

Features

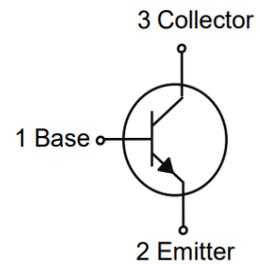
- Low Noise and High Gain
- High Power Gain

Application

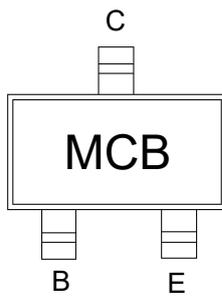
- low noise amplifier at VHF, UHF and CATV band applications



SOT-323 top view



Schematic diagram



MCB= Device code

Pin assignment



Pb-Free



Halogen-Free

Maximum Ratings(Ta=25°C unless otherwise noted)

| Symbol | Parameter | Value | Unit |
|-----------------|--|----------|------|
| V_{CBO} | Collector-Base Voltage | 20 | V |
| V_{CEO} | Collector-Emitter Voltage | 10 | V |
| V_{EBO} | Emitter-Base Voltage | 1.5 | V |
| I_C | Collector Current | 50 | mA |
| P_C | Collector Power Dissipation | 100 | mW |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient | 1250 | °C/W |
| T_J, T_{stg} | Operation Junction and Storage Temperature Range | -50~+150 | °C |

Ordering Information (Example)

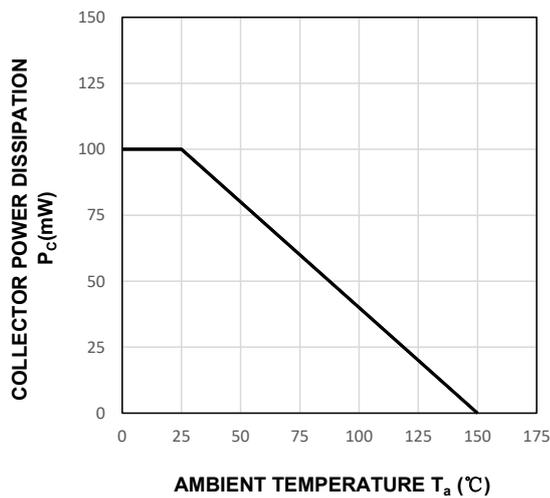
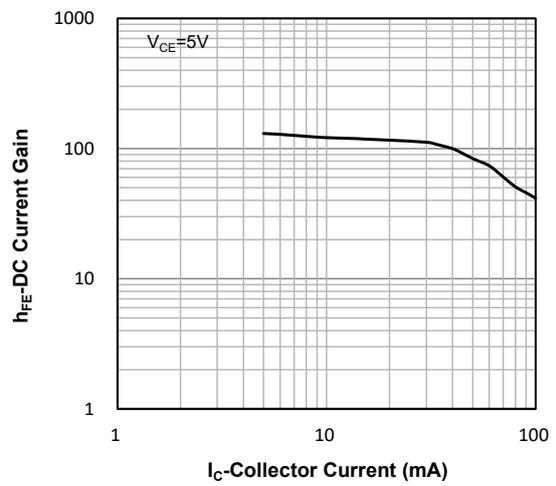
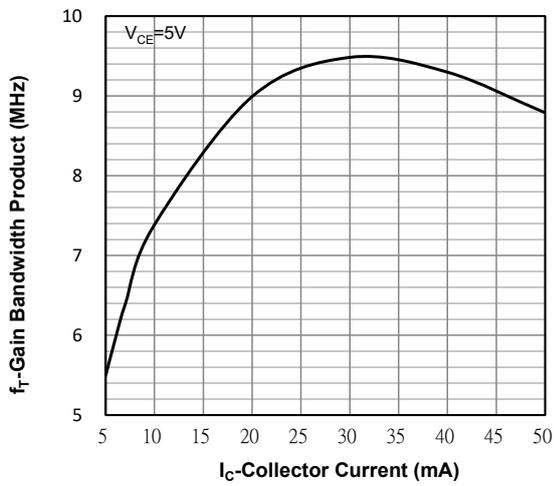
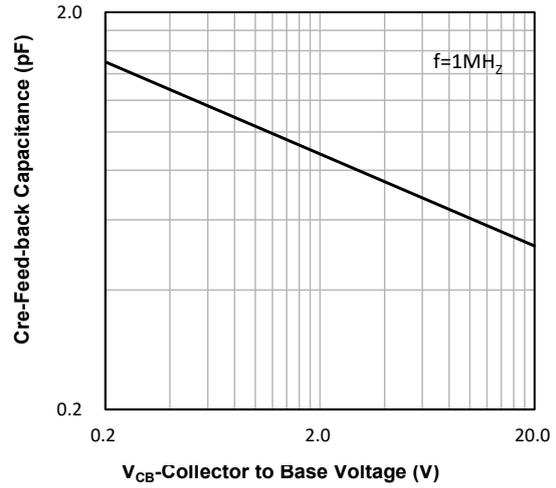
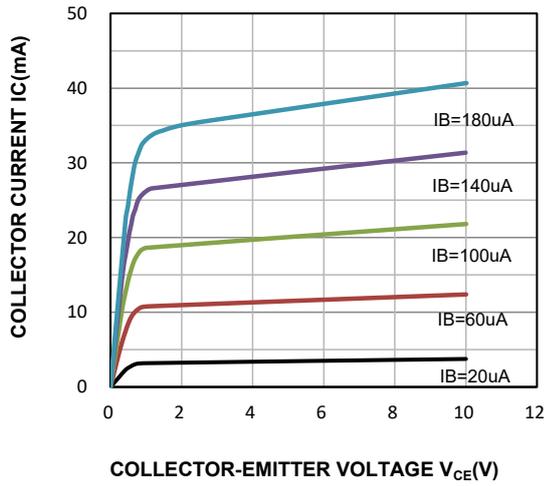
| Type | Package | Minimum Package(pcs) | Inner Box Quantity(pcs) | Outer Carton Quantity(pcs) | Delivery Mode |
|---------|---------|----------------------|-------------------------|----------------------------|---------------|
| MLS1405 | SOT-323 | 3,000 | 45,000 | 180,000 | 7" reel |

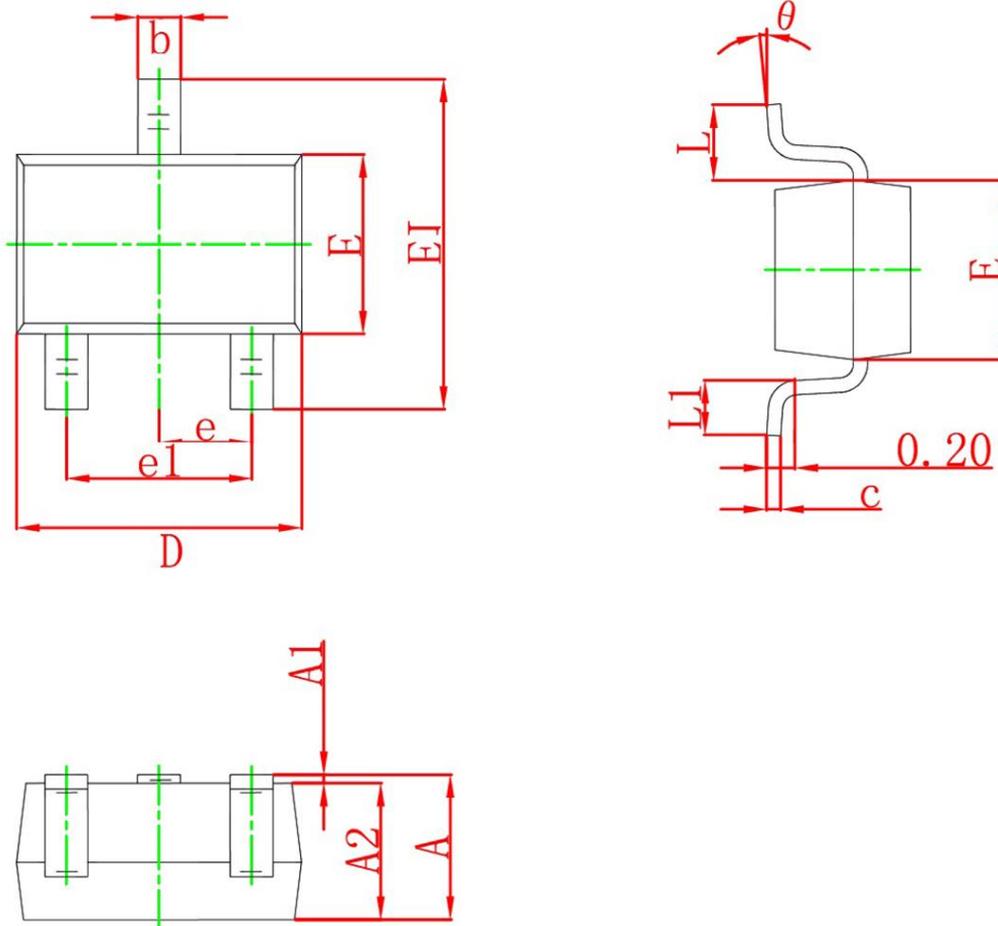
Electrical Characteristics (T_J=25°C unless otherwise noted)

| Symbol | Parameter | Condition | Min | Typ | Max | Unit |
|----------------------|--------------------------------------|--|-----|------|------|------|
| V _{(BR)CBO} | Collector-base breakdown voltage | I _C =1μA, I _E =0 | 20 | -- | -- | V |
| V _{(BR)CEO} | Collector-emitter breakdown voltage | I _C =1mA, I _B =0 | 10 | -- | -- | V |
| V _{(BR)EBO} | Emitter-base breakdown voltage | I _E =100μA, I _C =0 | 1.5 | -- | -- | V |
| I _{CBO} | Collector cut-off current | V _{CB} =10 V, I _E =0 | -- | -- | 0.1 | μA |
| I _{EBO} | Emitter cut-off current | V _{EB} = 1V, I _C =0 | -- | -- | 0.1 | μA |
| h _{FE} | DC current gain | V _{CE} =5V, I _C = 20mA | 90 | -- | 250 | |
| V _{CE(sat)} | Collector-emitter saturation voltage | I _C =50 mA, I _B = 5mA | -- | -- | 0.3 | V |
| V _{BE(sat)} | Base-emitter saturation voltage | I _C =50 mA, I _B = 5mA | -- | -- | 1.15 | V |
| N _F | Noise Figure | V _{CB} =5V, I _C =5mA, f=0.9GHz | -- | 1.65 | 2.3 | dB |
| C _{re} | Feed-Back Capacitance | V _{CB} =10V, I _E =0mA, f=1MHz | -- | 0.6 | 1 | pF |
| f _T | Transition frequency | V _{CE} =5V, I _C = 20mA | -- | 9 | -- | GHz |

Classification of h_{FE}

| Rank | A | B | C |
|---------|--------|---------|---------|
| Marking | MCB | | |
| Range | 90-140 | 120-180 | 170-250 |

Typical Operating Characteristics


SOT-323 Package information


| Symbol | Dimensions in Millimeters(mm) | | Dimensions In Inches | |
|--------|-------------------------------|-------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 0.900 | 1.100 | 0.035 | 0.043 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.000 | 0.035 | 0.039 |
| b | 0.200 | 0.400 | 0.008 | 0.016 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.000 | 2.200 | 0.079 | 0.087 |
| E | 1.150 | 1.350 | 0.045 | 0.053 |
| E1 | 2.150 | 2.450 | 0.085 | 0.096 |
| e | 0.650TYP | | 0.026TYP | |
| e1 | 1.200 | 1.400 | 0.047 | 0.055 |
| L | 0.525REF | | 0.021REF | |
| L1 | 0.260 | 0.460 | 0.010 | 0.018 |
| θ | 0° | 8° | 0° | 8° |