

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.

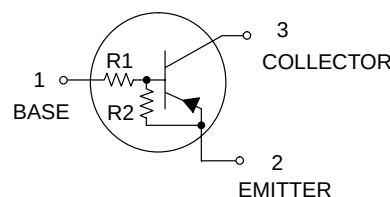
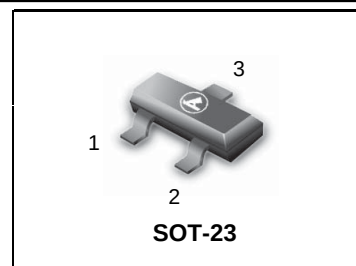
• We declare that the material of product compliance with RoHS requirements.

• 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
Supply voltage	V _{CC}	-50	V
Input voltage	V _I	-40 to +15	V
Output current	I _O	-30	mA
	I _{C(Max.)}	-100	
Power dissipation	P _d	200	mW
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

LDTA144VLT1G
S-LDTA144VLT1G



DEVICE MARKING AND RESISTOR VALUES

Device	Marking	R1 (K)	R2 (K)	Shipping
LDTA144VLT1G S-LDTA144VLT1G	L9	47	10	3000/Tape & Reel
LDTA144VLT3G S-LDTA144VLT3G	L9	47	10	13000/Tape & Reel

• Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	V _{I(off)}	-	-	-1	V	V _{CC} = -5V, I _O = -100μA
	V _{I(on)}	-6	-	-		V _O = -0.3V, I _O = -2mA
Output voltage	V _{O(on)}	-	-0.1	-0.3	V	I _O = -10mA, I _I = -0.5mA
Input current	I _I	-	-	-0.16	mA	V _I = -5V
Output current	I _{O(off)}	-	-	-0.5	μA	V _{CC} = -50V, V _I =0V
DC current gain	G _I	33	-	-	-	I _O = -5mA, V _O = -5V
Input resistance	R ₁	32.9	47	61.1	kΩ	-
Resistance ratio	R ₂ /R ₁	0.17	0.21	0.26	-	-
Transition frequency	f _r	-	250	-	MHz	V _{CE} = -10V, I _E =5mA, f=100MHz *

* Transition frequency of the device.

LDTA144VLT1G;S-LDTA144VLT1G

●Electrical characteristic curves

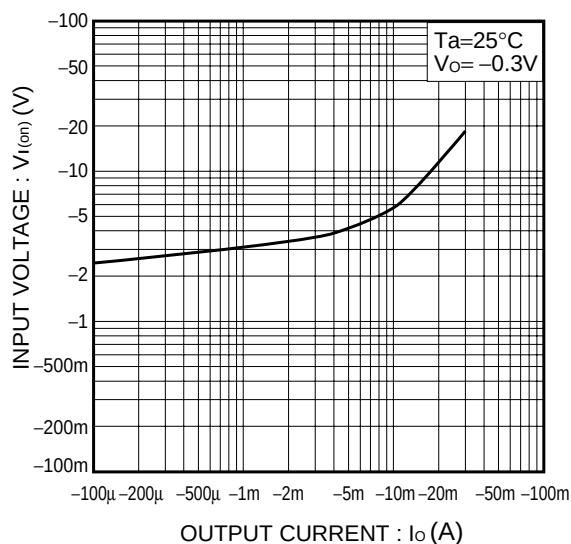


Fig.1 Input voltage vs. Output current (ON characteristics)

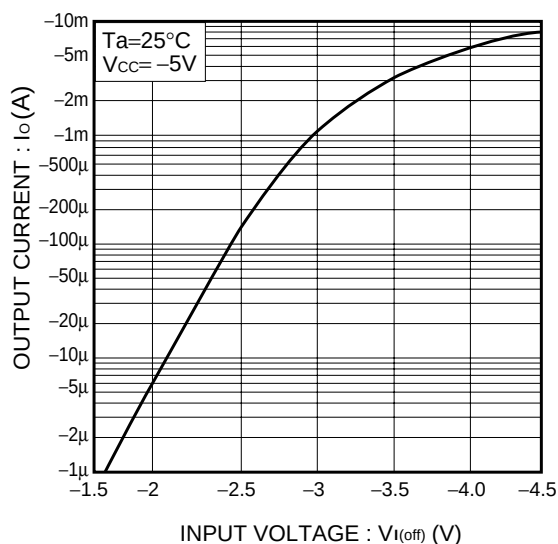


Fig.2 Output current vs. Input voltage (OFF characteristics)

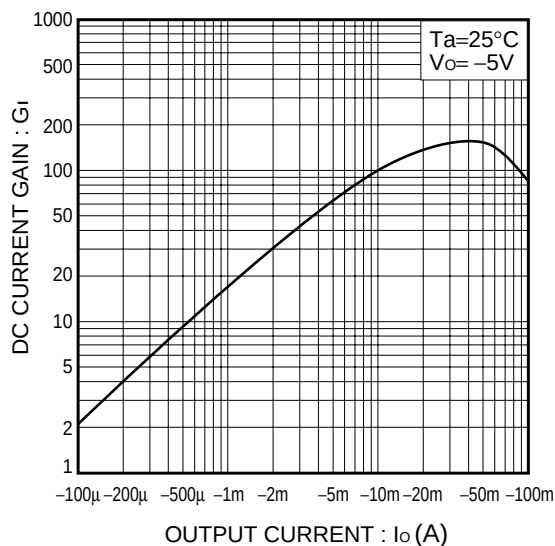


Fig.3 DC current gain vs. Output current characteristics

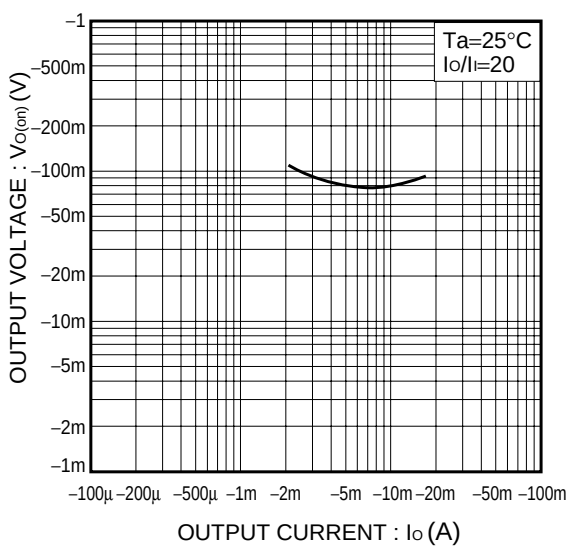
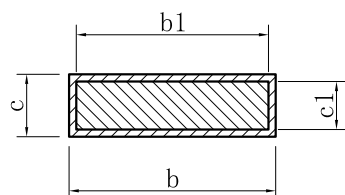
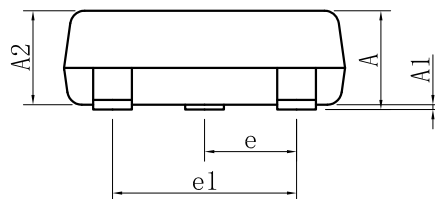
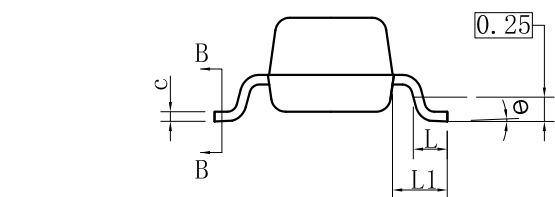


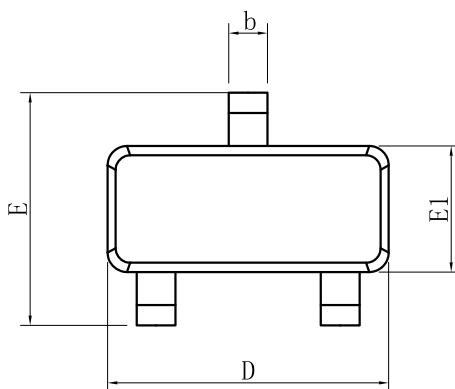
Fig.4 Output voltage vs. Output current characteristics

LDTA144VLT1G;S-LDTA144VLT1G

OUTLINE AND DIMENSIONS



SECTION B-B

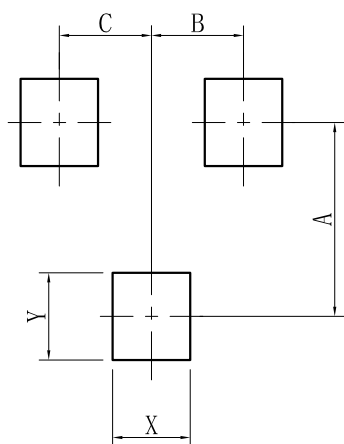


SOT23			
DIM	MIN	NOR	MAX
A	0.89	—	1.12
A1	0.01	—	0.10
A2	0.88	0.95	1.02
b	0.30	—	0.50
b1	0.30	0.40	0.45
c	0.08	—	0.20
c1	0.08	0.10	0.16
D	2.80	2.90	3.04
E	2.10	—	2.64
E1	1.20	1.30	1.40
e	0.95BSC		
e1	1.90BSC		
L	0.40	0.46	0.60
L1	0.54REF		
θ	0°	—	8°
All Dimensions in mm			

GENERAL NOTES

- 1.Top package surface finish $Ra0.4 \pm 0.2\mu m$
- 2.Bottom package surface finish $Ra0.7 \pm 0.2\mu m$
- 3.Side package surface finish $Ra0.4 \pm 0.2\mu m$

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.
- Before you use our Products for new Project, you are requested to carefully read this document and fully understand its contents. LRC shall not be in any way responsible or liable for failure, malfunction or accident arising from the use of any LRC's Products against warning, caution or note contained in this document.
- All information contained in this document is current as of the issuing date and subject to change without any prior notice. Before purchasing or using LRC's Products, please confirm the latest information with a LRC sales representative.