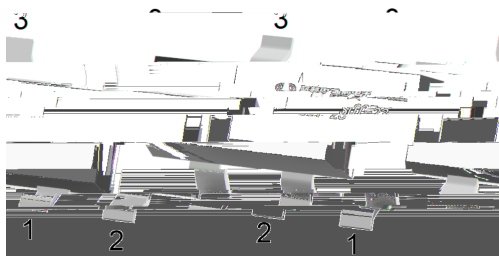
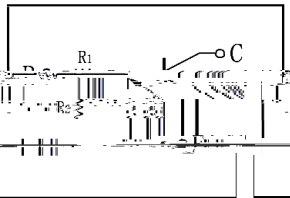


JF K\$) * GE G Silicon PNP Digital transistor in a SOT-23 Plastic Package.

With built-in bias resistors, simplify circuit design, reduce a quantity of parts and manufacturing process, HF Product.

Switching, inverter circuit, interface circuit and driver circuit applications.

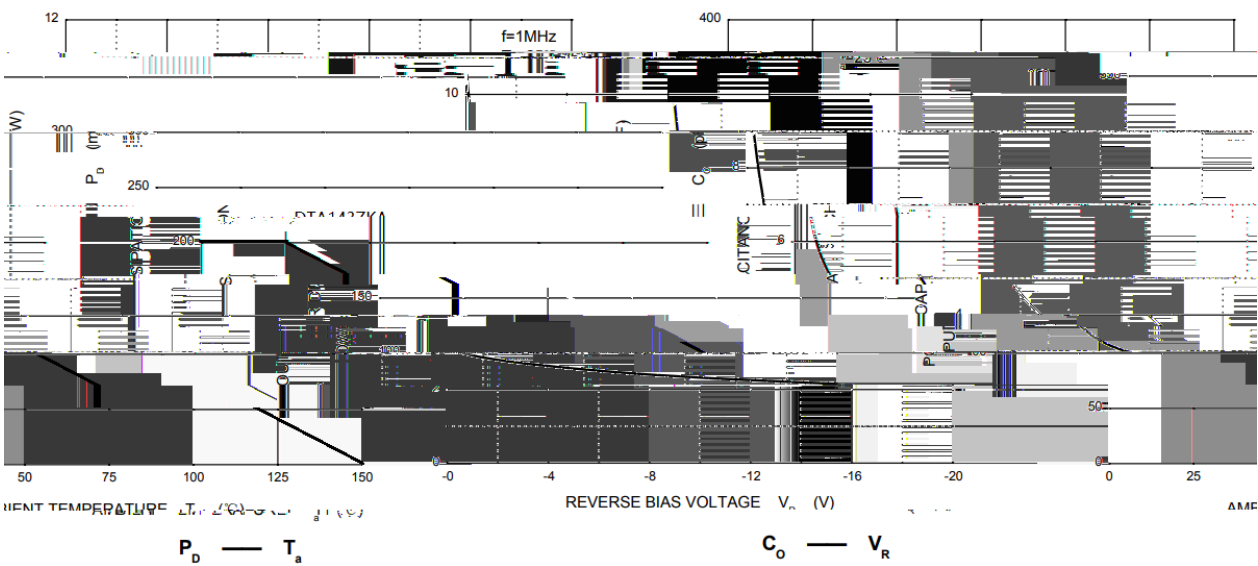
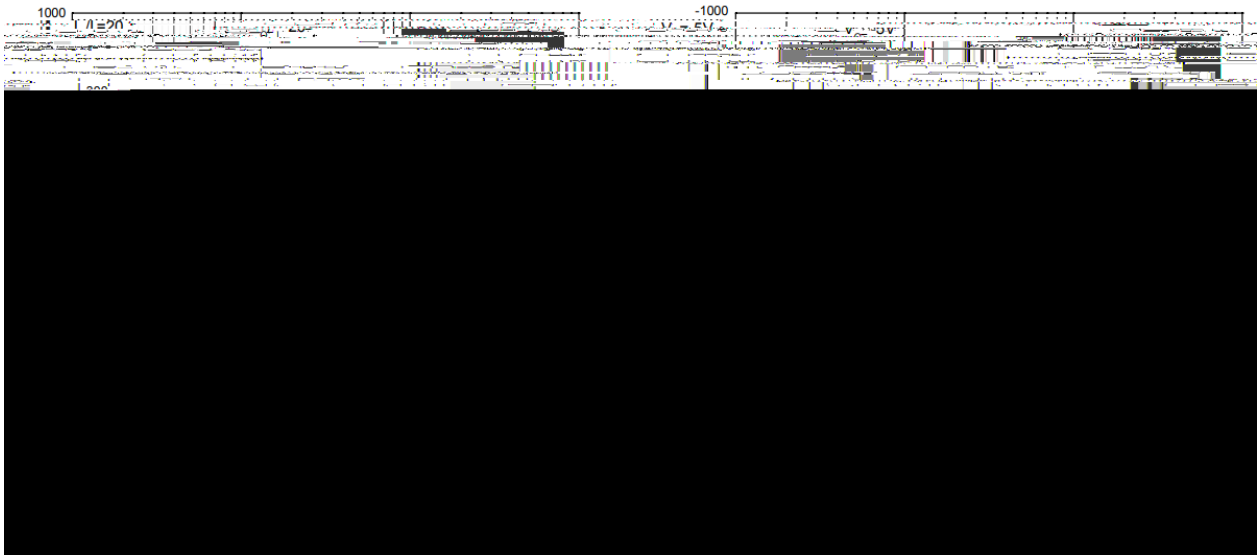
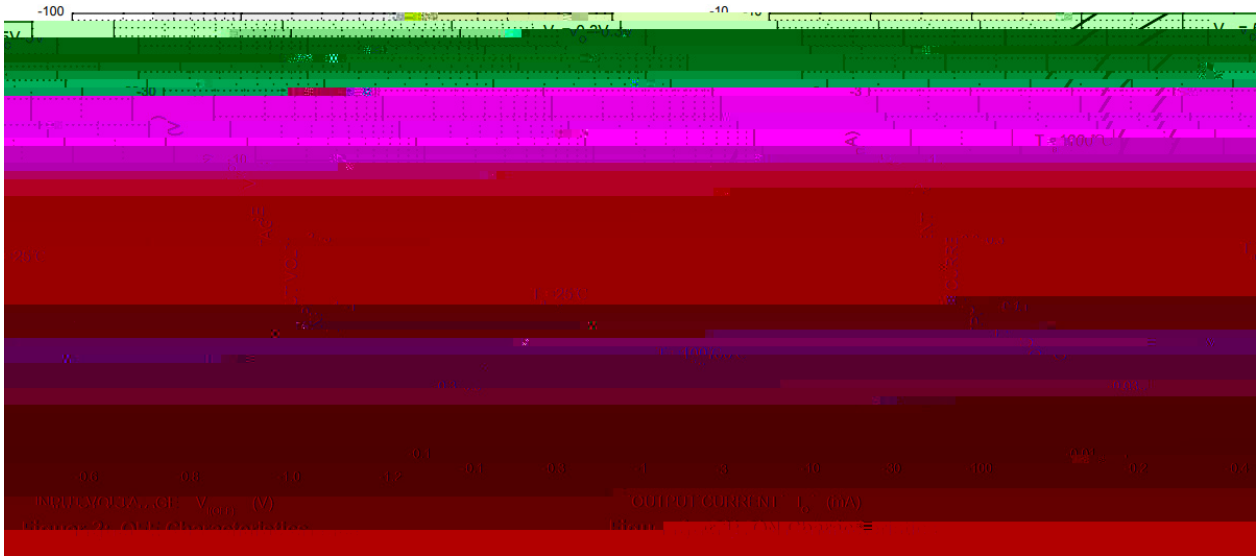


PIN 1 Base PIN 2 Emitter PIN 3 Collector

| | |
|---------|------|
| Marking | HE13 |
|---------|------|

| Parameter | Symbol | Rating | Unit |
|---------------------------|-----------|---------|------|
| Output Voltage | V_{CC} | -50 | V |
| Input Voltage | V_{IN} | -30 | V |
| | | 5.0 | V |
| Output Current | I_o | -100 | mA |
| Power Dissipation | P_C | 200 | mW |
| Junction Temperature | T_j | 150 | |
| Storage Temperature Range | T_{stg} | -55 150 | |

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|------------------------|--------------|---|------|------|------|---------|
| Input Voltage | $V_{I(off)}$ | $V_{CC}=-5.0V$ $I_o=-100\mu A$ | -0.5 | | | V |
| | $V_{I(on)}$ | $V_o=-0.3V$ $I_o=-5.0mA$ | | | -1.3 | V |
| Output Voltage | $V_{O(on)}$ | $I_o=-5.0mA$ $I_I=-0.25mA$ | | -0.1 | -0.3 | V |
| Input Current | I_I | $V_I=-5.0V$ | | | -1.8 | mA |
| Output Cut-off Current | $I_{O(off)}$ | $V_{CC}=-50V$ $V_I=0V$ | | | -0.5 | μA |
| DC Current Gain | G_I | $V_o=-5.0V$ $I_o=-10mA$ | 80 | | | |
| Transition Frequency | f_T | $V_{CE}=-10V$ $I_E=5.0mA$ $f=100MHz$ | | 250 | | MHz |
| Resistance1 | R_1 | | 3.29 | 4.7 | 6.11 | K |
| Resistance Ratio | R_2/R_1 | | 8.0 | 10 | 12 | |



Temperature Profile for IR Reflow Soldering(Pb-Free)

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| |
| |

Note:

1 150 180 60 90sec; 1.Preheating:150~180 , Time:60~90sec.7()-5[7180-