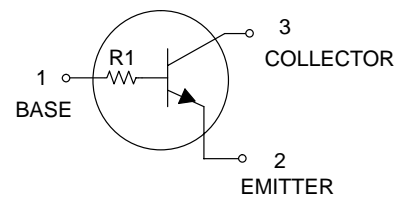
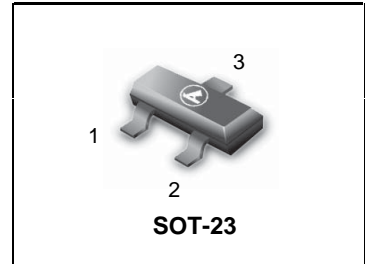


# Bias Resistor Transistor

## NPN 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.

**LDTD143TLT1G**  
**S-LDTD143TLT1G**



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

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CB0</sub>	50	V
Collector-emitter voltage	V <sub>CEO</sub>	40	V
Emitter-base voltage	V <sub>EBO</sub>	5	V
Collector current	I <sub>c</sub>	500	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
LDTD143TLT1G S-LDTD143TLT1G	E2	4.7	-	3000/Tape & Reel
LDTD143TLT3G S-LDTD143TLT3G	E2	4.7	-	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> =50μA
Collector-emitter breakdown voltage	BV <sub>CEO</sub>	40	-	-	V	I <sub>c</sub> =1mA
Emitter-base breakdown voltage	BV <sub>EBO</sub>	5	-	-	V	I <sub>E</sub> =50μA
Collector cutoff current	I <sub>CB0</sub>	-	-	0.5	μA	V <sub>CB</sub> =50V
Emitter cutoff current	I <sub>EBO</sub>	-	-	0.5	μA	V <sub>EB</sub> =4V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	-	-	0.3	V	I <sub>c</sub> /I <sub>B</sub> =50mA/2.5mA
DC current transfer ratio	h <sub>FE</sub>	100	250	600	-	V <sub>CE</sub> =5V, I <sub>c</sub> =50mA
Input resistance	R <sub>1</sub>	3.29	4.7	6.11	kΩ	-
Transition frequency	f <sub>T</sub> *	-	200	-	MHz	V <sub>CE</sub> =10V, I <sub>E</sub> =-50mA, f=100MHz

\* Characteristics of built-in transistor

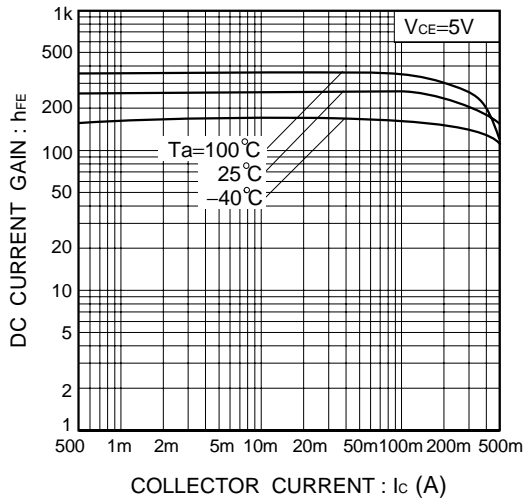
**LDTD143TLT1G;S-LDTD143TLT1G**
**●Electrical characteristic curves**


Fig.1 DC current gain vs. collector current

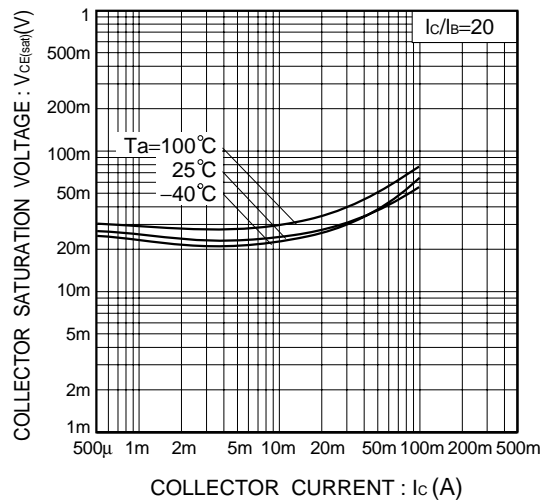


Fig.2 Collector-emitter saturation voltage vs. collector current

