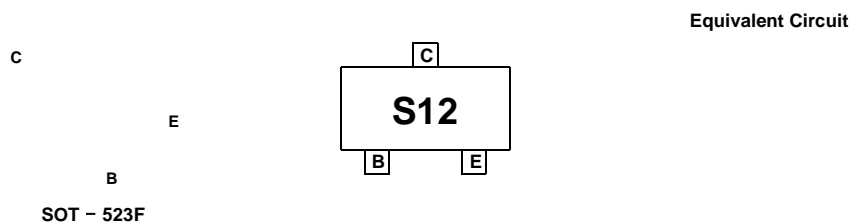


FJY3012R

NPN Epitaxial Silicon Transistor

Features

- Switching circuit, Inverter, Interface circuit, Driver Circuit
- Built in bias Resistor (R=47KΩ)
- Complement to FJY4012R



Absolute Maximum Ratings* $T_a = 25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Value | Units |
|-----------|---|---------|------------------|
| V_{CBO} | Collector-Base Voltage | 40 | V |
| V_{CEO} | Collector-Emitter Voltage | 40 | V |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current | 100 | mA |
| T_{STG} | Storage Temperature Range | -55~150 | $^\circ\text{C}$ |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| P_C | Collector Power Dissipation, by $R_{\theta JA}$ | 200 | mW |

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

Thermal Characteristics* $T_a = 25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Max | Units |
|-----------------|---|-----|---------------------------|
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 600 | $^\circ\text{C}/\text{W}$ |

* Minimum land pad size.

Electrical Characteristics* $T_C = 25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Test Condition | MIN | Typ | MAX | Units |
|---------------|--------------------------------------|---|-----|-----|-----|---------------|
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage | $I_C = 100 \mu\text{A}, I_E = 0$ | 40 | | | V |
| $V_{(BR)CEO}$ | Collector-Base Breakdown Voltage | $I_C = 1 \text{mA}, I_B = 0$ | 40 | | | V |
| I_{CBO} | Collector-Cutoff Current | $V_{CB} = 30 \text{V}, I_E = 0$ | | | 0.1 | μA |
| h_{FE} | DC Current Gain | $V_{CE} = 5 \text{V}, I_C = 1 \text{mA}$ | 100 | | 600 | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = 10 \text{mA}, I_B = 1 \text{mA}$ | | | 0.3 | V |
| f_r | Current Gain - Bandwidth Product | $V_{CE} = 10 \text{V}, I_C = 5 \text{mA}$ | | 250 | | MHz |
| C_{cb} | Output Capacitance | $V_{CB} = 10 \text{V}, I_E = 0, f = 1.0 \text{MHz}$ | | 3.7 | | pF |
| R | Input Resistor | | 32 | 47 | 62 | KΩ |

* Pulse Test: $PW \leq 300 \mu\text{s}$, Duty Cycle $\leq 2\%$

Typical Performance Characteristics

Figure 1. DC current Gain

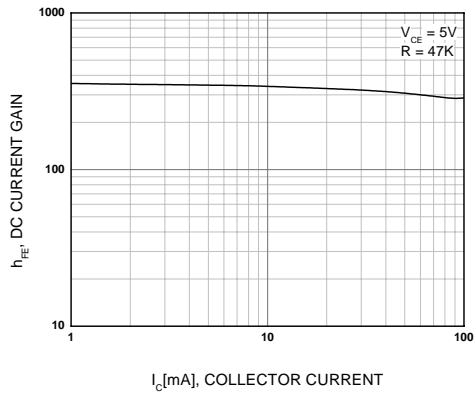


Figure 2. Collector-Emitter Saturation Voltage

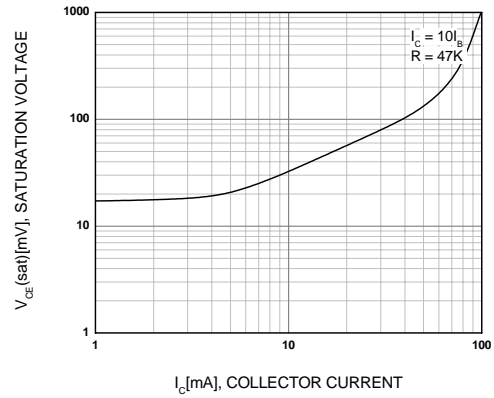
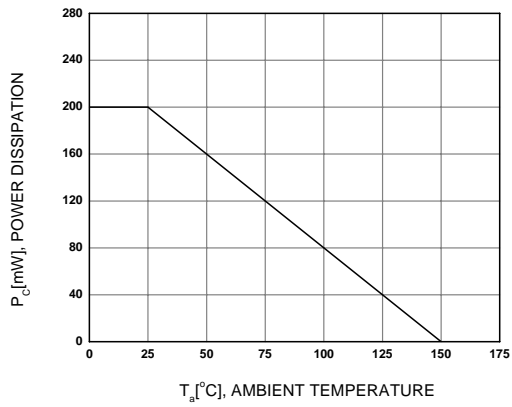


Figure 3. Power Derating





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