

INCHANGE Semiconductor

isc Product Specification

isc Silicon PNP Power Transistor

2SA1012

DESCRIPTION

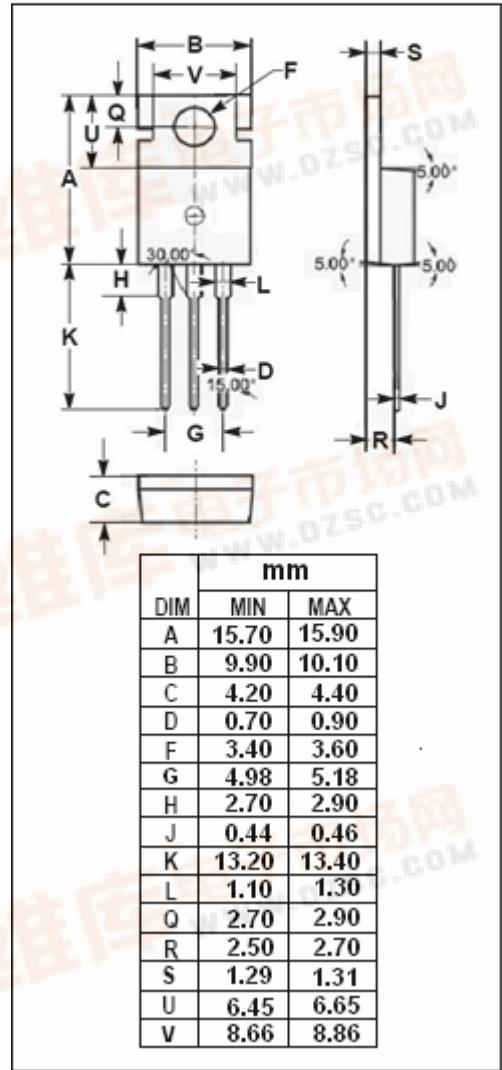
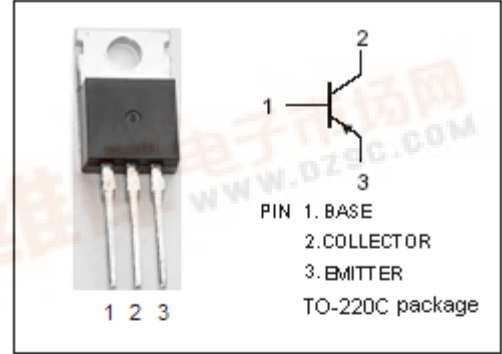
- Low Collector Saturation Voltage
: $V_{CE(sat)} = -0.4(V)(Max) @ I_C = -3A$
- High Switching Speed
- Complement to Type 2SC2562

APPLICATIONS

- Designed for high current switching applications.

ABSOLUTE MAXIMUM RATINGS($T_a=25^{\circ}C$)

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|--|---------|-------------|
| V_{CBO} | Collector-Base Voltage | -60 | V |
| V_{CEO} | Collector-Emitter Voltage | -50 | V |
| V_{EBO} | Emitter-Base Voltage | -5 | V |
| I_C | Collector Current-Continuous | -5 | A |
| P_C | Total Power Dissipation @ $T_C=25^{\circ}C$ | 25 | W |
| T_J | Junction Temperature | 150 | $^{\circ}C$ |
| T_{stg} | Storage Temperature Range | -55~150 | $^{\circ}C$ |



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ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---------------|--------------------------------------|---|-----|------|------|---------------|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C = -10\text{mA}$; $I_B = 0$ | -50 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = -3\text{A}$; $I_B = -0.15\text{A}$ | | | -0.4 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C = -3\text{A}$; $I_B = -0.15\text{A}$ | | | -1.2 | V |
| I_{CBO} | Collector Cutoff Current | $V_{CB} = -50\text{V}$; $I_E = 0$ | | | -1 | μA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB} = -5\text{V}$; $I_C = 0$ | | | -1 | μA |
| h_{FE-1} | DC Current Gain | $I_C = -1\text{A}$; $V_{CE} = -1\text{V}$ | 70 | | 240 | |
| h_{FE-2} | DC Current Gain | $I_C = -3\text{A}$; $V_{CE} = -1\text{V}$ | 30 | | | |
| f_T | Current-Gain—Bandwidth Product | $I_C = -1\text{A}$; $V_{CE} = -4\text{V}$ | | 60 | | MHz |
| C_{OB} | Output Capacitance | $I_E = 0$; $V_{CB} = -10\text{V}$; $f_{test} = 1\text{MHz}$ | | 170 | | pF |

Switching Times

| | | | | | | |
|-----------|--------------|--|--|-----|--|---------------|
| t_{on} | Turn-on Time | $I_C = -3\text{A}$, $R_L = 10\Omega$, $I_{B1} = -I_{B2} = -0.15\text{A}$, $V_{CC} = -30\text{V}$ | | 0.1 | | μs |
| t_{stg} | Storage Time | | | 1.0 | | μs |
| t_f | Fall Time | | | 0.1 | | μs |

◆ h_{FE-1} Classifications

| | |
|--------|---------|
| O | Y |
| 70-140 | 120-240 |