

Digital transistors

●Features

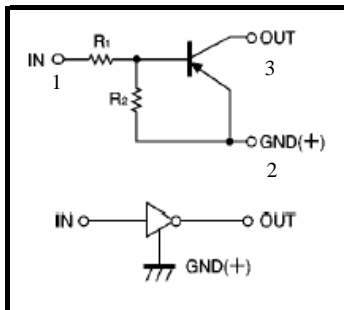
- 1) Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see equivalent circuit).
- 2) The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input. They also have the advantage of almost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

●Structure

PNP digital transistor
(Built-in resistor type)
Driver Marking

LDTB114ELT1G=F14

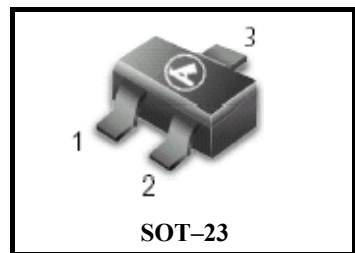
●Equivalent circuit



Ordering Information

| Device | Marking | Shipping |
|--------------|---------|-----------------|
| LDTB114ELT1G | F14 | 3000/Tape&Reel |
| LDTB114ELT3G | F14 | 10000/Tape&Reel |

LDTB114ELT1G



LDTB114ELT1G

●Absolute maximum ratings (Ta = 25°C)

| Parameter | Symbol | Limits(DTB114E□) | | Unit |
|----------------------|------------------|------------------|-----|------|
| | | K | S | |
| Supply voltage | V _{CC} | -50 | | V |
| Input voltage | V _{IN} | -40~+10 | | V |
| Output current | I _C | -500 | | mA |
| Power dissipation | P _d | 200 | 300 | mW |
| Junction temperature | T _j | 150 | | °C |
| Storage temperature | T _{stg} | -55~+150 | | °C |

●Electrical characteristics (Ta = 25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|----------------------|--------------------------------|------|------|-------|------|--|
| Input voltage | V _{I(off)} | — | — | -0.5 | V | V _{CC} = -5V, I _O = 100 μA |
| | V _{I(on)} | -3 | — | — | | V _O = -0.3V, I _O = -10mA |
| Output voltage | V _{O(on)} | — | -0.1 | -0.3 | V | I _O /I _I = -50mA/-2.5mA |
| Input current | I _I | — | — | -0.88 | mA | V _I = -5V |
| Output current | I _{O(off)} | — | — | -0.5 | μA | V _{CC} = -50V, V _I = 0V |
| DC current gain | G _I | 56 | — | — | — | V _O = -5V, I _O = -50mA |
| Input resistance | R _I | 7 | 10 | 13 | kΩ | — |
| Resistance ratio | R ₂ /R ₁ | 0.8 | 1 | 1.2 | — | — |
| Transition frequency | f _T | — | 200 | — | MHz | V _{CE} = -10V, I _E = 5mA, f = 100MHz * |

LDTB114ELT1G

●Electrical characteristic curves

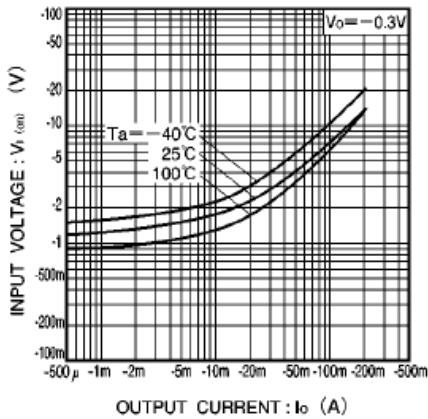


Fig.1 Input voltage vs. output current (ON characteristics)

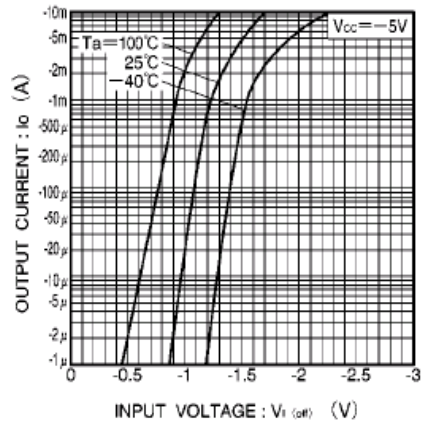


Fig.2 Output current vs. input voltage (OFF characteristics)

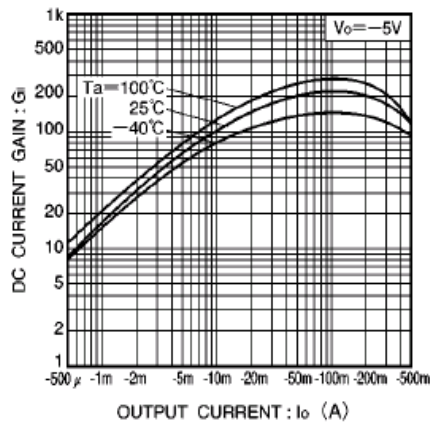


Fig.3 DC current gain vs. output current

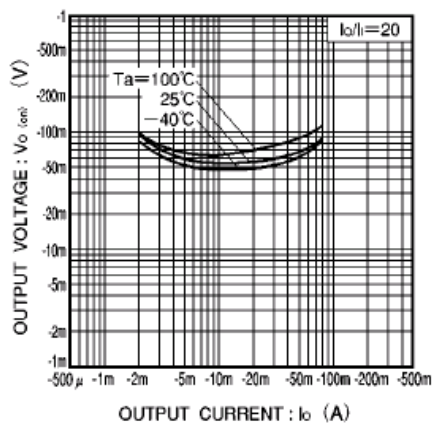


Fig.4 Output voltage vs. output current

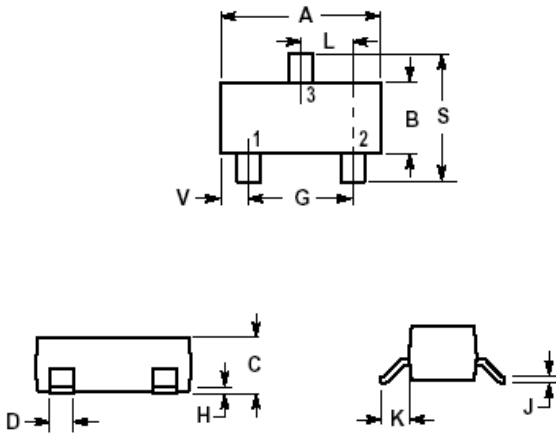
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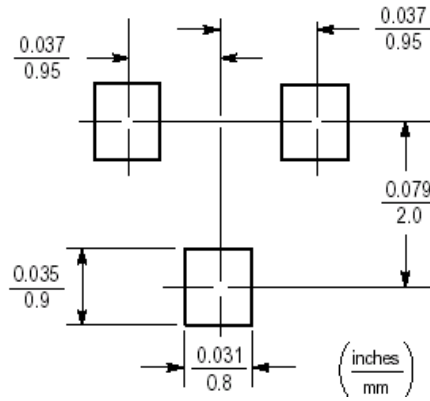
NOTES:

1.DIMENSIONING AND TOLERANCING PER ANSI Y14.5M,1982

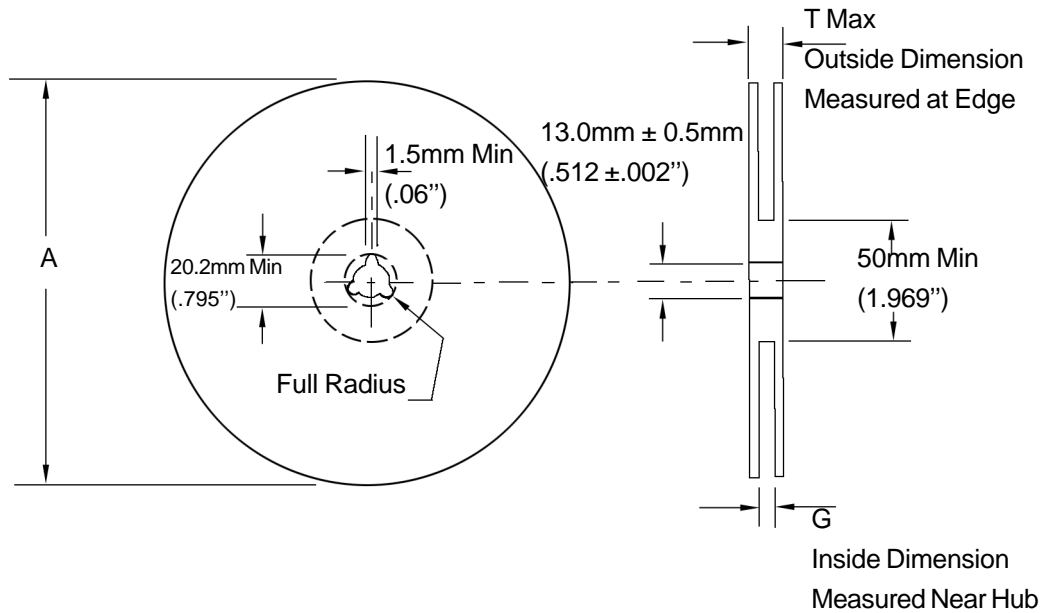
2.CONTROLLING DIMENSION:INCH



| DIM | INCHES | | MILLIMETERS | |
|-----|--------|--------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.1102 | 0.1197 | 2.80 | 3.04 |
| B | 0.0472 | 0.0551 | 1.20 | 1.40 |
| C | 0.0350 | 0.0440 | 0.89 | 1.11 |
| D | 0.0150 | 0.0200 | 0.37 | 0.50 |
| G | 0.0701 | 0.0807 | 1.78 | 2.04 |
| H | 0.0005 | 0.0040 | 0.013 | 0.100 |
| J | 0.0034 | 0.0070 | 0.085 | 0.177 |
| K | 0.0140 | 0.0285 | 0.35 | 0.69 |
| L | 0.0350 | 0.0401 | 0.89 | 1.02 |
| S | 0.0830 | 0.1039 | 2.10 | 2.64 |
| V | 0.0177 | 0.0236 | 0.45 | 0.60 |



EMBOSSED TAPE AND REEL DATA FOR DISCRETES



| Size | A Max | G | T Max |
|------|--------------------|--|------------------|
| 8 mm | 330mm (12.992") | 8.4mm+1.5mm, -0.0 (.33"+.059", -0.00) | 14.4mm (.56") |

Reel Dimensions

Metric Dimensions Govern — English are in parentheses for reference only

Storage Conditions

Temperature: 5 to 40 Deg.C (20 to 30 Deg. C is preferred)

Humidity: 30 to 80 RH (40 to 60 is preferred)

Recommended Period: One year after manufacturing

(This recommended period is for the soldering condition only. The characteristics and reliabilities of the products are not restricted to this limitation)

Shipment Specification

