

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

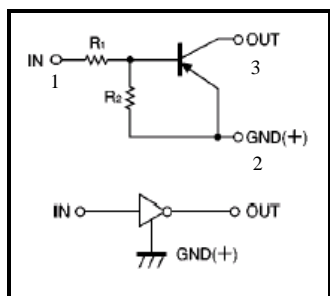
PNP digital transistor

(Built-in resistor type)

Driver Marking

LDTB114ELT1G=F14

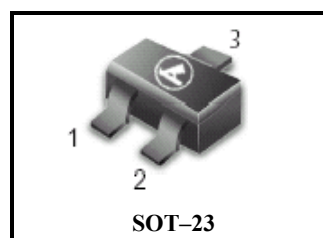
●Equivalent circuit



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

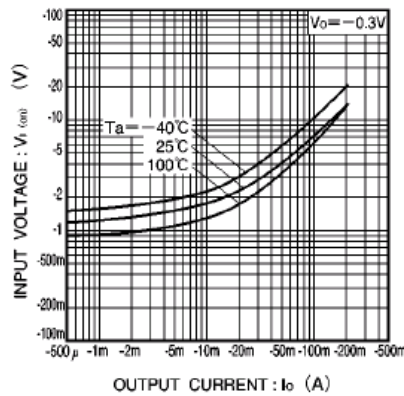


Fig.1 Input voltage vs. output current (ON characteristics)

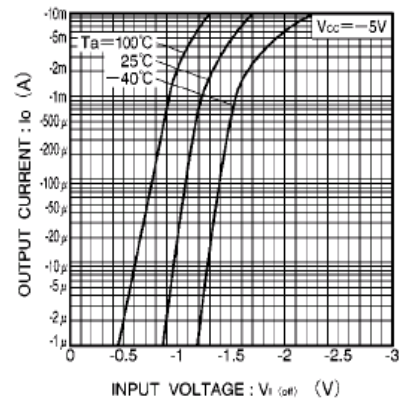


Fig.2 Output current vs. input voltage (OFF characteristics)

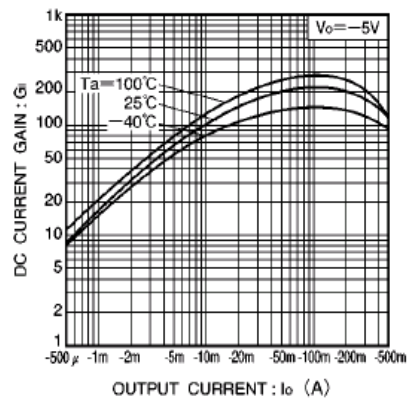


Fig.3 DC current gain vs. output current

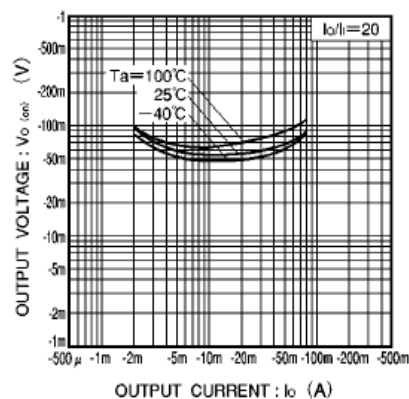


Fig.4 Output voltage vs. output current

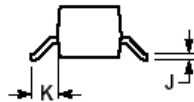
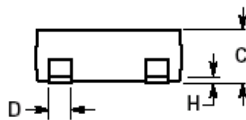
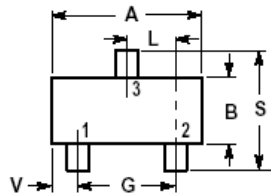
LDTB114ELT1G

SOT-23

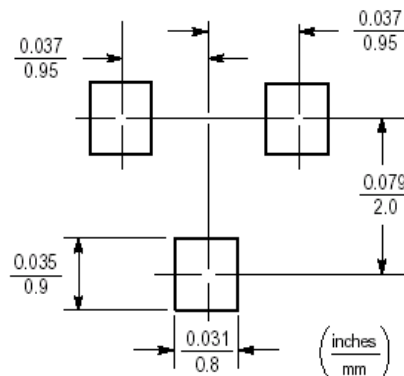
NOTES:

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

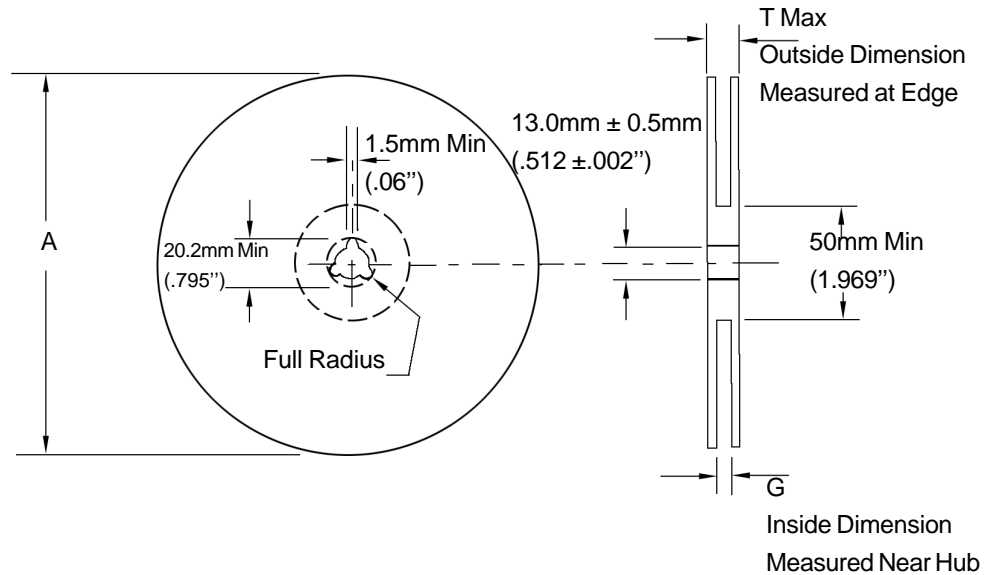
2.CONTROLLING DIMENSION:INCH



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



EMBOSED 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

