

DTC143XKA

Rev.1 Jun.-2025

/ Descriptions

SOT-23

NPN

Silicon NPN Digital transistor in a SOT-23 Plastic Package.

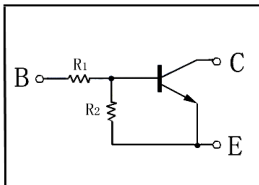
/ Features

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

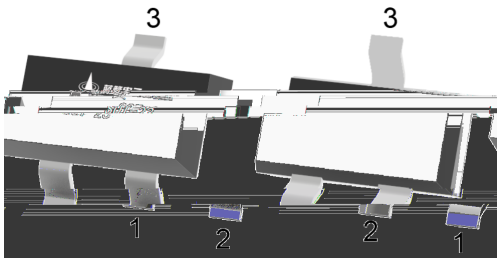
/ Applications

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

/ Equivalent Circuit



/ Pinning



PIN 1 Base PIN 2 Emitter PIN 3 Collector

/ hFE Classifications & Marking

| | |
|---------|-----|
| Marking | H43 |
|---------|-----|

/ Absolute Maximum Ratings(Ta=25)

| Parameter | Symbol | Rating | Unit |
|---------------------------|------------------|---------|------|
| Output Voltage | V _{CC} | 50 | V |
| Input Voltage | V _{In} | 20 | V |
| | | -7.0 | 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 | |

/ Electrical Characteristics(Ta=25)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|------------------------|--------------------------------|--|------|-----|------|------|
| Input Voltage | V _{I(off)} | V _{CC} =5.0V I _O =100μA | 0.3 | | | V |
| | V _{I(on)} | V _O =0.3V I _O =20mA | | | 2.5 | V |
| Output Voltage | V _{O(on)} | I _O =10mA I _I =0.5mA | | 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 | 30 | | | |
| Transition Frequency | f _T | V _{CE} =10V I _C =5.0mA f=100MHz | | 250 | | MHz |
| Resistance1 | R ₁ | | 3.29 | 4.7 | 6.11 | KΩ |
| Resistance Ratio | R ₂ /R ₁ | | 1.7 | 2.1 | 2.6 | |

/ Electrical Characteristic Curve

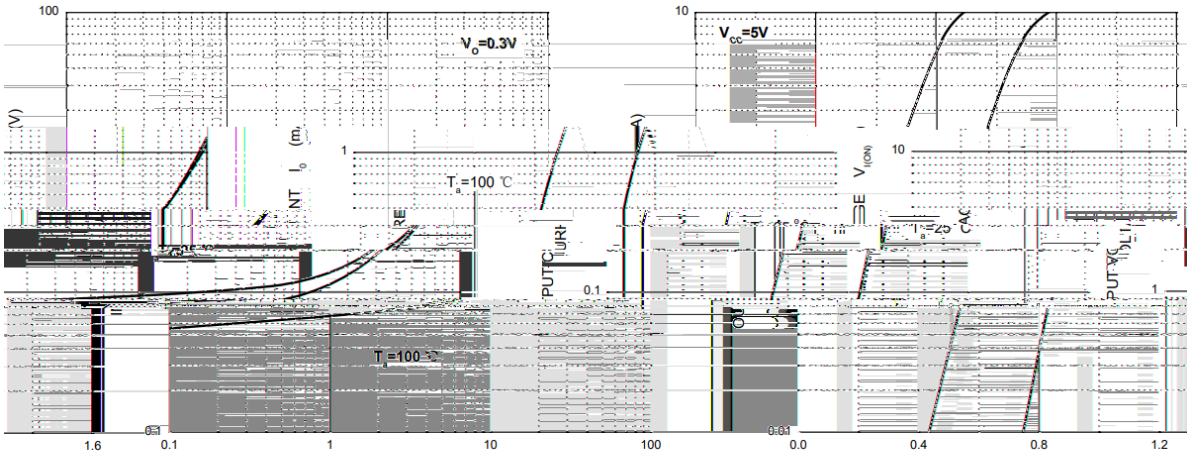


Figure 1: ON Characteristics

Figure 2: OFF Characteristics

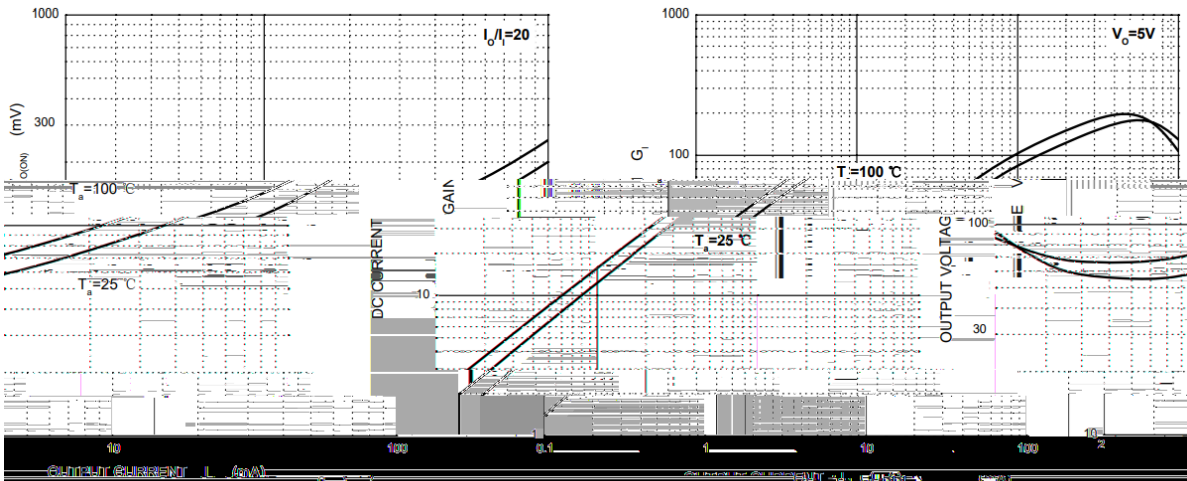


Figure 3: $V_{o(ON)}$ vs I_o

Figure 4: G_i vs I_o

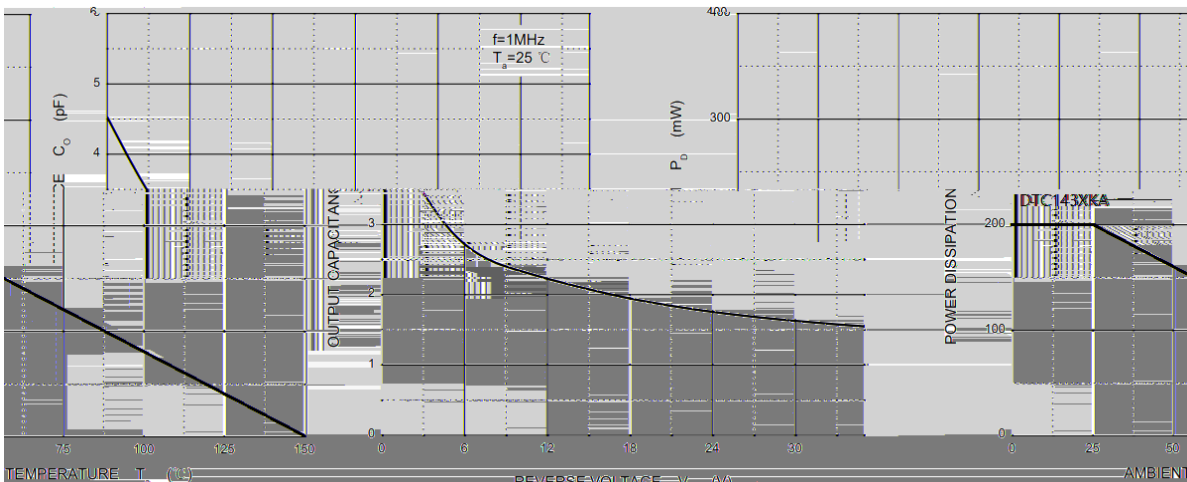


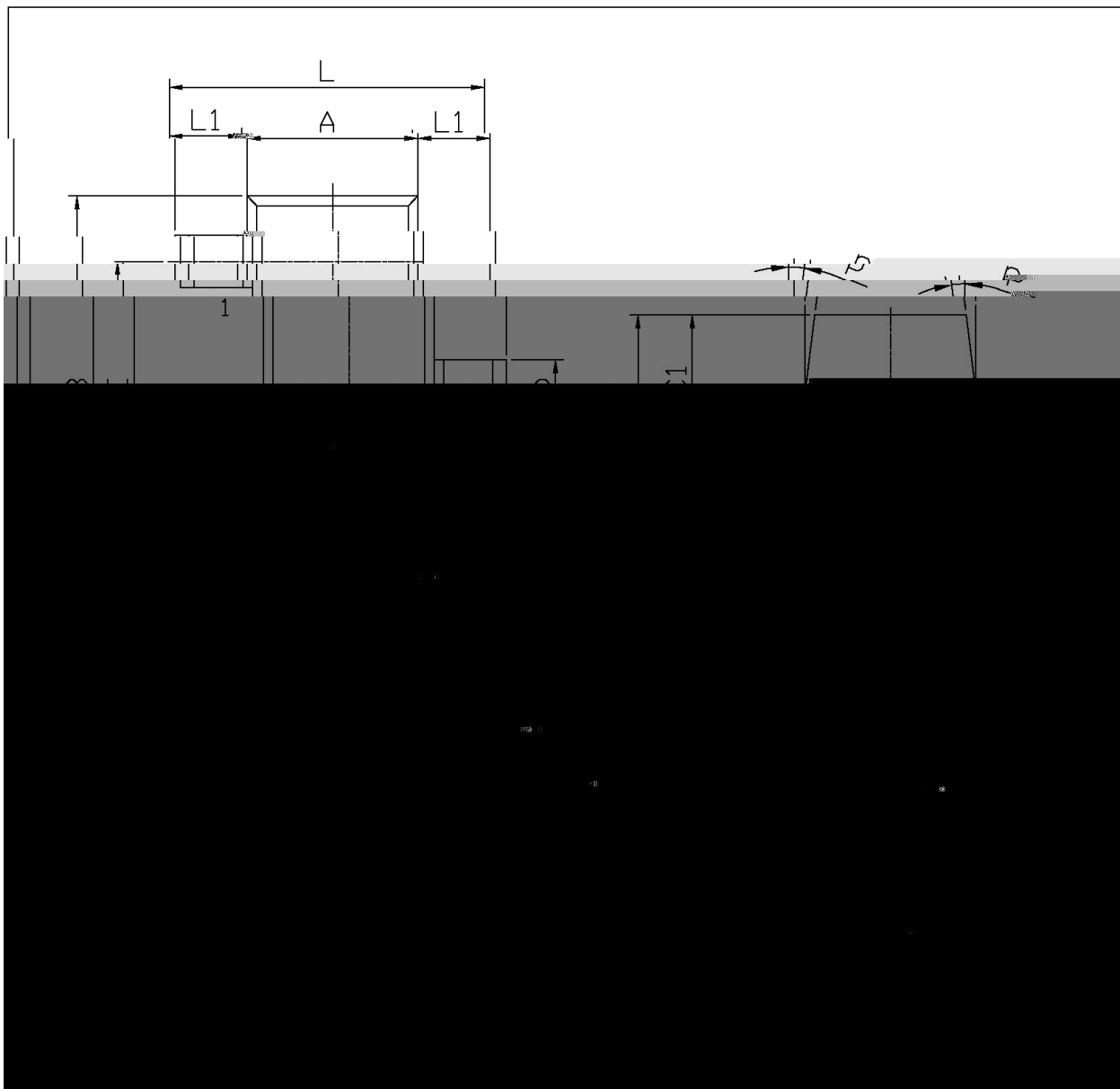
Figure 6: P_D vs T_a

Figure 5: C_o vs V_R

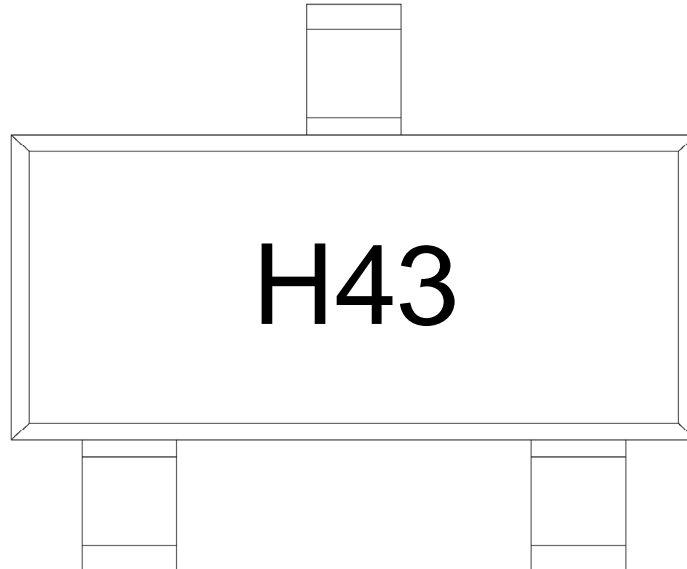
/ Package Dimensions

SOT-23

单位: mm



/ Marking Instructions



H

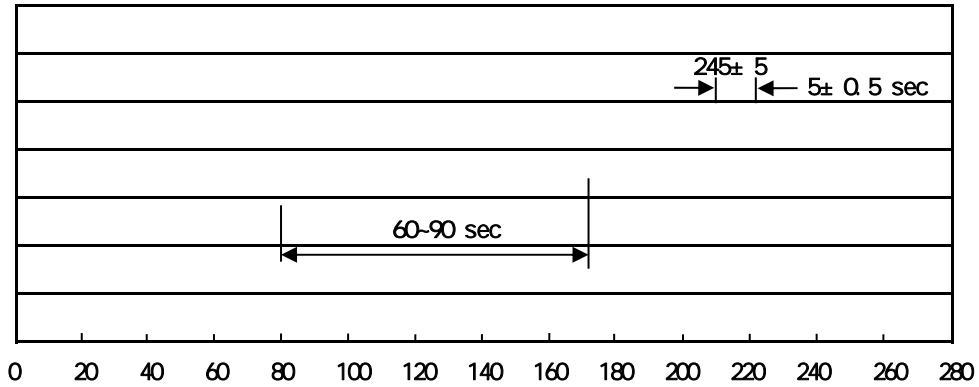
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Note:

H Company Code

43 Product Type Code

() / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- | | | | | | |
|---|-------|-----|-------|----------|---|
| 1 | 150 | 180 | 60 | 90sec; | 1.Preheating:150~180 , Time:60~90sec. |
| 2 | 245±5 | | 5±0.5 | sec; | 2.Peak Temp.:245±5 , Duration:5±0.5sec. |
| 3 | | | 2 | 10 /sec. | 3. Cooling Speed: 2~10 /sec. |

/ Resistance to Soldering Heat Test Conditions

260±5 10±1 sec. Temp.:260±5 Time:10±1 sec

/ Packaging SPEC.

/ REEL

| Package Type | Units | | | | | Dimension (unit mm ³) | | |
|--------------|------------|-----------------|-----------------|-----------------------|-----------------|-----------------------------------|-------------|-------------|
| | Units/Reel | Reels/Inner Box | Units/Inner Box | Inner Boxes/Outer Box | Units/Outer Box | Reel | Inner Box | Outer Box |
| SOT-23 | 3,000 | 10 | 30,000 | 6 | 180,000 | 7 x8 | 180x120x180 | 390x385x205 |

/ Notices