

S-LBTN180D3T1G

NPN power transistors

1. FEATURES

- High current
- High power dissipation capability
- We declare that the material of product compliance 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

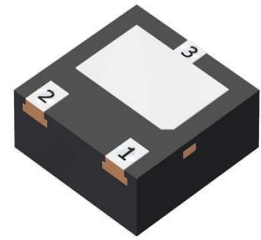
- Linear voltage regulators
- Low-side switches
- Battery-driven devices
- Power management
- MOSFET drivers
- Amplifiers

3. DEVICE MARKING AND ORDERING INFORMATION

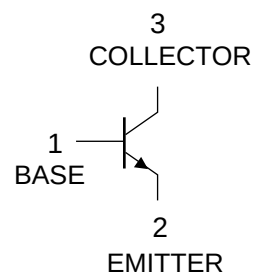
Device	Marking	Shipping
S-LBTN180D3T1G	N3	5000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit
Collector–Emitter Voltage	VCEO	85	V
Collector–Base Voltage	VCBO	105	V
Emitter–Base Voltage	VEBO	6	V
Collector Current	IC	1	A
Peak collector current(tp≤1 ms)	ICM	2	A
Base current	IB	0.3	A
Peak base current(tp≤1 ms)	IBM	0.3	A
Junction temperature	TJ	150	°C
Storage temperature	Tstg	–65~+150	°C



DFN2020-3



5. THERMAL CHARACTERISTICS

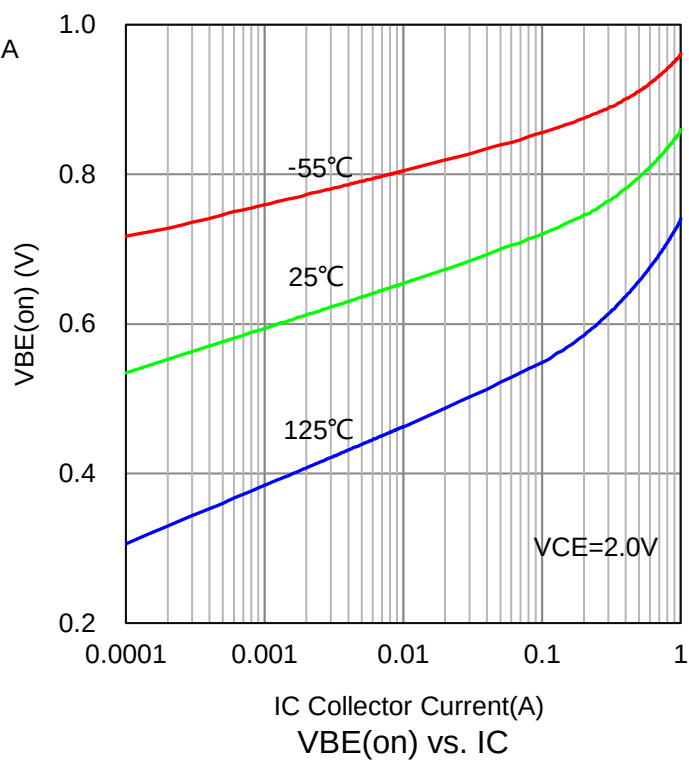
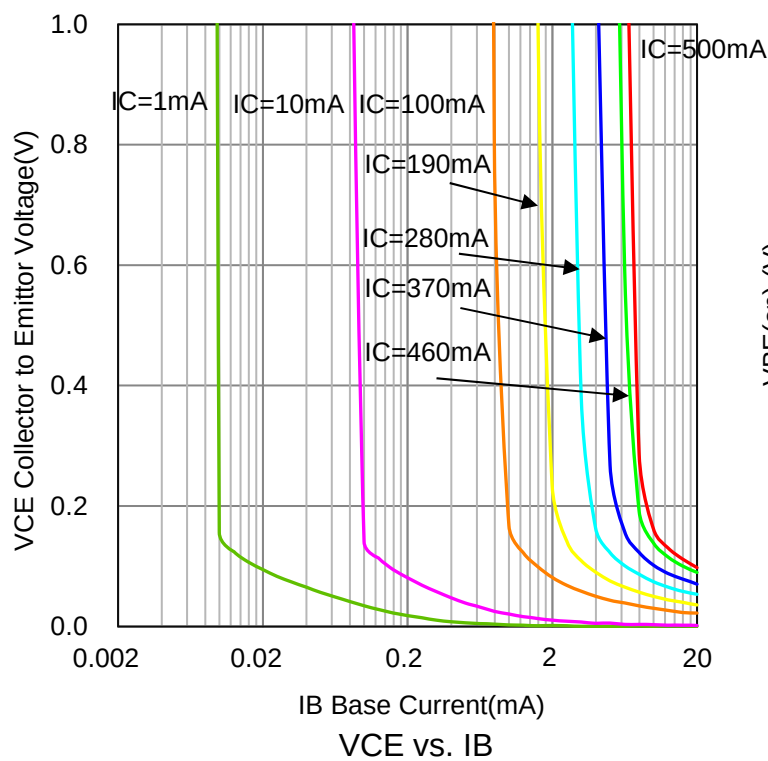
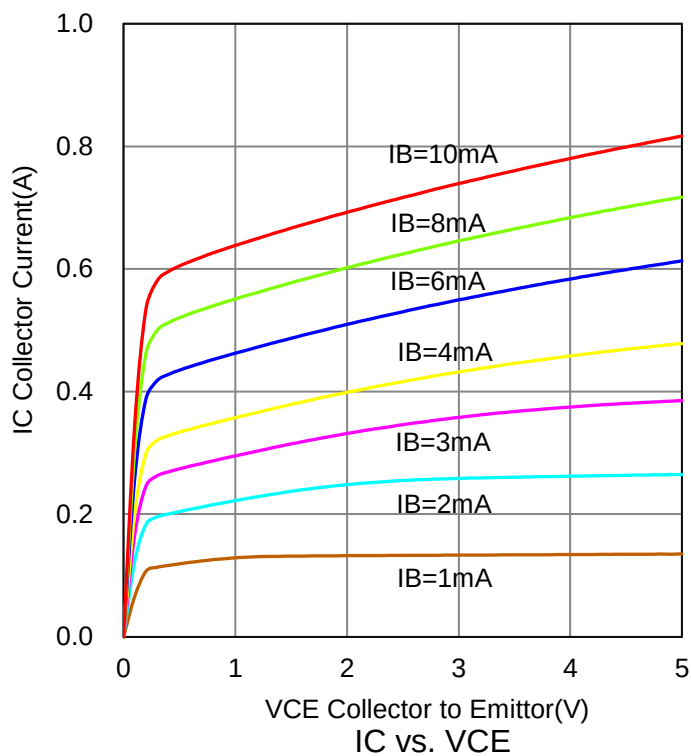
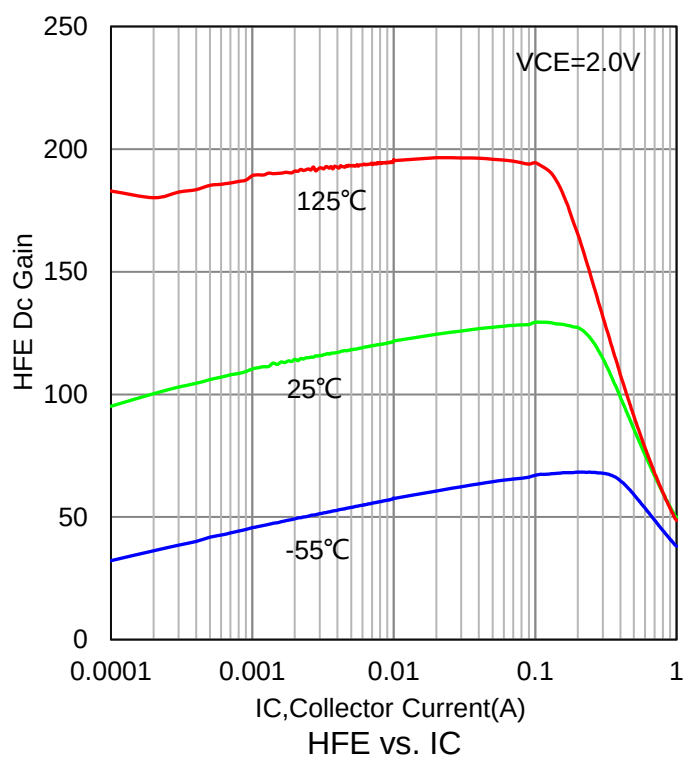
Parameter	Symbol	Limits	Unit
Total Device Dissipation Alumina Substrate, (Note 1) TA = 25°C Derate above 25°C	PD	490 3.9	mW mW/°C
Thermal Resistance, Junction to Ambient	RθJA	255	°C/W

1. 30.0mm×25.0mm×1.6mm(FR4), Copper foil thickness 35μm;

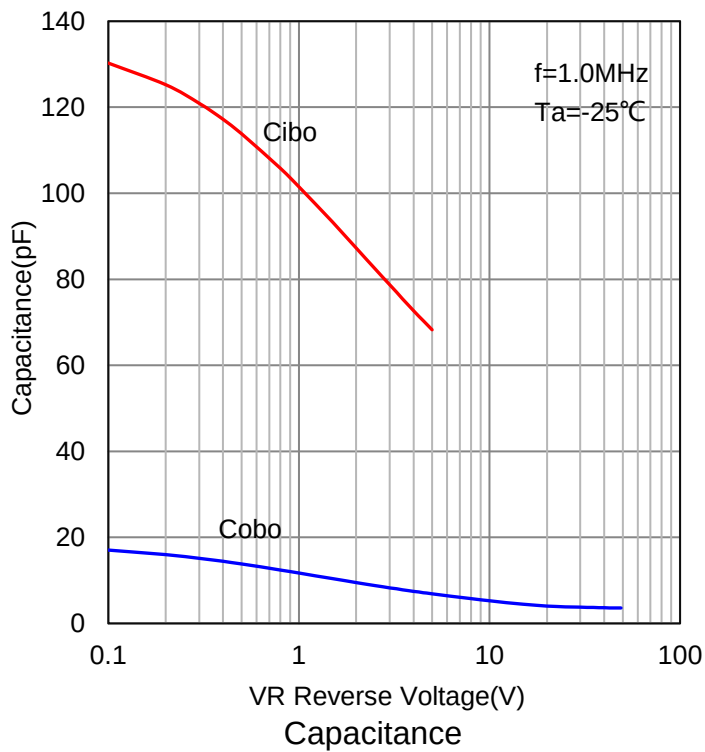
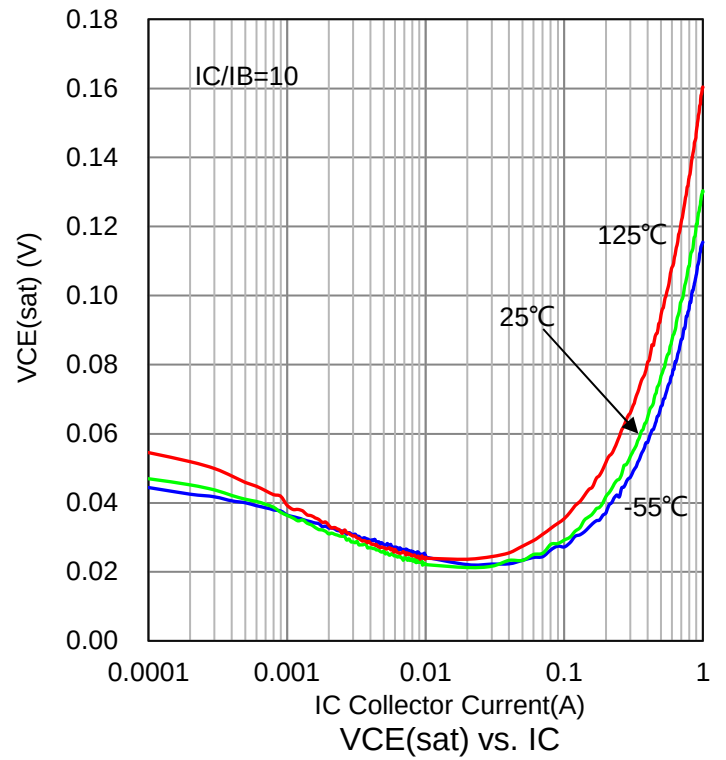
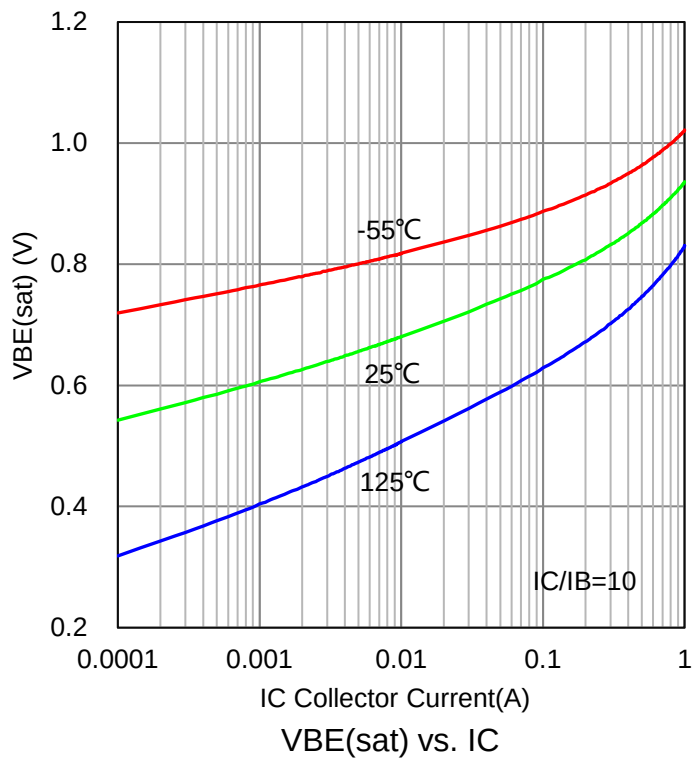
6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage (IC = 1 mA, IB = 0)	VBR(CEO)	85	-	-	V
Collector–Base Breakdown Voltage (IC = 100 μA, IE = 0)	VBR(CBO)	105	-	-	V
Emitter–Base Breakdown Voltage (IE = 100 μA, IC = 0)	VBR(EBO)	6	-	-	V
Collector Cutoff Current (VCB = 30 V, IE = 0 A)	ICBO	-	-	100	nA
Emitter Cut-off Current (VEB = 5V, IC = 0)	IEBO	-	-	100	nA
Collector-Emitter cutoff Current (VCE = 80V, IB = 0)	ICEO	-	-	5	μA
DC Current Gain (VCE = 2 V, IC = 5 mA) (VCE = 2 V, IC = 150 mA) (VCE = 2 V, IC = 500 mA)	HFE	63 63 40	- - -	- 250 -	
Collector–Emitter Saturation Voltage (IC = 500 mA, IB = 50 mA)	VCE(sat)	-	-	0.5	V
Base-Emitter voltage (VCE = 2 V, IC = 500 mA)	VBE	-	-	1	V
Transition Frequency (VCE = 5 V, IC = 50 mA, f = 100 MHz)	fT	100	-	-	MHz
Collector Capacitance (VCB = 10 V, IE = 0 A, f = 1 MHz)	Cc	-	4.86	-	pF

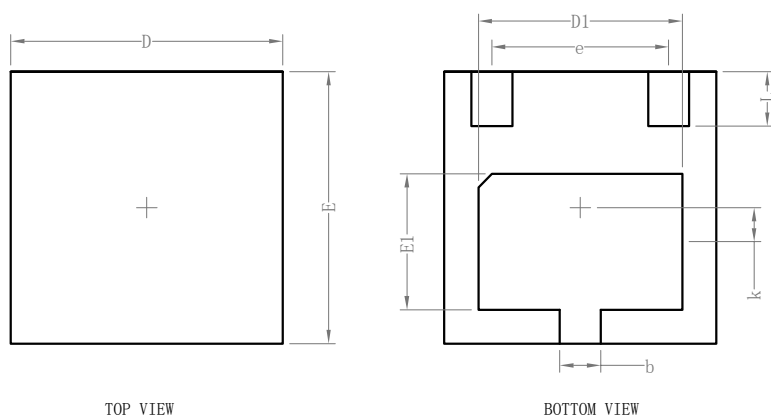
7.ELECTRICAL CHARACTERISTICS CURVES



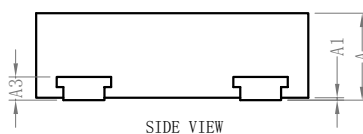
7.ELECTRICAL CHARACTERISTICS CURVES(Con.)



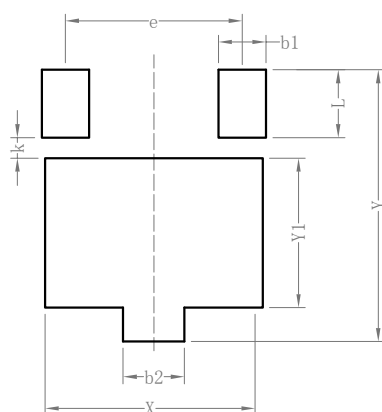
8.OUTLINE AND DIMENSIONS



DFN2020-3			
Dim	Min.	Typ.	Max.
A	0.60	0.65	0.70
A1	0.00	0.02	0.05
A3	0.152REF.		
D	1.95	2.00	2.05
E	1.95	2.00	2.05
D1	1.45	1.50	1.55
E1	0.95	1.00	1.05
b	0.25	0.30	0.35
e	1.30TYP.		
k	0.20	0.25	0.30
L	0.35	0.40	0.45
All Dimensions in mm			



9.SOLDERING FOOTPRINT



DFN2020-3	
Dim	(mm)
X	1.60
Y	2.00
b1	0.35
b2	0.45
L	0.50
Y1	1.10
k	0.15
e	1.30

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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