

# Bias Resistor Transistor

## PNP Silicon Surface Mount Transistor with Monolithic Bias Resistor Network

**LDTA115GLT1G**

● **Applications**

Inverter, Interface, Driver

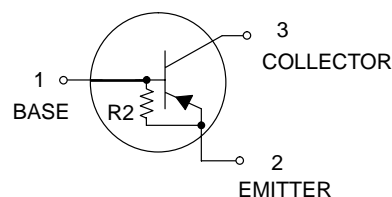
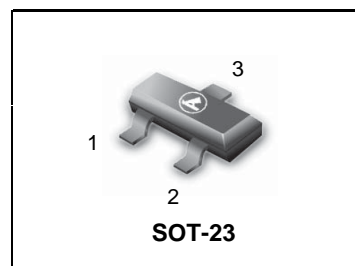
● **Features**

- 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.

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

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CB0</sub>	-50	V
Collector-emitter voltage	V <sub>CE0</sub>	-50	V
Emitter-base voltage	V <sub>EB0</sub>	-5	V
Collector current	I <sub>c</sub>	-100	mA
Collector power dissipation	P <sub>c</sub>	200	mW
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C



**DEVICE MARKING AND RESISTOR VALUES**

Device	Marking	R1 (K)	R2 (K)	Shipping
LDTA115GLT1G	Q4	-	100	3000/Tape & Reel
LDTA115GLT3G	Q4	-	100	10000/Tape & Reel

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV <sub>CB0</sub>	-50	-	-	V	I <sub>c</sub> = -50 μA
Collector-emitter breakdown voltage	BV <sub>CE0</sub>	-50	-	-	V	I <sub>c</sub> = -1mA
Emitter-base breakdown voltage	BV <sub>EB0</sub>	-5	-	-	V	I <sub>E</sub> = -72 μA
Collector cutoff current	I <sub>CB0</sub>	-	-	-0.5	μA	V <sub>CB</sub> = -50V
Emitter cutoff current	I <sub>EB0</sub>	-	-	-58	μA	V <sub>EB</sub> = -4V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	-	-	-0.3	V	I <sub>c</sub> = -5mA, I <sub>B</sub> = -0.25mA
DC current transfer ratio	h <sub>FE</sub>	82	-	-	-	I <sub>c</sub> = -5mA, V <sub>CE</sub> = -5V
Emitter-base resistance	R2	70	100	130	kΩ	-
Transition frequency	f <sub>t</sub>	-	250	-	MHz	V <sub>CE</sub> = -10V, I <sub>E</sub> =5mA, f=100MHz *

\* Transition frequency of the device.

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●Electrical characteristic curves

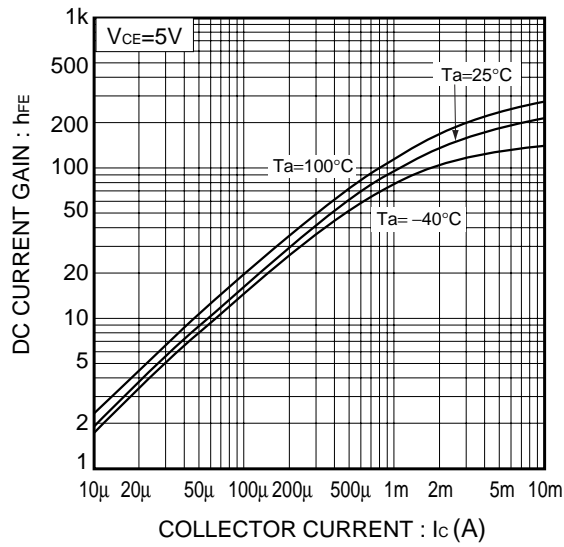


Fig.1 DC current gain vs. Collector current

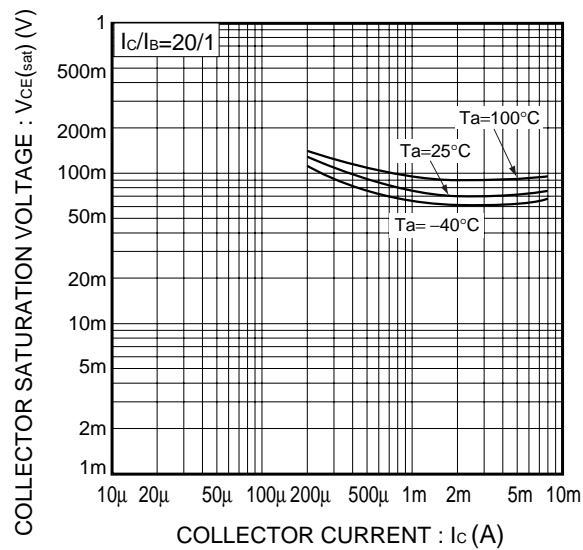


Fig.2 Collector-Emitter saturation voltage vs. Collector current

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**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

