Bias Resistor Transistor

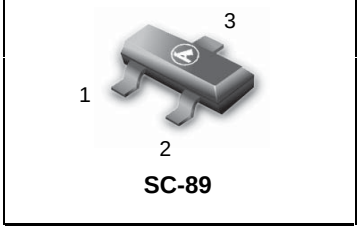
PNP Silicon Surface Mount Transistor with Monolithic Bias Resistor Network

LDTB143EET1G

- **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.



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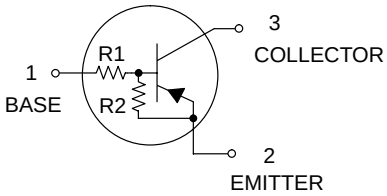

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	V_{CC}	–50	V
Input voltage	V_{IN}	–30 to +10	V
Output current	I_C	–500	mA
Power dissipation	P_D	200	mW
Junction temperature	Tj	150	℃
Storage temperature	Tstg	–55 to +150	℃

DEVICE MARKING AND RESISTOR VALUES

Device	Marking	R1 (K)	R2 (K)	Shipping
LDTB143EET1G	K6	4.7	4.7	3000/Tape & Reel
LDTB143EET3G	K9	4.7	4.7	10000/Tape & Reel

●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= –100μA
	$V_{I(on)}$	–3	–	–		V_O= –0.3V, I_O= –20mA
Output voltage	$V_{O(on)}$	–	–0.1	–0.3	V	I_O/I_I= –50mA/–2.5mA
Input current	I_I	–	–	–1.8	mA	V_I= –5V
Output current	$I_{O(off)}$	–	–	–0.5	μA	V_{CC}= –50V, V_I=0V
DC current gain	G_I	47	–	–	–	V_O= –5V, I_O= –50mA
Input resistance	R_1	3.29	4.7	6.11	kΩ	–
Resistance ratio	R_2/R_1	0.8	1	1.2	–	–
Transition frequency	f_T *	–	200	–	MHz	V_{CE}= –10V, I_E=50mA, f=100MHz

* Characteristics of built-in tranasistor

LDTB143EET1G

●Electrical characteristic curves

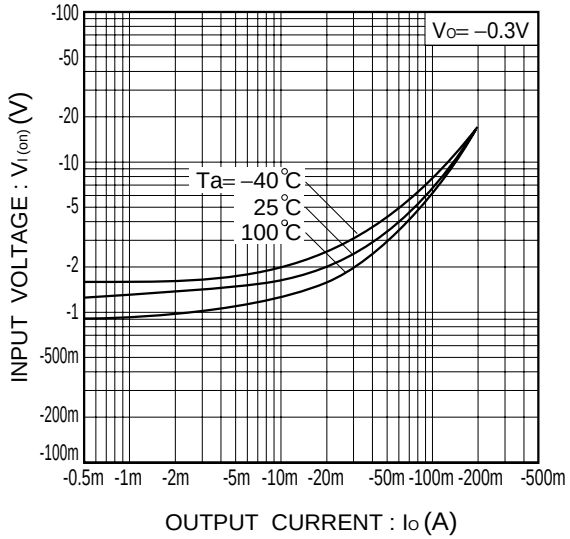

Fig.1 Input voltage vs. output current

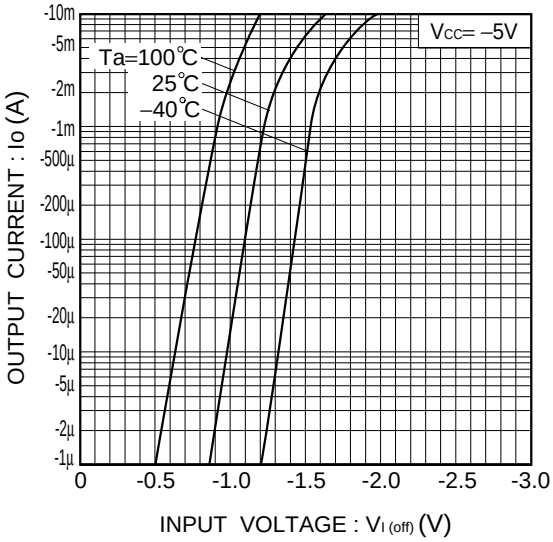

Fig.2 Output current vs. input voltage (OFF characteristics)

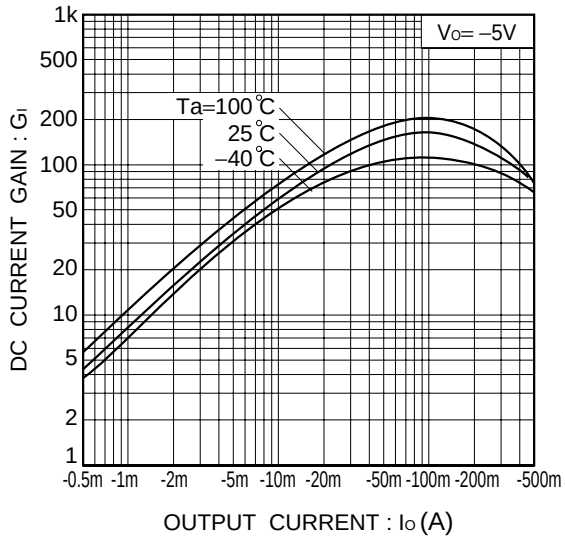

Fig.3 DC current gain vs. output current

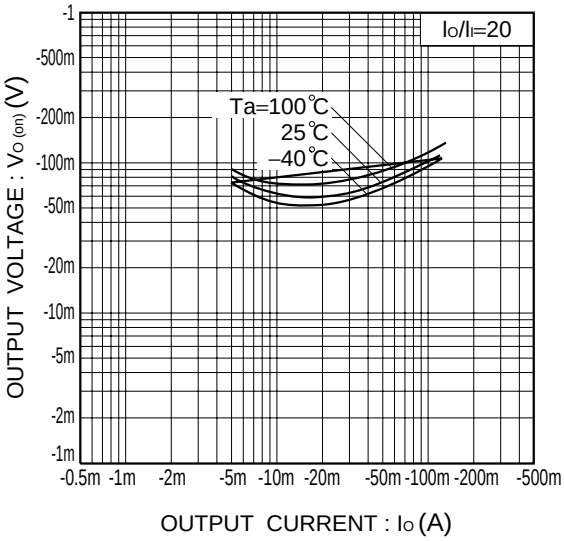

Fig.4 Output voltage vs. output current

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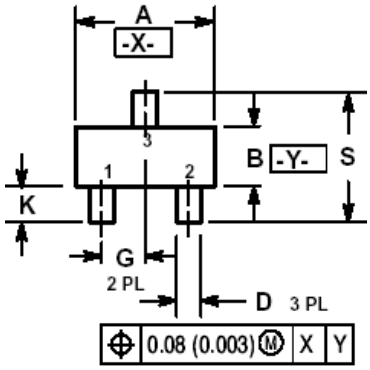
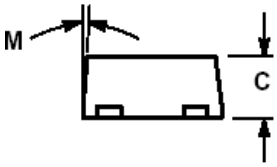
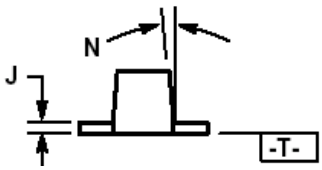


NOTES:
1.DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2.CONTROLLING DIMENSION: MILLIMETERS
3.MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4.463C-01 OBSOLETE, NEW STANDARD 463C-02.





DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.50	1.60	1.70	0.059	0.063	0.067
B	0.75	0.85	0.95	0.030	0.034	0.040
C	0.60	0.70	0.80	0.024	0.028	0.031
D	0.23	0.28	0.33	0.009	0.011	0.013
G	0.50 BSC			0.020 BSC		
H	0.53 REF			0.021 REF		
J	0.10	0.15	0.20	0.004	0.006	0.008
K	0.30	0.40	0.50	0.012	0.016	0.020
L	1.10 REF			0.043 REF		
M	---	---	10 °	---	---	10 °
N	---	---	10 °	---	---	10 °
S	1.50	1.60	1.70	0.059	0.063	0.067