

AV42LT1 TRANSISTOR (NPN)

FEATURES

Power dissipation

$$P_{CM} : 0.3 \text{ W (} T_{amb}=25 \text{)}$$

Collector current

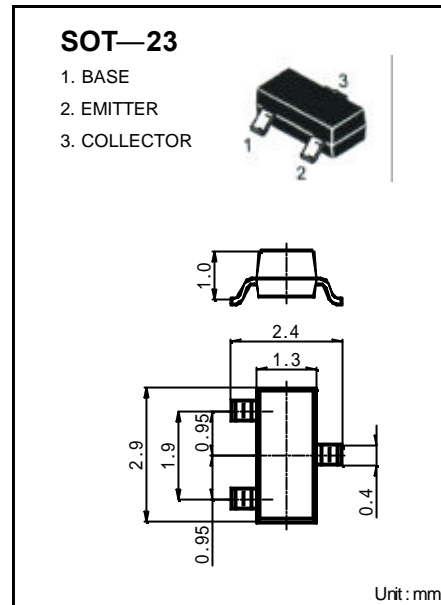
$$I_{CM} : 0.3 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO} : 300 \text{ V}$$

Operating and storage junction temperature range

$$T_J, T_{stg} : -55 \text{ to } +150$$



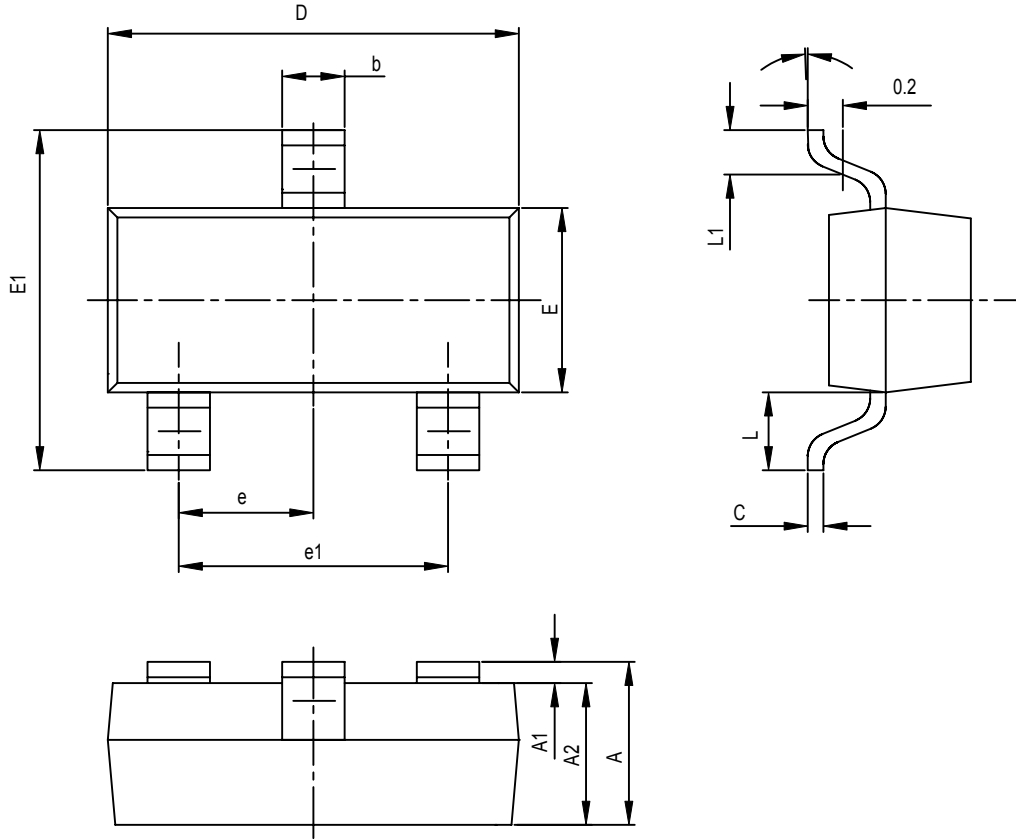
ELECTRICAL CHARACTERISTICS ($T_{amb}=25$ unless otherwise specified)

| Parameter | Symbol | Test conditions | MIN | MAX | UNIT |
|--------------------------------------|---------------|--|-----|------|---------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C = 100 \mu A, I_E = 0$ | 300 | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C = 1 mA, I_B = 0$ | 300 | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E = 100 \mu A, I_C = 0$ | 5 | | V |
| Collector cut-off current | I_{CBO} | $V_{CB} = 200 V, I_E = 0$ | | 0.25 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = 5 V, I_C = 0$ | | 0.1 | μA |
| DC current gain | $H_{FE(1)}$ | $V_{CE} = 10 V, I_C = 1 mA$ | 60 | | |
| | $H_{FE(2)}$ | $V_{CE} = 10 V, I_C = 10 mA$ | 100 | 200 | |
| | $H_{FE(3)}$ | $V_{CE} = 10 V, I_C = 30 mA$ | 60 | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 20 mA, I_B = 2 mA$ | | 0.2 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C = 20 mA, I_B = 2 mA$ | | 0.9 | V |
| Transition frequency | f_T | $V_{CE} = 20 V, I_C = 10 mA$ $f = 30 MHz$ | 50 | | MHz |

DEVICE MARKING

| |
|---------------|
| MMBTA42LT1=1D |
|---------------|

SOT-23 PACKAGE OUTLINE DIMENSIONS



| Symbol | Dimensions In Millimeters | | 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 | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.950TPY | | 0.037TPY | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550REF | | 0.022REF | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |
| θ | 0° | 8° | 0° | 8° |