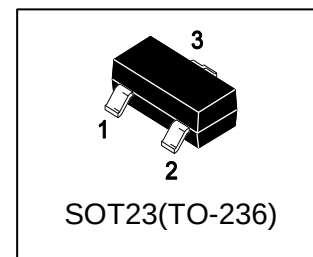


LDTC143XLT1G

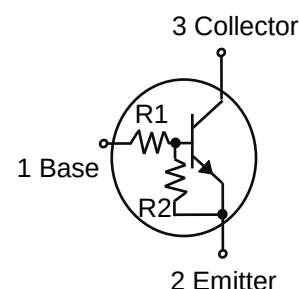
S-LDTC143XLT1G

Bias Resistor Transistors
NPN Silicon Surface Mount Transistors
with Monolithic Bias Resistor Network



1. FEATURES

- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors.
- 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.
- Only the on/off conditions need to be set for operation, making the device design easy.
- We declare that the material of product complies with RoHS requirements and Halogen Free.
- S- prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.



2. Applications

- Inverter, Interface, Driver.

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	R1(K)	R2(K)	V _{in} (V)	Shipping
LDTC143XLT1G	M1	4.7	10	-7~+20	3000/Tape&Reel
LDTC143XLT3G	M1	4.7	10	-7~+20	13000/Tape&Reel

4. MAXIMUM RATINGS(T_a = 25°C)

Parameter	Symbol	Limits	Unit
Collector-Emitter Voltage	V _{CEO}	50	V
Collector-Base Voltage	V _{CBO}	50	V
Collector Current	I _C	100	mA

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation, FR-5 Board (Note 1) @ T _A = 25°C Derate above 25°C	PD	225 1.8	mW mW/°C
Thermal Resistance, Junction-to-Ambient(Note 1)	R _{θJA}	556	°C/W
Junction and Storage temperature	T _J , T _{stg}	-55~+150	°C

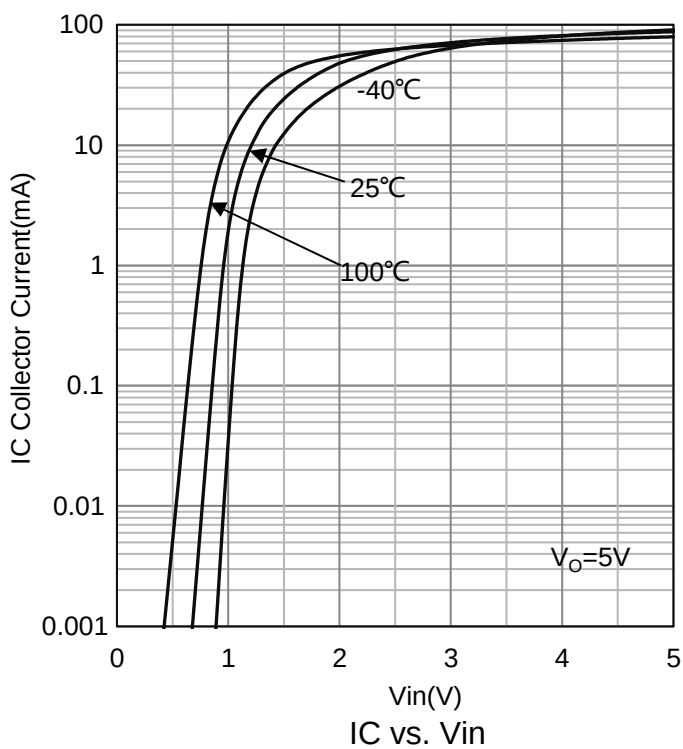
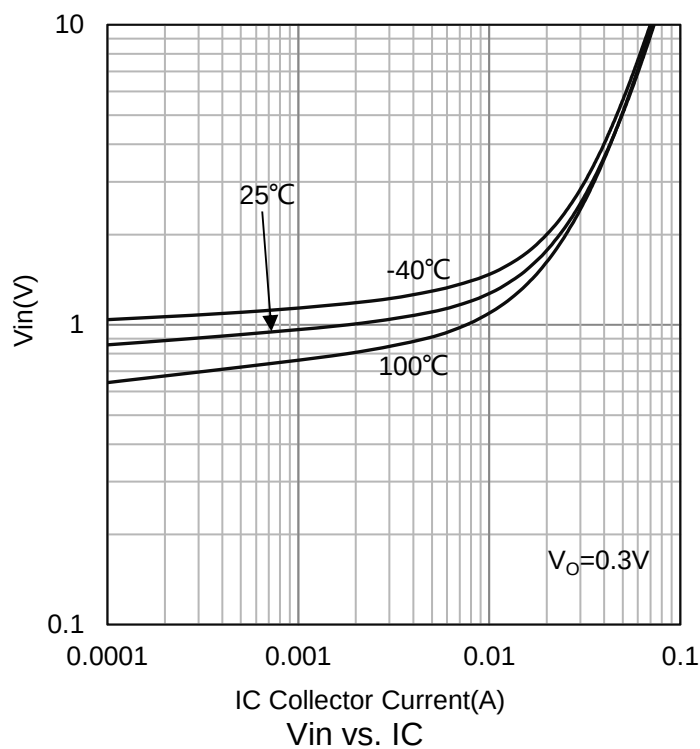
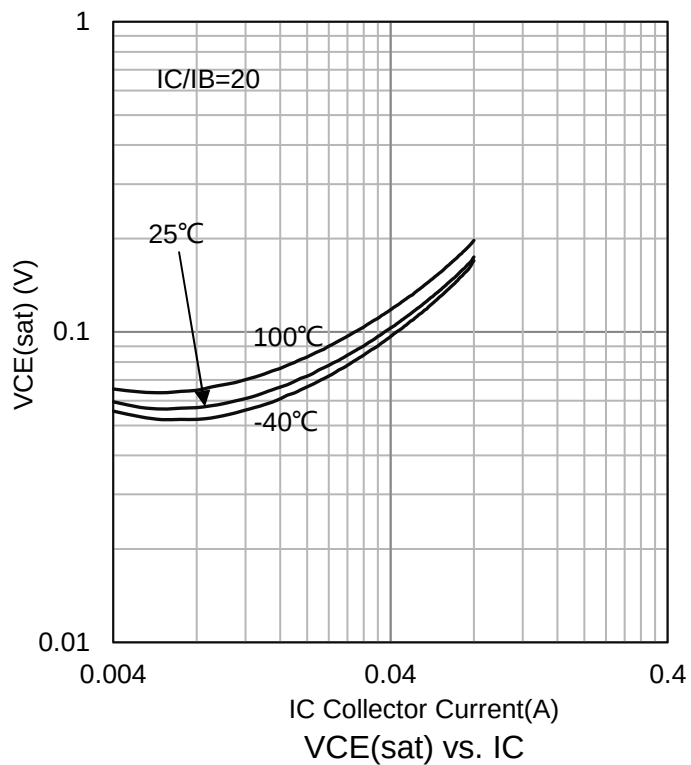
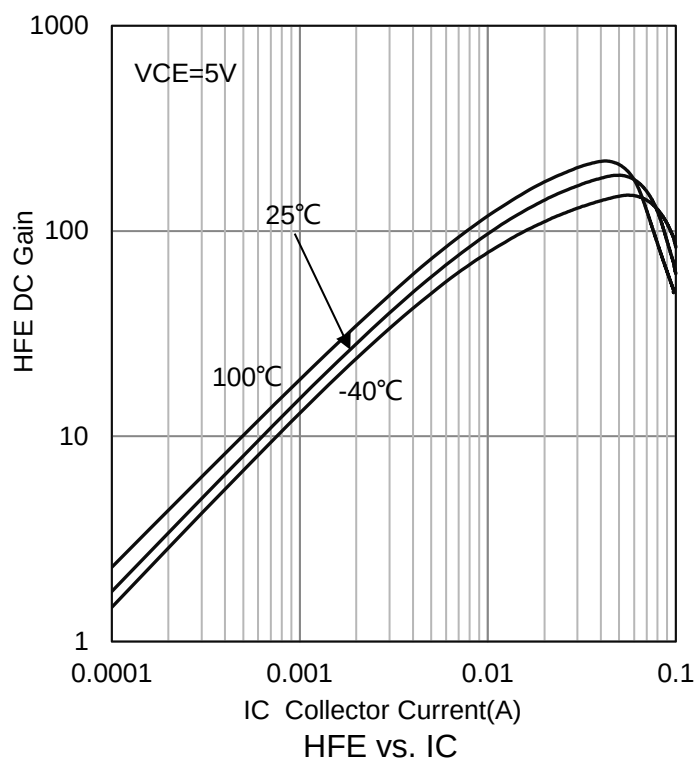
1. FR-5 = 1.0×0.75×0.062 in.

6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

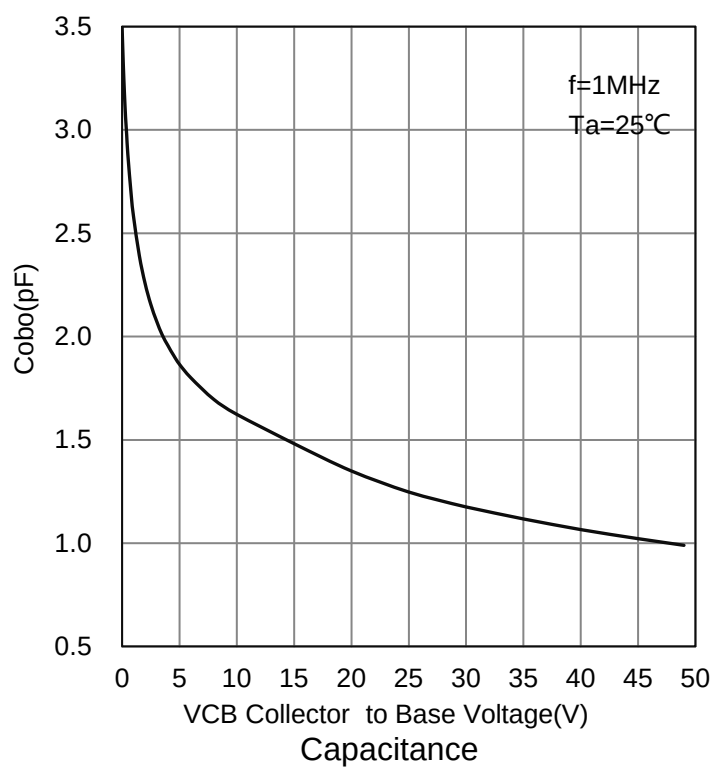
Characteristic	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage (IC = 2.0 mA, IB = 0)	VBR(CEO)	50	-	-	V
Collector–Base Breakdown Voltage (IC = 10 μ A, IE = 0)	VBR(CBO)	50	-	-	V
Collector-Base Cutoff Current (VCB = 50 V, IE = 0)	ICBO	-	-	100	nA
Emitter-Base Cutoff Current (VEB = 6.0 V, IC = 0)	IEBO	-	-	1	mA
Collector-Emitter Cutoff Current (VCE = 50 V, IB = 0)	ICEO	-	-	500	nA
DC Current Gain (IC = 10 mA, VCE = 5 V)	HFE	30	-	-	
Collector–Emitter Saturation Voltage (IC = 10 mA, IB = 0.3 mA)	VCE(sat)	-	-	0.25	V
Input Voltage (off) (VCE = 5.0 V, IC = 100 μ A)	Vi(off)	-	-	0.3	V
Input Voltage (on) (VCE = 0.3 V, IC = 20 mA)	Vi(on)	2.5	-	-	V
Output Voltage (on) (VCC = 5.0 V, VB = 5.5 V, RL = 1.0K Ω)	VOL	-	-	0.2	V
Output Voltage (off) (VCC = 5.0 V, VB = 0.25 V, RL = 1.0K Ω)	VOH	4.9	-	-	V
Input Resistor	R1	3.29	4.7	6.11	K Ω
Resistor Ratio	R2/R1	1.7	2.1	2.6	

 3. Pulse Test: Pulse Width < 300 μ s, Duty Cycle < 2.0%

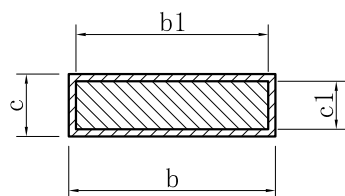
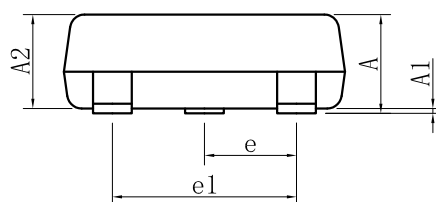
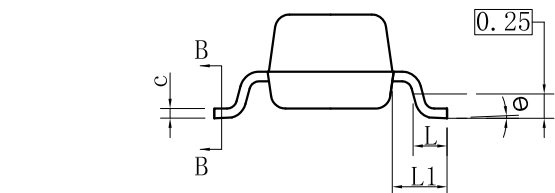
7. ELECTRICAL CHARACTERISTICS CURVES



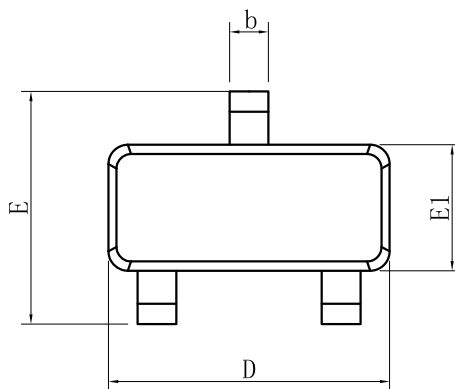
7.ELECTRICAL CHARACTERISTICS CURVES(Con.)



8.OUTLINE AND DIMENSIONS



SECTION B-B

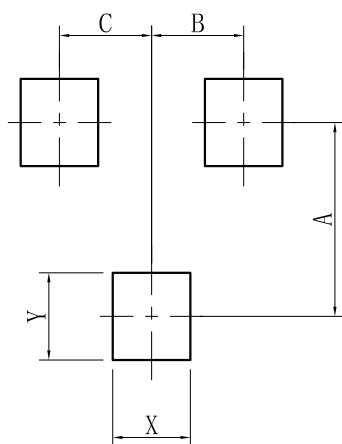


SOT23			
DIM	MIN	NOR	MAX
A	0.89	—	1.12
A1	0.01	—	0.10
A2	0.88	0.95	1.02
b	0.30	—	0.50
b1	0.30	0.40	0.45
c	0.08	—	0.20
c1	0.08	0.10	0.16
D	2.80	2.90	3.04
E	2.10	—	2.64
E1	1.20	1.30	1.40
e	0.95BSC		
e1	1.90BSC		
L	0.40	0.46	0.60
L1	0.54REF		
θ	0°	—	8°
All Dimensions in mm			

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

9.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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