



# S8050LT1

# PLASTIC-ENCAPSULATE TRANSISTORS

S8050LT1 TRANSISTOR ( NPN )

SOT-23

## FEATURES

Power dissipation

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

Collector current

$$I_{CM} : 0.5 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO} : 40 \text{ V}$$



1. BASE

2. EMITTER

3. COLLECTOR

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

| Parameter                            | Symbol        | Test conditions   | MIN | TYP | MAX | UNIT          |
|--------------------------------------|---------------|---|-----|-----|-----|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=100 \mu\text{A}, I_E=0$                            | 40  |     |     | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=0.1\text{mA}, I_B=0$                               | 25  |     |     | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=100 \mu\text{A}, I_C=0$                            | 5   |     |     | V             |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=40\text{V}, I_E=0$                              |     |     | 0.1 | $\mu\text{A}$ |
| Collector cut-off current            | $I_{CEO}$     | $V_{CB}=20\text{V}, I_E=0$                              |     |     | 0.1 | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}=5\text{V}, I_C=0$                               |     |     | 0.1 | $\mu\text{A}$ |
| DC current gain(note)                | $H_{FE(1)}$   | $V_{CE}=1\text{V}, I_C=50\text{mA}$                     | 120 |     | 350 |               |
|                                      | $H_{FE(2)}$   | $V_{CE}=1\text{V}, I_C=500\text{mA}$                    | 50  |     |     |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=500\text{mA}, I_B=50\text{mA}$                     |     |     | 0.6 | V             |
| Base-emitter saturation voltage      | $V_{CE(sat)}$ | $I_C=500\text{mA}, I_B=50\text{mA}$                     |     |     | 1.2 | V             |
| Base-emitter voltage                 | $V_{BE}$      | $I_E=100\text{mA}$                                      |     |     | 1.4 |               |
| Transition frequency                 | $f_T$         | $V_{CE}=6\text{V}, I_C=20\text{mA}$<br>$f=30\text{MHz}$ | 150 |     |     | MHz           |

## CLASSIFICATION OF $H_{FE(1)}$

| Rank  | L       | H       |
|-------|---------|---------|
| Range | 100-200 | 200-350 |

DEVICE MARKING : S8050LT1=J3Y