

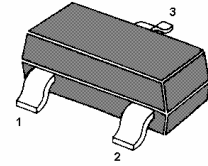
PBSS4240

40V; 2A NPN Low $V_{CE(sat)}$ (BISS) Transistor

SOT-23

FEATURES

- Low collector-emitter saturation voltage
- High current capability
- Improved device reliability due to reduced heat generation.



1.BASE 2.EMITTER 3.COLLECTOR

APPLICATIONS

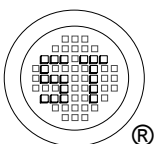
- Supply line switching circuits
- Battery management applications
- DC/DC converter applications
- Strobe flash units
- Heavy duty battery powered equipment (motor and lamp drivers).

Absolute Maximum Ratings ($T_a = 25\text{ }^\circ\text{C}$)

| | Symbol | Value | Unit |
|--|---------------|-----------------------------------|------------------|
| Collector Base Voltage | V_{CBO} | 40 | V |
| Collector Emitter Voltage | V_{CEO} | 40 | V |
| Emitter Base Voltage | V_{EBO} | 5 | V |
| Collector Current (DC) | I_C | 2 | A |
| Peak Collector Current | I_{CM} | 3 | A |
| Peak Base Current | I_{BM} | 300 | mA |
| Total Power Dissipation | P_{tot} | $T_{amb} \leq 25^\circ\text{C}^1$ | 200 |
| | | $T_{amb} \leq 25^\circ\text{C}^2$ | 480 |
| Junction Temperature | T_J | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_S | -65 to +150 | $^\circ\text{C}$ |
| Thermal Resistance From Junction to Ambient | $R_{th\ j-a}$ | In free air ¹⁾ | 417 |
| | | In free air ²⁾ | 260 |
| Operating Ambient Temperature | T_{amb} | -65 to +150 | $^\circ\text{C}$ |

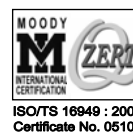
¹⁾ Device mounted on a printed-circuit board; single sided copper; tinplated and standard footprint.

²⁾ Device mounted on a printed-circuit board; single sided copper; tinplated; mounting pad for collector 1cm².



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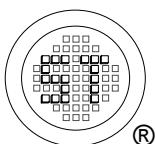


Dated : 20/10/2005

PBSS4240

Characteristics at $T_{amb}=25\text{ }^{\circ}\text{C}$

| | Symbol | Min. | Typ. | Max. | Unit |
|---|---------------|------|------|------|---------------|
| DC Current Gain | | | | | |
| at $V_{CE}=2\text{V}$, $I_C=100\text{mA}$ | h_{FE} | 350 | - | - | |
| at $V_{CE}=2\text{V}$, $I_C=500\text{mA}$ | h_{FE} | 300 | - | - | - |
| at $V_{CE}=2\text{V}$, $I_C=1\text{A}$ | h_{FE} | 250 | - | - | |
| at $V_{CE}=2\text{V}$, $I_C=2\text{A}$ | h_{FE} | 80 | - | - | |
| Collector-Base Cutoff Current | | | | | |
| at $V_{CB}=30\text{V}$ | I_{CBO} | - | - | 100 | nA |
| at $V_{CB}=30\text{V}$, $T_{amb}=150\text{ }^{\circ}\text{C}$ | | - | - | 50 | μA |
| Emitter-Base Cutoff Current | | | | | |
| at $V_{EB}=4\text{V}$ | I_{EBO} | - | - | 100 | nA |
| Collector-Emitter Saturation Voltage | | | | | |
| at $I_C=100\text{mA}$, $I_B=1\text{mA}$ | $V_{CE(sat)}$ | - | - | 70 | mV |
| at $I_C=500\text{mA}$, $I_B=50\text{mA}$ | | - | - | 100 | |
| at $I_C=750\text{mA}$, $I_B=15\text{mA}$ | | - | - | 180 | |
| at $I_C=1\text{A}$, $I_B=50\text{mA}$ | | - | - | 180 | |
| at $I_C=2\text{A}$, $I_B=200\text{mA}$ | | - | - | 320 | |
| Equivalent on-Resistance | | | | | |
| at $I_C=500\text{mA}$, $I_B=50\text{mA}$ | $R_{CE(sat)}$ | - | 140 | <200 | m Ω |
| Base-Emitter Saturation Voltage | | | | | |
| at $I_C=2\text{A}$, $I_B=200\text{mA}$ | $V_{BE(sat)}$ | - | - | 1.1 | V |
| Base-Emitter Turn-on Voltage | | | | | |
| at $V_{CE}=2\text{V}$, $I_C=100\text{mA}$ | $V_{BE(on)}$ | - | - | 0.75 | V |
| Transition Frequency | | | | | |
| at $V_{CE}=10\text{V}$, $I_C=100\text{mA}$, $f=100\text{MHz}$ | f_T | 100 | 230 | - | MHz |
| Collector Capacitance | | | | | |
| at $V_{CB}=10\text{V}$, $f=1\text{MHz}$ | C_C | - | 15 | 20 | pF |



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ISO/TS 16949 : 2002
Certificate No. 05103



ISO 14001:2004
Certificate No. 7116



ISO 9001:2000
Certificate No. 0506098

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