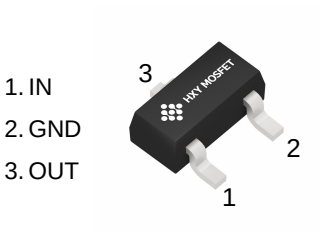
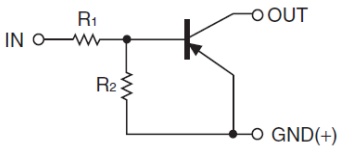
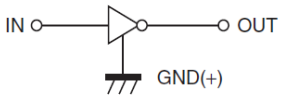
## Features

- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see equivalent circuit).
- The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input. They also have the advantage of almost completely eliminating parasitic effects.
- Only the on/off conditions need to be set for operation, making device design easy




**SOT-23**
**(TO-236-3(SOT-23-3))**




## Package Marking and Ordering Information

| Product ID | Pack | Marking | Qty(PCS) |
|---|---|---|---|
| HDTB143ECT116 | SOT-23 (TO-236-3(SOT-23-3)) | 13 | 3000 |

## Maxmim Ratings (Ta=25℃unless otherwise noted)

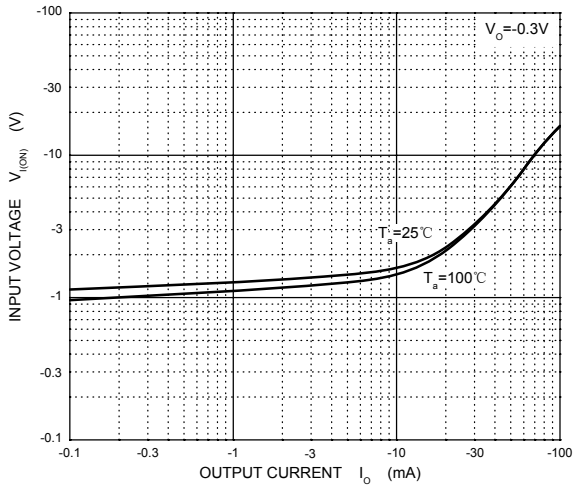
| Symbol | Parameter | Limits | Unit |
|---|---|---|---|
| $V_{CC}$ | Supply Voltage | -50 | V |
| $V_{IN}$ | Input Voltage | -30～+10 | V |
| $I_O$ | Output Current | -100 | mA |
| $P_D$ | Power Dissipation | 200 | mW |
| $T_J$,$T_{stg}$ | Operation Junction and Storage Temperature Range | -55～+150 | ℃ |

## Electrcal Charcteristics (Ta=25℃unless otherwise specified)

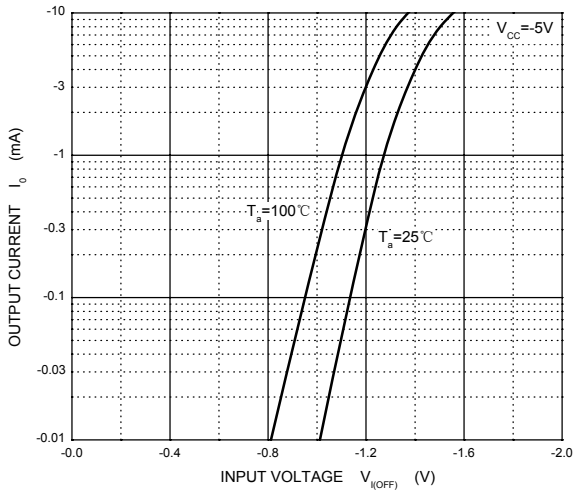
| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Input voltage | $V_{I(off)}$ | $V_{CC}$=-5V,$I_O$=-100μA | -0.5 | | | V |
| | $V_{I(on)}$ | $V_O$=-0.3V,$I_O$=-20 mA | | | -3 | V |
| Output voltage | $V_{O(on)}$ | $I_O$/$I_I$=-10mA/-0.5mA | | | -0.3 | V |
| Input current | $I_I$ | $V_I$=-5V | | | -1.8 | mA |
| Output current | $I_{O(off)}$ | $V_{CC}$=-50V,$V_I$=0 | | | -0.5 | μA |
| DC current gain | $G_I$ | $V_O$=-5V,$I_O$=-10mA | 30 | | | |
| Input resistance | $R_1$ | | 3.29 | 4.7 | 6.11 | kΩ |
| Resistance ratio | $R_2/R_1$ | | 0.8 | 1 | 1.2 | |
| Transition frequency | $f_T$ | $V_O$=-10V,$I_O$=-5mA,f=100MHz | | 250 | | MHz |

## Typical Characteristics

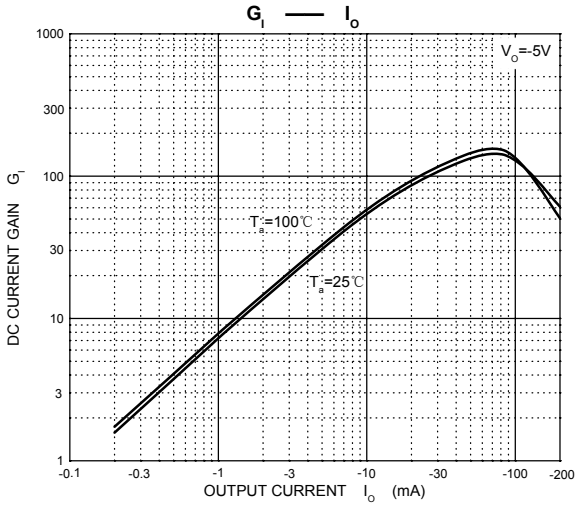
**ON Characteristics**



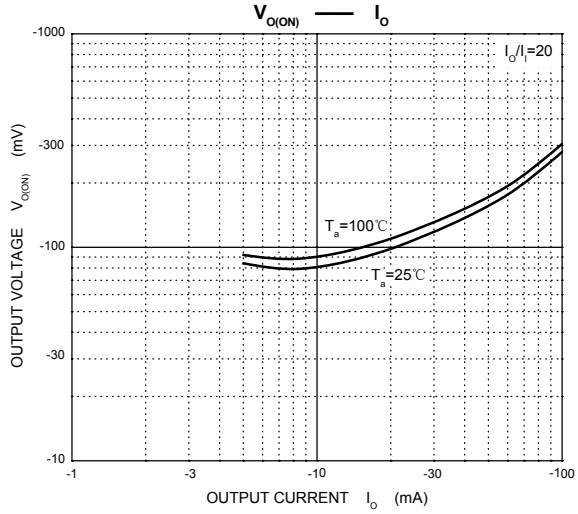

**OFF Characteristics**



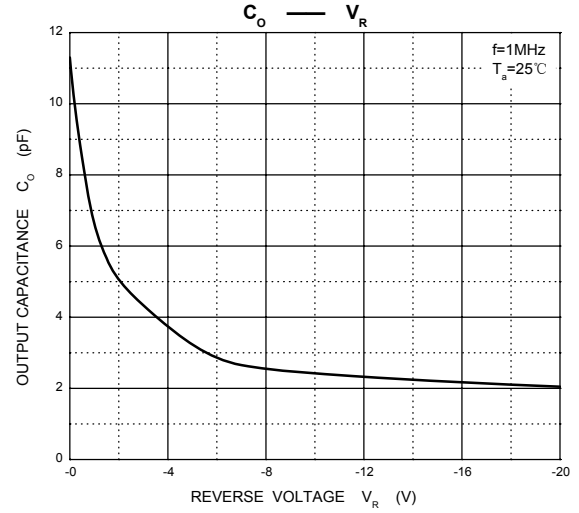

**$G_I$ — $I_O$**



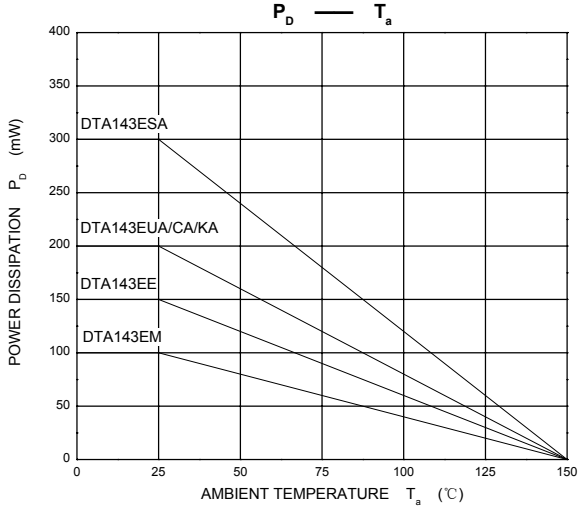

**$V_{O(ON)}$ — $I_O$**



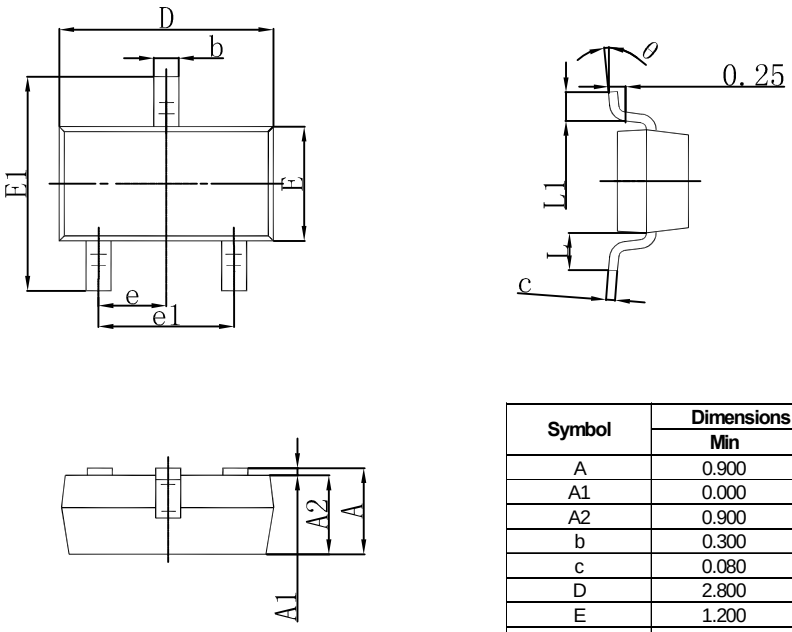

**$C_O$ — $V_R$**




**$P_D$ — $T_a$**

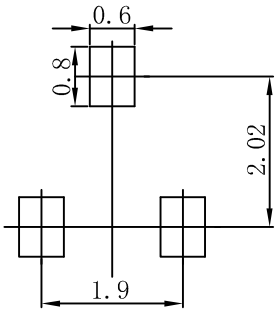


## SOT-23(TO-236-3(SOT-23-3)) Package Outline Dimensions




| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min | Max | Min | Max |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.950 TYP | | 0.037 TYP | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550 REF | | 0.022 REF | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |
| θ | 0° | 8° | 0° | 8° |

## SOT-23(TO-236-3(SOT-23-3)) Suggested Pad Layout




Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

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