

General Purpose Transistors

40V,2A Low VCE(sat) NPN Silicon

FEATURES

- Low collector-emitter saturation voltage
- High current capability
- Improved device reliability due to reduced heat generation
- Replacement for SOT89/SOT223 standard packaged transistors.
- We declare that the material of product compliance with RoHS requirements.
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

APPLICATIONS

- Supply line switching circuits
- Battery management applications
- DC/DC converter applications
- Strobe flash units
- Heavy duty battery powered equipment (motor and lamp drivers).

DESCRIPTION

NPN low V_{CEsat} transistor in a SOT23 plastic package.
PNP complement: LBSS5240LT1G.

ORDERING INFORMATION

| Device | Marking | Shipping |
|--------------------------------|---------|-------------------|
| LBSS4240LT1G S-LBSS4240LT1G | ZE | 3000/Tape & Reel |
| LBSS4240LT3G S-LBSS4240LT3G | ZE | 10000/Tape & Reel |

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|--------------------------------|-----------|------------|------|
| Collector–Emitter Voltage | V_{CEO} | 40 | V |
| Collector–Base Voltage | V_{CBO} | 40 | V |
| Emitter–Base Voltage | V_{EBO} | 5.0 | V |
| Collector Current — Continuous | I_C | 2 | A |
| total power dissipation | P_D | 0.3 | W |
| Junction temperature | T_j | 150 | °C |
| Storage temperature | T_{stg} | -65 ~ +150 | °C |

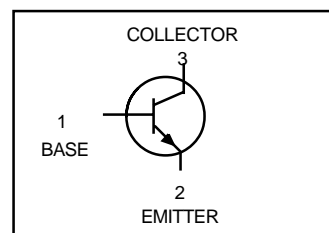
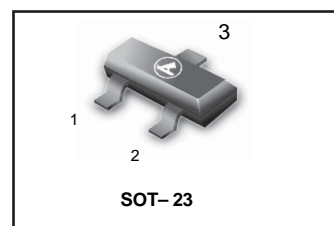
THERMAL CHARACTERISTICS

| Symbol | Parameter | Conditions | Value | Unit |
|---------------|---|--------------------|-------|------|
| $R_{th(j-a)}$ | thermal resistance from junction to ambient | in free air;note 1 | 417 | K/W |
| | | in free air;note 2 | 260 | K/W |

Notes:

- 1.Device mounted on a printed-circuit board,single sided copper,tinplated and standard footprint.
- 2.Device mounted on a printed-circuit board,single sided copper,tinplated and mounted pad for collector 1 cm²

LBSS4240LT1G
S-LBSS4240LT1G



LBSS4240LT1G,S-LBSS4240LT1G
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted.)

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-------------|--------------------------------------|---|------|------|------|
| I_{CBO} | collector-base cut-off current | $I_E = 0; V_{CB} = 30\text{ V}$ | – | 100 | nA |
| I_{EBO} | emitter-base cut-off current | $I_C = 0; V_{EB} = 4\text{ V}$ | – | 100 | nA |
| h_{FE} | DC current gain | $I_C = 100\text{ mA}; V_{CE} = 2\text{ V}$ | 350 | – | |
| | | $I_C = 500\text{ mA}; V_{CE} = 2\text{ V}$ | 300 | – | |
| | | $I_C = 1\text{ A}; V_{CE} = 2\text{ V}$ | 300 | – | |
| | | $I_C = 2\text{ A}; V_{CE} = 2\text{ V}$ | 150 | – | |
| V_{CEsat} | collector-emitter saturation voltage | $I_C = 100\text{ mA}; I_B = 1\text{ mA}$ | – | 70 | mV |
| | | $I_C = 500\text{ mA}; I_B = 50\text{ mA}$ | – | 100 | mV |
| | | $I_C = 750\text{ mA}; I_B = 15\text{ mA}$ | – | 180 | mV |
| | | $I_C = 1\text{ A}; I_B = 50\text{ mA}; \text{note 1}$ | – | 180 | mV |
| | | $I_C = 2\text{ A}; I_B = 200\text{ mA}; \text{note 1}$ | – | 320 | mV |
| V_{BEsat} | base-emitter saturation voltage | $I_C = 2\text{ A}; I_B = 200\text{ mA}; \text{note 1}$ | – | 1.1 | V |
| V_{BEon} | base-emitter turn on voltage | $I_C = 100\text{ mA}; V_{CE} = 2\text{ V}$ | – | 0.75 | V |
| C_c | collector capacitance | $I_E = I_e = 0; V_{CB} = 10\text{ V}; f = 1\text{ MHz}$ | – | 20 | pF |
| f_T | transition frequency | $I_C = 100\text{ mA}; V_{CE} = 10\text{ V}; f = 100\text{ MHz}$ | 100 | – | MHz |

Note

1. Pulse test: $t_p \leq 300\ \mu\text{s}; \delta \leq 0.02$.

LBSS4240LT1G,S-LBSS4240LT1G

ELECTRICAL CHARACTERISTIC CURVES (Ta = 25°C)

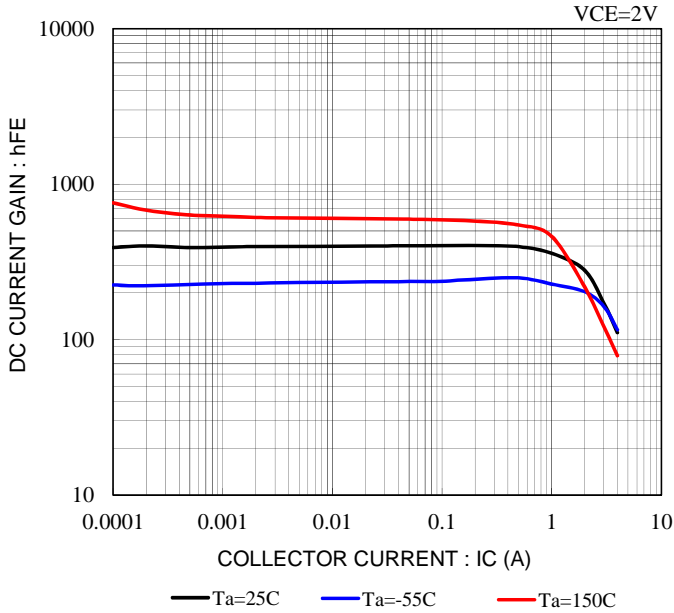


Fig.1 DC CURRENT GAIN VS.COLLECTOR CURRENT

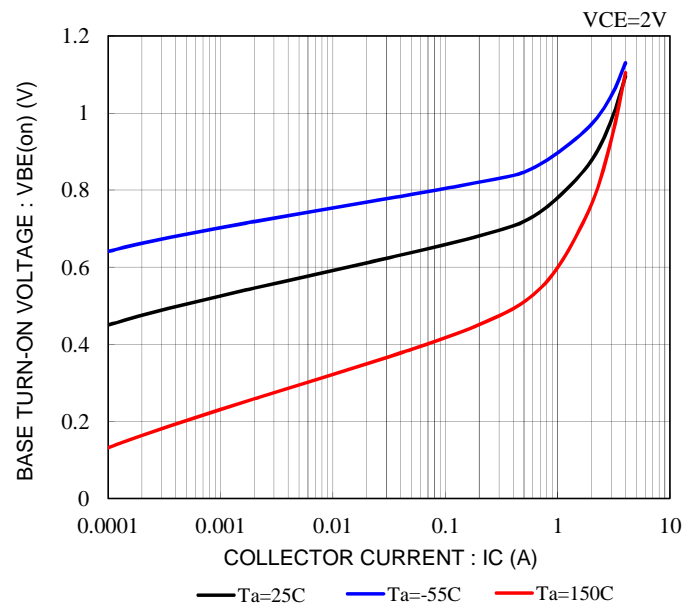


Fig.2 BASE-EMITTER TURN-ON VOLTAGE VS.COLLECTOR CURRENT

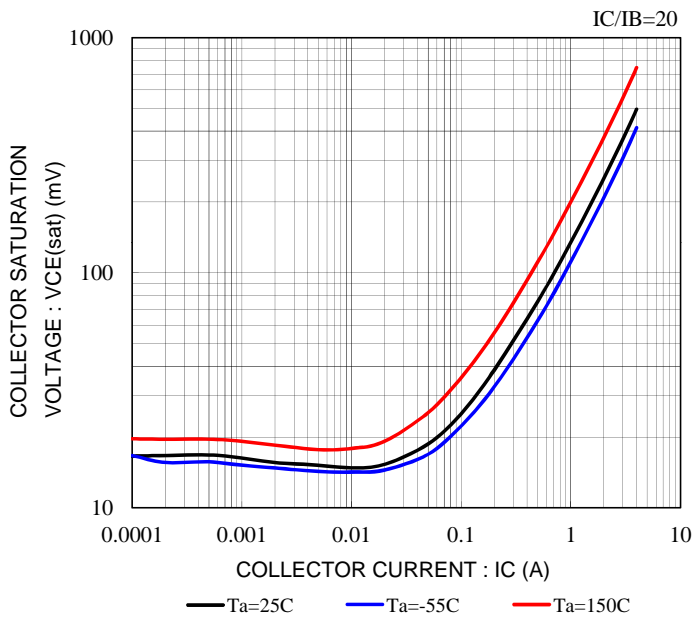


Fig.3 COLLECTOR-EMITTER SATURATION VOLTAGE VS.COLLECTOR CURRENT

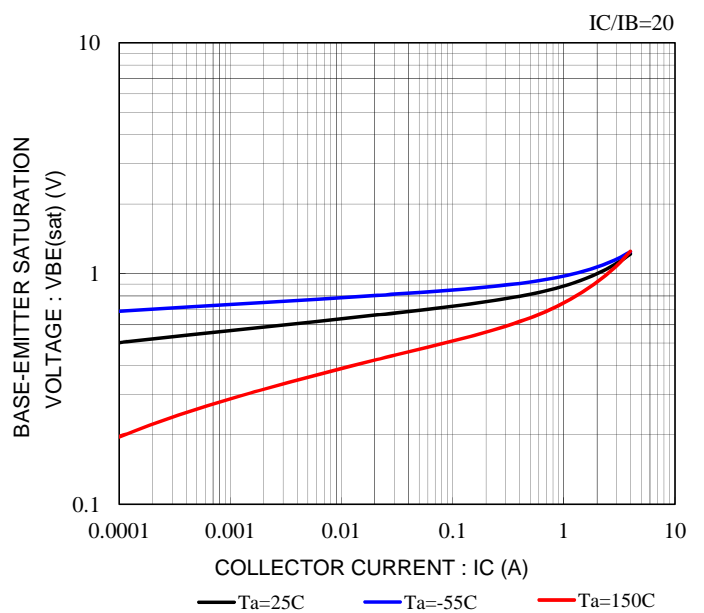


Fig.4 BASE-EMITTER SATURATION VOLTAGE VS.COLLECTOR CURRENT

LBSS4240LT1G,S-LBSS4240LT1G

ELECTRICAL CHARACTERISTIC CURVES (Ta = 25°C)

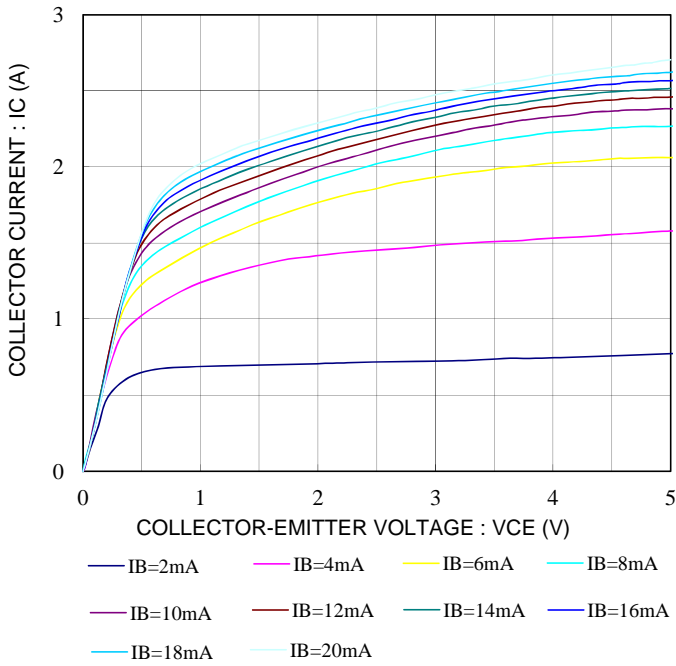


Fig.5 COLLECTOR CURRENT VS.COLLECTOR-EMITTER SATURATION VOLTAGE

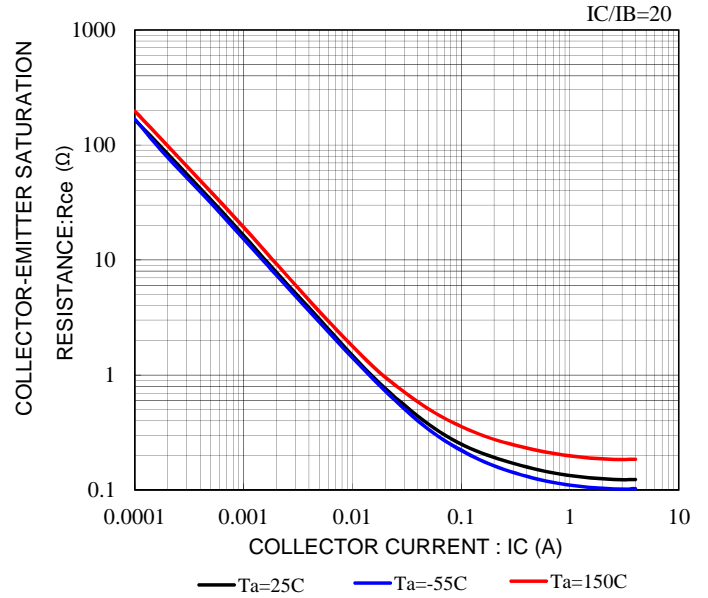


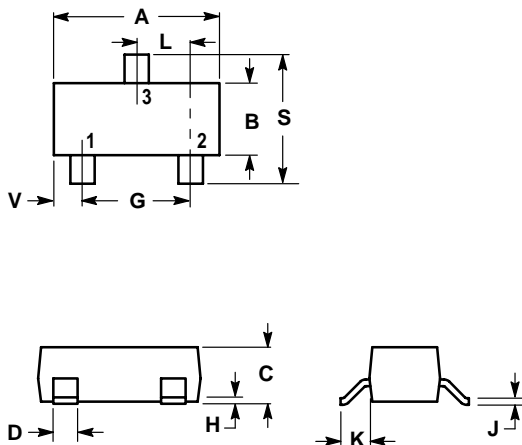
Fig.6 COLLECTOR-EMITTER SATURATION RESISTANCE VS.COLLECTOR CURRENT

LBSS4240LT1G,S-LBSS4240LT1G

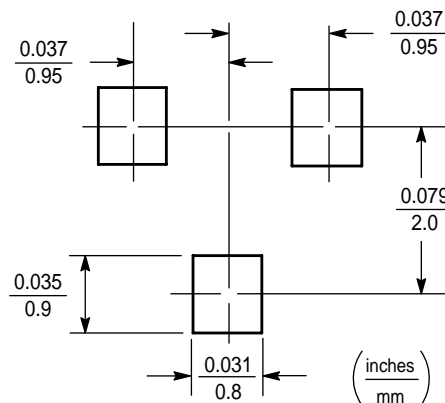
SOT-23

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M,1982
2. CONTROLLING DIMENSION: INCH.



| DIM | INCHES | | MILLIMETERS | |
|-----|--------|--------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.1102 | 0.1197 | 2.80 | 3.04 |
| B | 0.0472 | 0.0551 | 1.20 | 1.40 |
| C | 0.0350 | 0.0440 | 0.89 | 1.11 |
| D | 0.0150 | 0.0200 | 0.37 | 0.50 |
| G | 0.0701 | 0.0807 | 1.78 | 2.04 |
| H | 0.0005 | 0.0040 | 0.013 | 0.100 |
| J | 0.0034 | 0.0070 | 0.085 | 0.177 |
| K | 0.0140 | 0.0285 | 0.35 | 0.69 |
| L | 0.0350 | 0.0401 | 0.89 | 1.02 |
| S | 0.0830 | 0.1039 | 2.10 | 2.64 |
| V | 0.0177 | 0.0236 | 0.45 | 0.60 |



X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Bipolar Transistors - BJT category](#):

Click to view products by [Leshan manufacturer](#):

Other Similar products are found below :

[619691C](#) [MCH4017-TL-H](#) [MMBT-2369-TR](#) [BC546/116](#) [BC557/116](#) [BSW67A](#) [NJVMJD148T4G](#) [NTE123AP-10](#) [NTE153MCP](#) [NTE16](#)
[NTE195A](#) [NTE92](#) [C4460](#) [2N4401-A](#) [2N6728](#) [2SA1419T-TD-H](#) [2SA2126-E](#) [2SB1204S-TL-E](#) [2SC2712S-GR,LF](#) [2SC5488A-TL-H](#)
[2SD2150T100R](#) [SP000011176](#) [2N2907A](#) [2N3904-NS](#) [2N5769](#) [2SC2412KT146S](#) [2SD1816S-TL-E](#) [CPH6501-TL-E](#) [MCH4021-TL-E](#)
[MJE340](#) [US6T6TR](#) [NJL0281DG](#) [732314D](#) [CPH3121-TL-E](#) [CPH6021-TL-H](#) [873787E](#) [IMZ2AT108](#) [UMX21NTR](#) [MCH6102-TL-E](#)
[NJL0302DG](#) [2N3583](#) [30A02MH-TL-E](#) [NSV40301MZ4T1G](#) [NTE13](#) [NTE26](#) [NTE282](#) [NTE323](#) [NTE350](#) [NTE81](#) [STX83003-AP](#)