

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

FEATURES

- High DC Current Gain.
- High Voltage.
- Complementary to 2SA1611

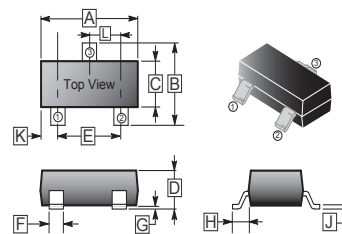
APPLICATIONS

- General Purpose Amplification

CLASSIFICATION OF h_{FE}

| Product-Rank | 2SC4177-L4 | 2SC4177-L5 | 2SC4177-L6 | 2SC4177-L7 |
|--------------|------------|------------|------------|------------|
| Range | 90~180 | 135~270 | 200~400 | 300~600 |
| Marking | L4 | L5 | L6 | L7 |

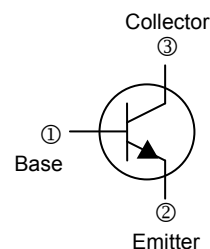
SOT-323



| REF. | Millimeter | | REF. | Millimeter | |
|------|------------|------|------|------------|------|
| | Min. | Max. | | Min. | Max. |
| A | 1.80 | 2.20 | G | 0.100 | REF. |
| B | 1.80 | 2.45 | H | 0.525 | REF. |
| C | 1.15 | 1.35 | J | 0.08 | 0.25 |
| D | 0.80 | 1.10 | K | - | - |
| E | 1.20 | 1.40 | L | 0.650 | TYP. |
| F | 0.20 | 0.40 | | | |

PACKAGE INFORMATION

| Package | MPQ | Leader Size |
|---------|-----|-------------|
| SOT-323 | 3K | 7' inch |



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Rating | Unit |
|---|-----------------|--------------|-----------------------------|
| Collector-Base Voltage | V_{CBO} | 60 | V |
| Collector-Emitter Voltage | V_{CEO} | 50 | V |
| Emitter-Base Voltage | V_{EBO} | 5 | V |
| Collector Current | I_C | 100 | mA |
| Collector Power Dissipation | P_C | 150 | mW |
| Thermal Resistance From Junction To Ambient | $R_{\theta JA}$ | 833 | $^\circ\text{C} / \text{W}$ |
| Junction & Storage temperature | T_J, T_{STG} | 150, -55~150 | $^\circ\text{C}$ |

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Test Condition |
|-------------------------------------|---------------|------|------|------|------|--|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | 60 | - | - | V | $I_C=100\mu\text{A}, I_E=0$ |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | 50 | - | - | V | $I_C=1\text{mA}, I_B=0$ |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | 5 | - | - | V | $I_E=100\mu\text{A}, I_C=0$ |
| Collector Cut-off Current | I_{CBO} | - | - | 100 | nA | $V_{CB}=60\text{V}, I_E=0$ |
| Emitter Cut-off Current | I_{EBO} | - | - | 100 | nA | $V_{EB}=5\text{V}, I_C=0$ |
| DC Current Gain ¹ | h_{FE} | 90 | - | 600 | | $V_{CE}=6\text{V}, I_C=1\text{mA}$ |
| Collector-Base Saturation Voltage | $V_{CE(sat)}$ | - | - | 0.3 | V | $I_C=100\text{mA}, I_B=10\text{mA}$ |
| Base-emitter Saturation Voltage | $V_{BE(sat)}$ | - | - | 1 | V | $I_C=100\text{mA}, I_B=10\text{mA}$ |
| Base-emitter Voltage | V_{BE} | 0.55 | - | 0.65 | V | $V_{CE}=6\text{V}, I_C=1\text{mA}$ |
| Transition Frequency | f_T | - | 250 | - | MHz | $V_{CE}=6\text{V}, I_C=10\text{mA}$ |
| Collector Output Capacitance | C_{ob} | - | 3 | - | pF | $V_{CB}=6\text{V}, I_E=0, f=1\text{MHz}$ |

Note:

1. Pulse test: pulse width $\leq 350\mu\text{s}$, duty cycle $\leq 2.0\%$

Typical Characteristics

