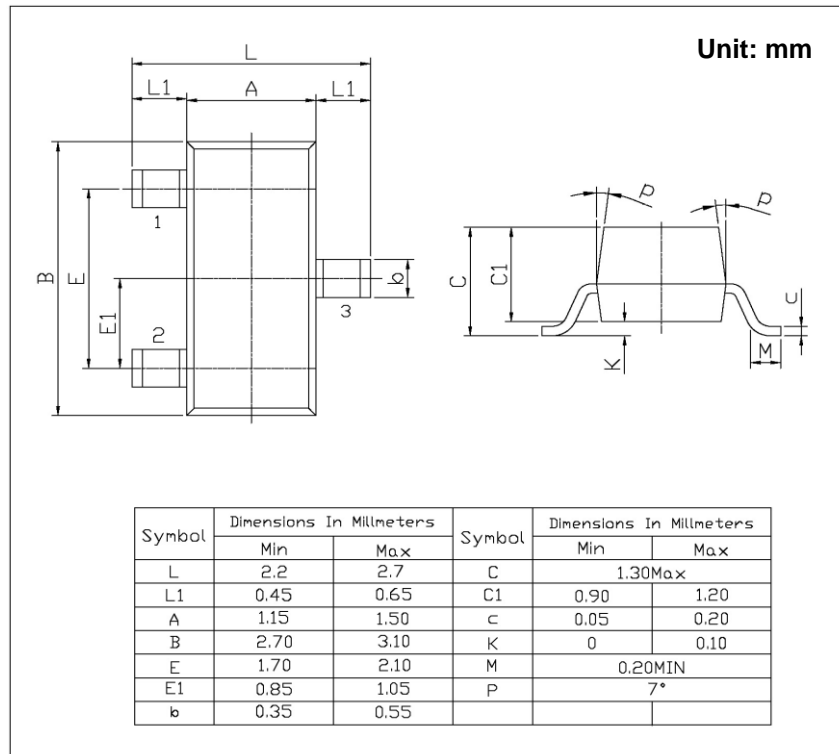
SWITCHING CHARACTERISTICS

| | | | | | |
|-----------|---|---|---|-----|----|
| t_{on} | (VCC = 30 V, VEB=-0.5V, IC = 150mA, IB1 = 15mA) | - | - | 35 | ns |
| t_{off} | (VCC = 30 V, IC = 150 mA, IB1 = IB2 = 15 mA) | - | - | 285 | |

6. ELECTRICAL CHARACTERISTICS CURVES



7. Package Dimensions(SOT-23)



8.SOLDERING FOOTPRINT

