

Bias Resistor Transistor

PNP Silicon Surface Mount Transistor with Monolithic Bias Resistor Network

- **Applications**
Inverter, Interface, Driver

- **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 positive 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 the device design easy.

- We declare that the material of product compliance with RoHS requirements.
- S - Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

- **Absolute maximum ratings** (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V _{CB0}	-50	V
Collector-emitter voltage	V _{CE0}	-50	V
Emitter-base voltage	V _{EB0}	-5	V
Collector current	I _c	-500	mA
Collector power dissipation	P _d *	200	mW
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

* Each pin mounted on the recommended land

DEVICE MARKING AND RESISTOR VALUES

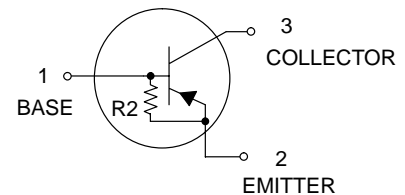
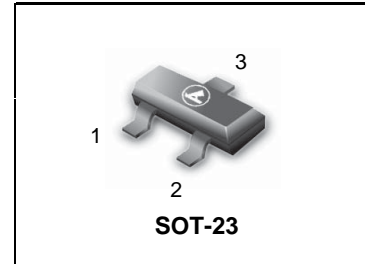
Device	Marking	R1 (K)	R2 (K)	Shipping
LDTB114GLT1G S-LDTB114GLT1G	K7	-	10	3000/Tape & Reel
LDTB114GLT3G S-LDTB114GLT3G	K7	-	10	10000/Tape & Reel

- **Electrical characteristics** (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CB0}	-50	-	-	V	I _c = -50μA
Collector-emitter breakdown voltage	BV _{CE0}	-50	-	-	V	I _c = -1mA
Emitter-base breakdown voltage	BV _{EB0}	-5	-	-	V	I _E = -720μA
Collector cutoff current	I _{CB0}	-	-	-0.5	μA	V _{CB} = -50V
Emitter cutoff current	I _{EB0}	-	-	-580	μA	V _{EB} = -4V
Collector-emitter saturation voltage	V _{CE(sat)}	-	-	-0.3	V	I _c /I _B = -50mA/-2.5mA
DC current transfer ratio	h _{FE}	56	-	-	-	I _c = -50mA , V _{CE} = -5V
Input resistance	R2	7	10	13	kΩ	-
Transition frequency	f _t *	-	200	-	MHz	V _{CE} = -10V , I _E =50mA , f=100MHz

*Characteristics of built-in transistor

LDTB114GLT1G
S-LDTB114GLT1G



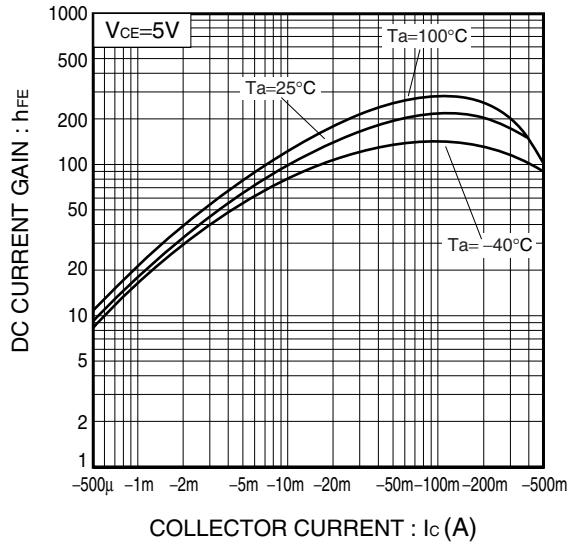
LDTB114GLT1G;S-LDTB114GLT1G
●Electrical characteristic curves


Fig.1 DC current transfer ratio vs. Collector current

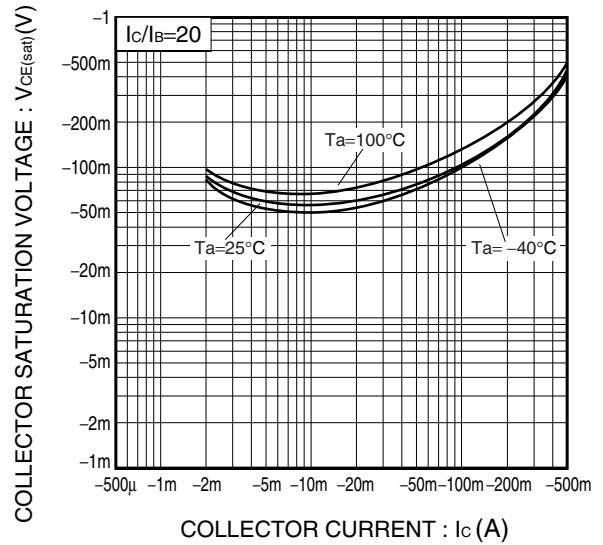
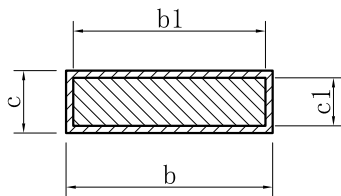
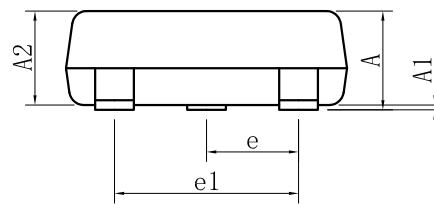
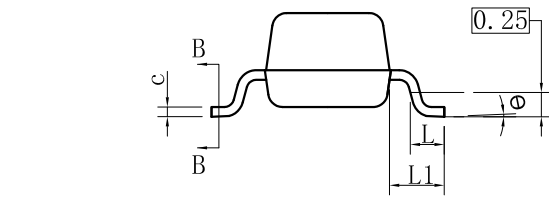


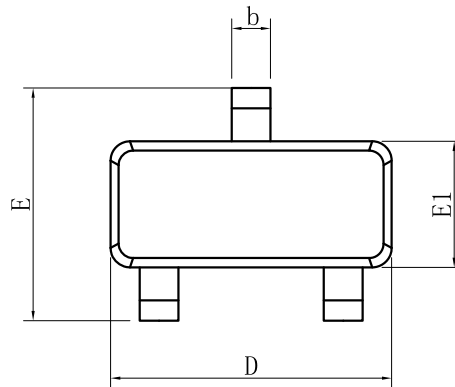
Fig.2 Collector-Emitter saturation voltage vs. Collector current

LDTB114GLT1G;S-LDTB114GLT1G

OUTLINE AND DIMENSIONS



SECTION B-B

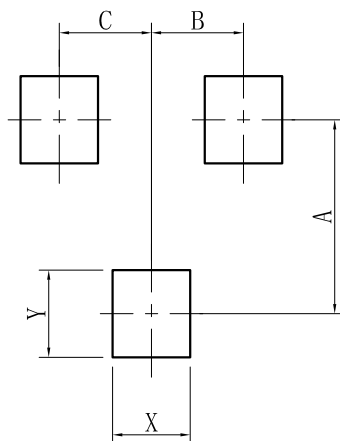


SOT23			
DIM	MIN	NOR	MAX
A	0.89	-	1.12
A1	0.01	-	0.10
A2	0.88	0.95	1.02
b	0.30	-	0.50
b1	0.30	0.40	0.45
c	0.08	-	0.20
c1	0.08	0.10	0.16
D	2.80	2.90	3.04
E	2.10	-	2.64
E1	1.20	1.30	1.40
e	0.95BSC		
e1	1.90BSC		
L	0.40	0.46	0.60
L1	0.54REF		
θ	0°	-	8°
All Dimensions in mm			

GENERAL NOTES

1. Top package surface finish Ra0.4±0.2um
2. Bottom package surface finish Ra0.7±0.2um
3. Side package surface finish Ra0.4±0.2um

SOLDERING FOOTPRINT



SOT-23	
DIM	(mm)
X	0.80
Y	0.90
A	2.00
B	0.95
C	0.95

DISCLAIMER

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.
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