

S-LBC846BPDW1T1G

Dual General Purpose Transistors
NPN/PNP Duals (Complimentary)

1. FEATURES

- 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. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
S-LBC846BPDW1T1G	BB	3000/Tape&Reel
S-LBC846BPDW1T3G	BB	13000/Tape&Reel

3. MAXIMUM RATINGS(Ta = 25°C)

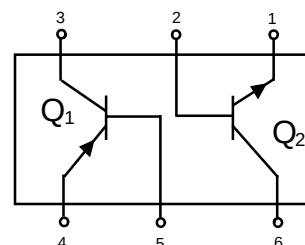
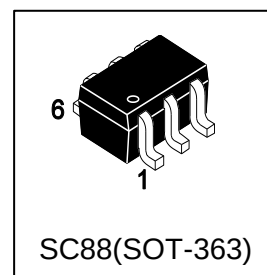
Parameter(NPN)	Symbol	Limits	Unit
Collector–Emitter Voltage	V _{CEO}	65	V
Collector–Base Voltage	V _{CB0}	80	V
Emitter–Base Voltage	V _{EB0}	6	V
Collector Current(Continuous)	I _C	100	mA

Parameter(PNP)	Symbol	Limits	Unit
Collector–Emitter Voltage	V _{CEO}	-65	V
Collector–Base Voltage	V _{CB0}	-80	V
Emitter–Base Voltage	V _{EB0}	-5	V
Collector Current(Continuous)	I _C	-100	mA

4. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation	PD	380	mW
FR– 5 Board, (Note 1) TA = 25°C		250	
Derate above 25°C		3	mW/°C
Thermal Resistance, Junction to Ambient	R _{θJA}	328	°C/W
Junction and Storage Temperature Range	T _J ,T _{stg}	-55 ~ +150	°C

1.FR - 5 = 1.0 x 0.75 x 0.062 in



5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)
NPN

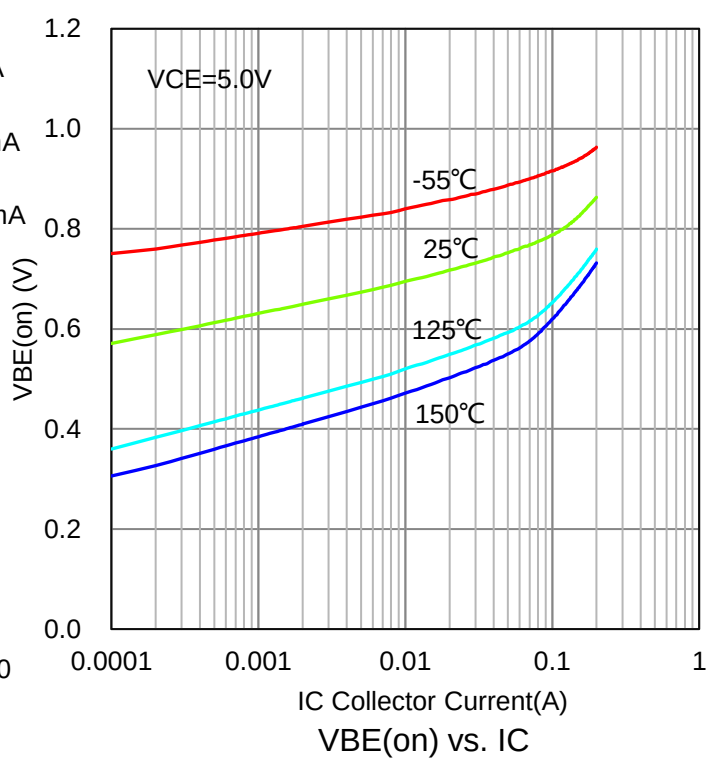
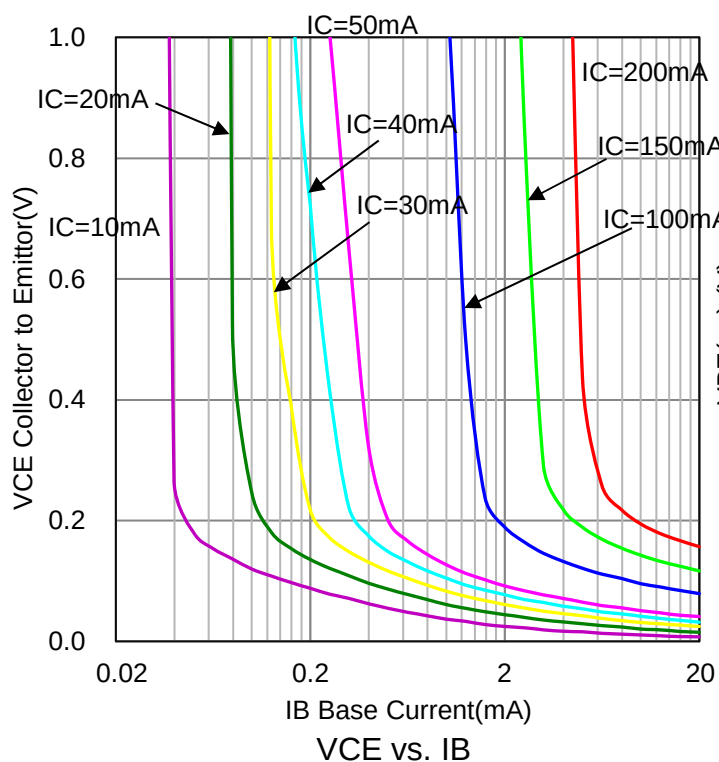
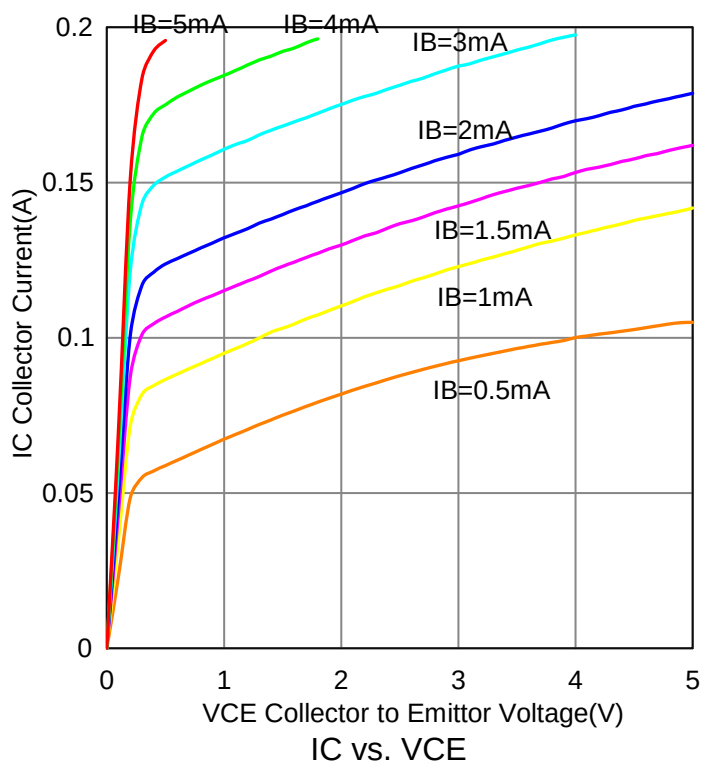
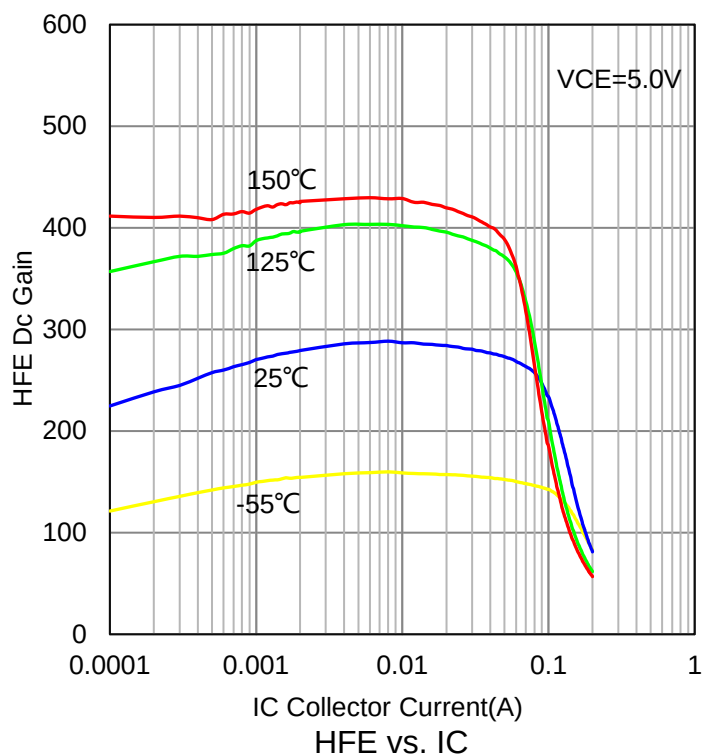
Characteristic	Symbol	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS					
Collector–Emitter Breakdown Voltage (IC = 10 mA, IB = 0)	V(BR)CEO	65	-	-	V
Collector–Emitter Breakdown Voltage (IC = 10 μ A, VEB = 0)	V(BR)CES	80	-	-	V
Collector–Base Breakdown Voltage (IC = 10 μ A, IE = 0)	V(BR)CBO	80	-	-	V
Emitter–Base Breakdown Voltage (IE = 1.0 μ A, IC = 0)	V(BR)EBO	6	-	-	V
Collector Cutoff Current (VCB = 30 V) (VCB = 30 V, TA = 150°C)	ICBO	- -	- -	15 5	nA μ A
Collector-Emitter cutoff Current (VCE = 65V, IB = 0)	ICEO	-	-	10	μ A
Emitter-Base cut-off current (IC = 0, VBE = 6V)	IEBO	-	-	100	nA
ON CHARACTERISTICS					
DC Current Gain (IC = 2.0 mA, VCE = 5.0 V)	hFE	200	290	475	
Collector–Emitter Saturation Voltage (IC = 10 mA, IB = 0.5 mA) (IC = 100 mA, IB = 5.0 mA)	VCE(sat)	- -	- -	0.25 0.6	V
Base–Emitter Saturation Voltage (IC = 10 mA, IB = 0.5 mA) (IC = 100 mA, IB = 5.0 mA)	VBE(sat)	- -	- -	0.9 1.2	V
Base–Emitter Voltage (IC = 2.0 mA, VCE = 5.0 V) (IC = 10 mA, VCE = 5.0 V)	VBE(on)	580 -	660 -	700 770	mV
SMALL–SIGNAL CHARACTERISTICS					
Current–Gain — Bandwidth Product (IC = 10 mA, VCE = 5.0 V, f = 100 MHz)	fT	100	-	-	MHz
Output Capacitance (VCB = 10 V, f = 1.0 MHz)	Cobo	-	-	4.5	pF
Noise Figure(IC = 0.2 mA, VCE = 5.0 V , RS = 2.0 k Ω , f = 1.0 KHz, BW = 200 Hz)	NF	-	-	10	dB

5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)(Con.)
PNP

Characteristic	Symbol	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS					
Collector–Emitter Breakdown Voltage (IC = -10 mA, IB = 0)	V(BR)CEO	-65	-	-	V
Collector–Emitter Breakdown Voltage (IC = -10 μA, VEB = 0)	V(BR)CES	-80	-	-	V
Collector–Base Breakdown Voltage (IC = -10 μA, IE=0)	V(BR)CBO	-80	-	-	V
Emitter–Base Breakdown Voltage (IE = -1.0 μA, IC=0)	V(BR)EBO	-5	-	-	V
Collector Cutoff Current (VCB = -30 V) (VCB = -30 V, TA = 150°C)	ICBO	-	-	-15 -4	nA μA
Collector-Emitter cutoff Current (VCE = -65V, IB=0)	ICEO	-	-	-10	μA
Emitter-Base cut-off current (IC = 0, VBE = -6V)	IEBO	-	-	-100	nA
ON CHARACTERISTICS					
DC Current Gain (IC = -10 μA, VCE = -5.0 V) (IC = -2.0 mA, VCE = -5.0 V)	hFE	- 200	150 290	- 475	
Collector–Emitter Saturation Voltage (IC = -10 mA, IB = -0.5 mA) (IC = -100 mA, IB = -5.0 mA)	VCE(sat)	- -	- -	-0.3 -0.65	V
Base–Emitter Saturation Voltage (IC = -10 mA, IB = -0.5 mA) (IC = -100 mA, IB = -5.0 mA)	VBE(sat)	- -	- -	-0.9 -1.2	V
Base–Emitter Voltage (IC = -2.0 mA, VCE = -5.0 V) (IC = -10 mA, VCE = -5.0 V)	VBE(on)	-0.6 -	- -	-0.75 -0.82	V
SMALL–SIGNAL CHARACTERISTICS					
Current–Gain — Bandwidth Product (IC = -10 mA, VCE = -5.0 V, f = 100 MHz)	fT	100	-	-	MHz
Output Capacitance (VCB = -10 V, f = 1.0 MHz)	Cobo	-	-	4.5	pF
Noise Figure(IC = -0.2 mA, VCE = -5.0 V , RS = 2.0 kΩ, f = 1.0 KHz, BW = 200 Hz)	NF	-	-	10	dB

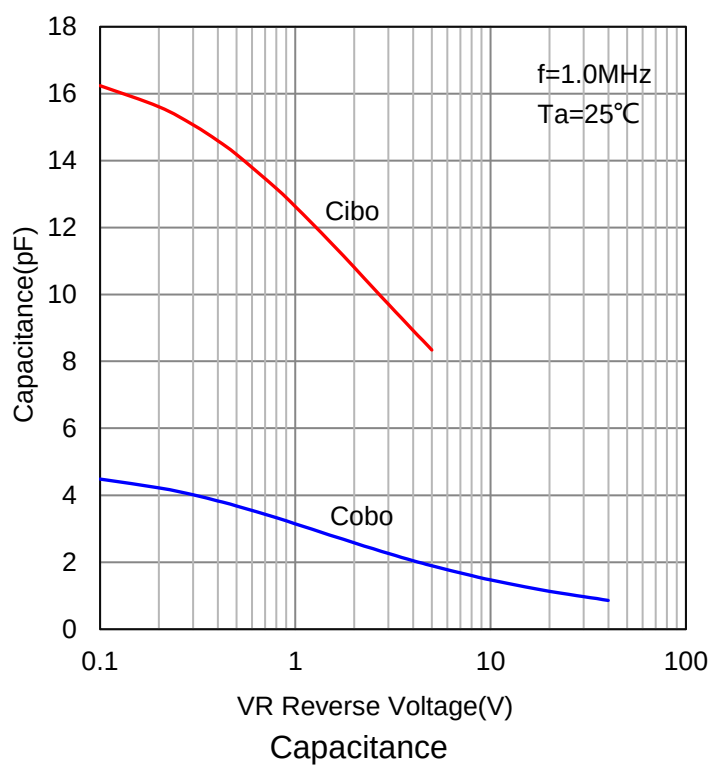
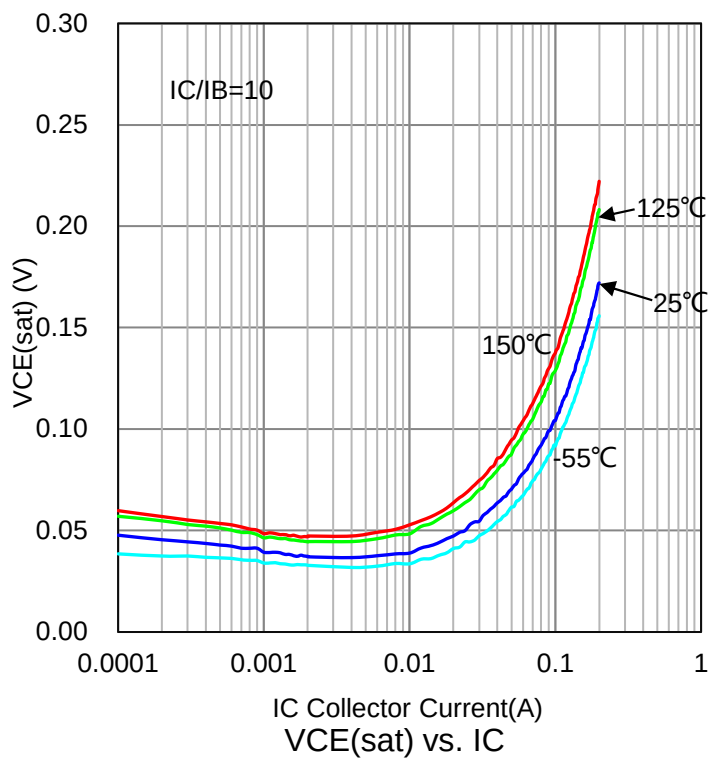
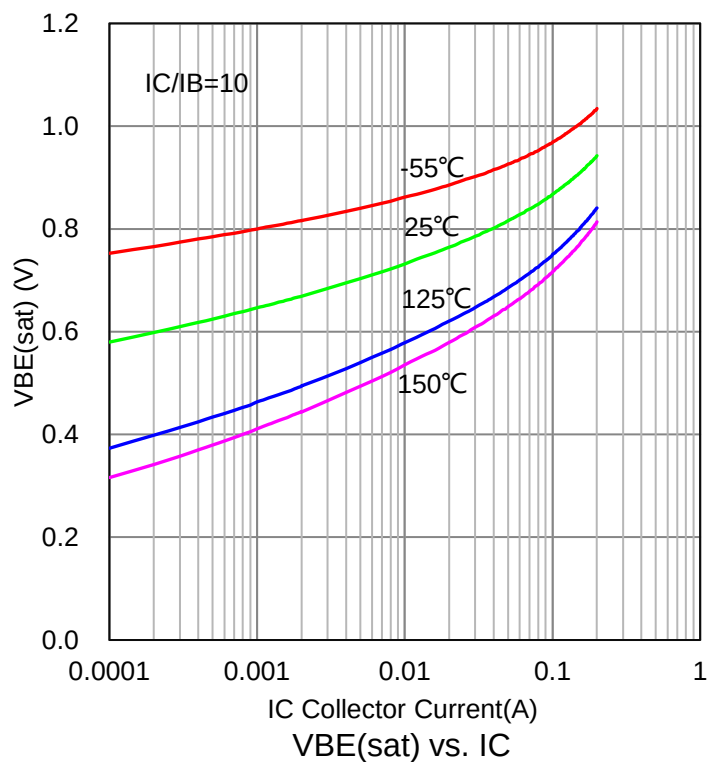
6.ELECTRICAL CHARACTERISTICS CURVES

NPN



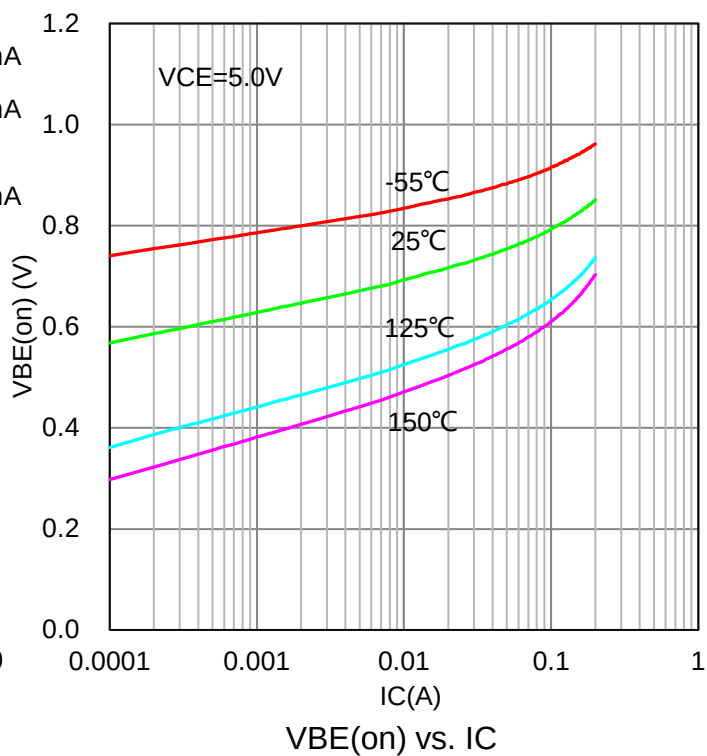
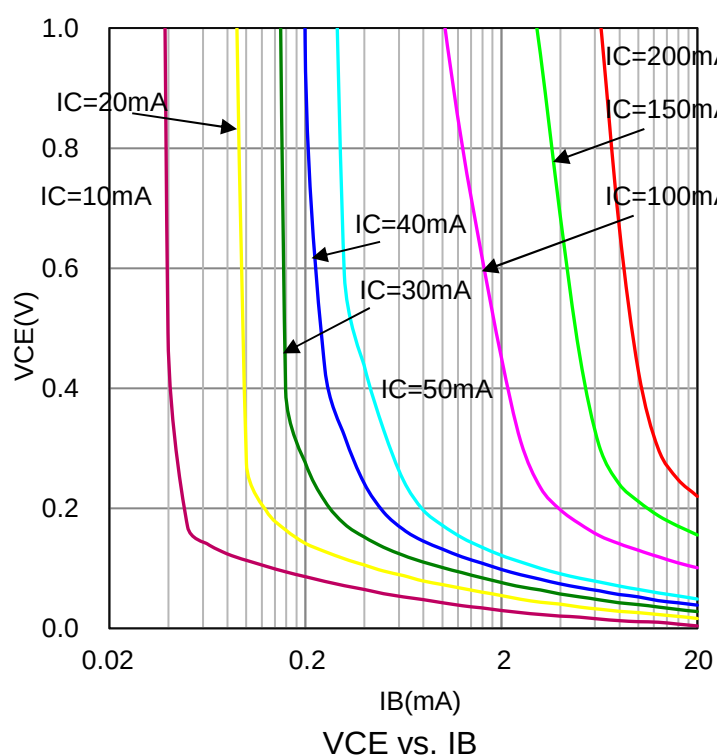
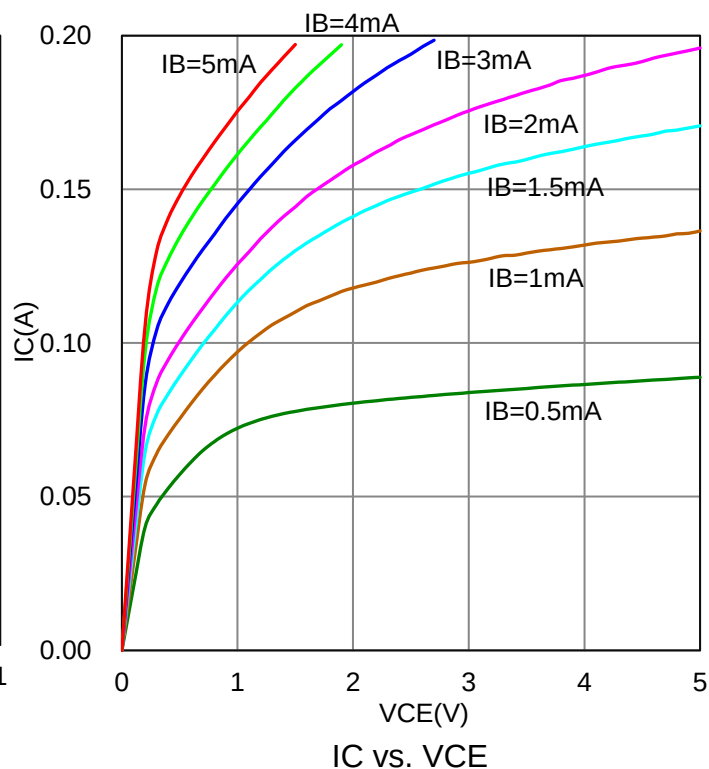
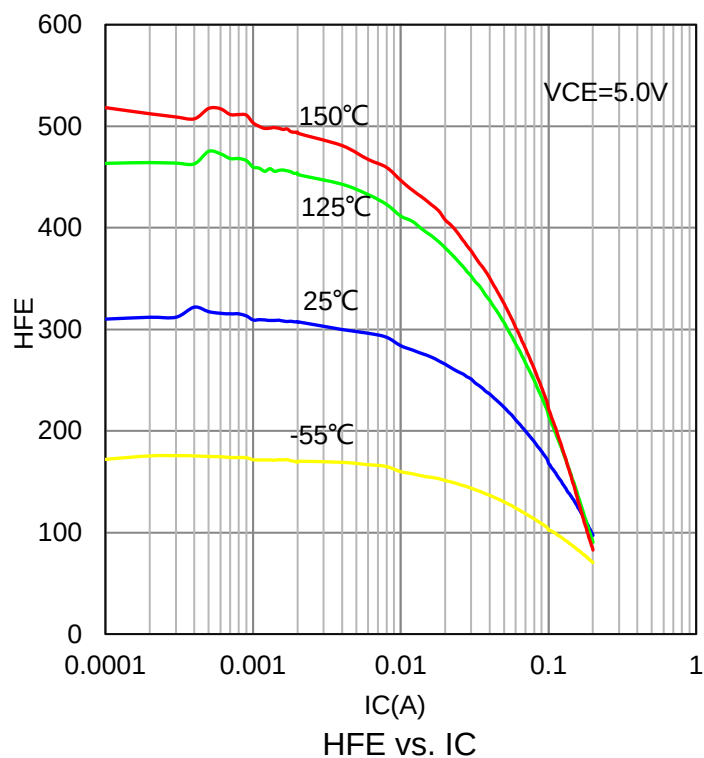
6.ELECTRICAL CHARACTERISTICS CURVES(Con.)

NPN



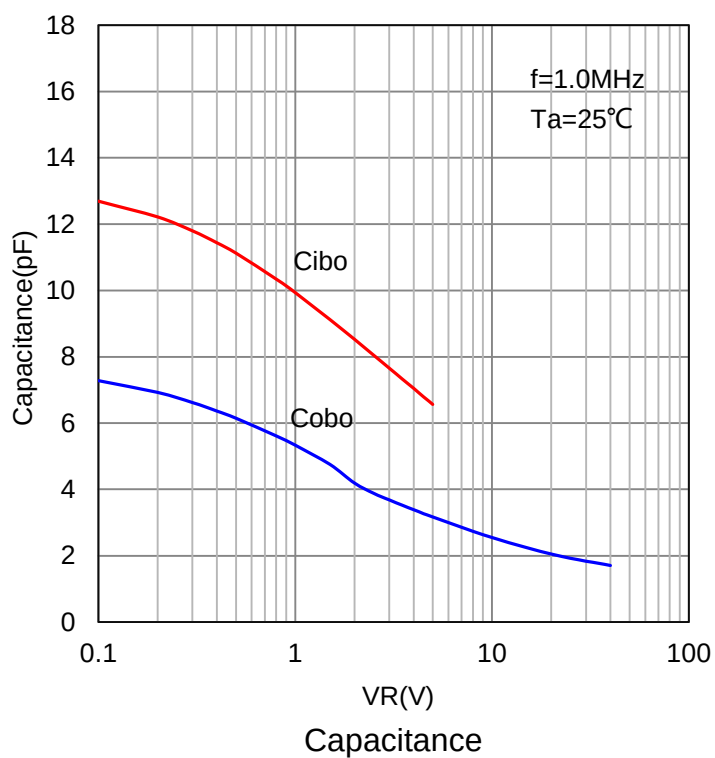
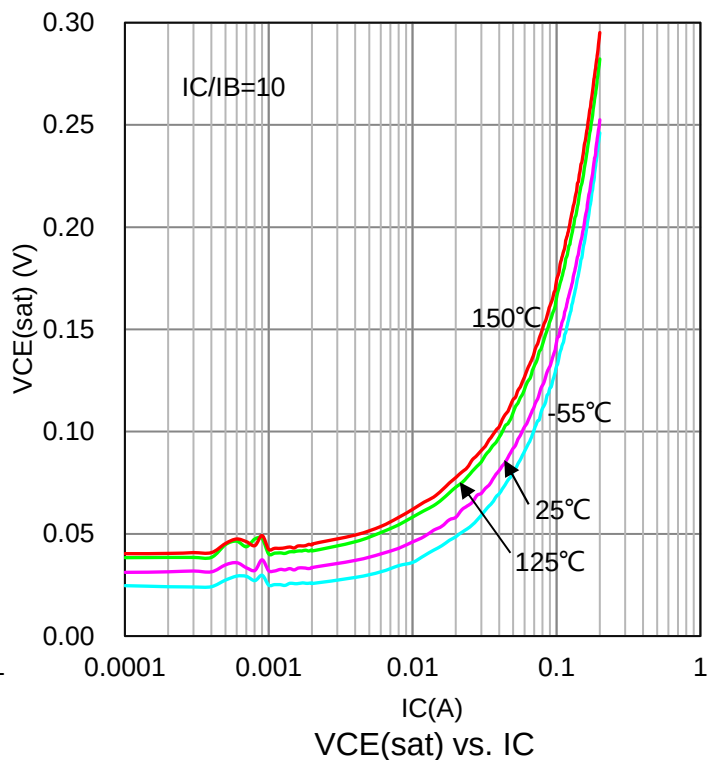
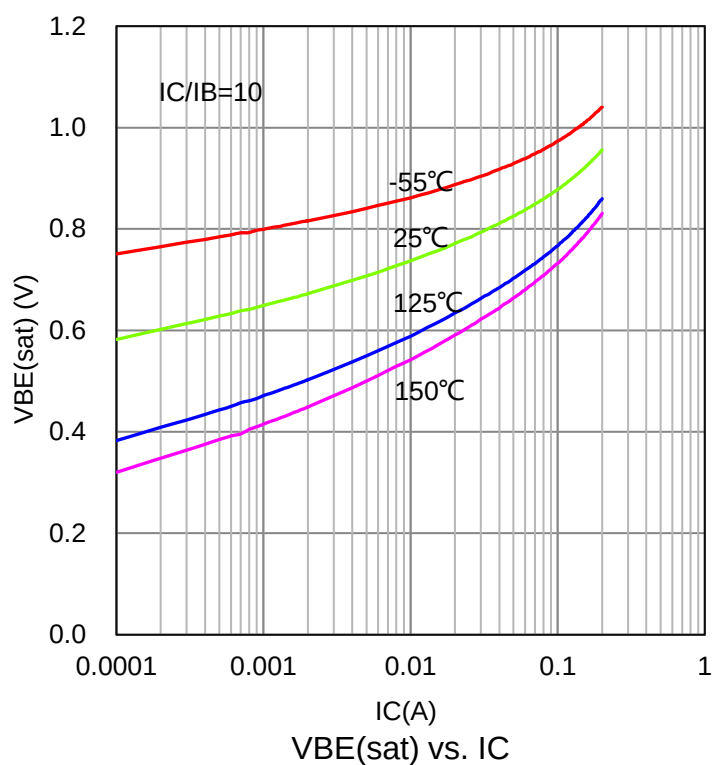
6.ELECTRICAL CHARACTERISTICS CURVES(Con.)

PNP



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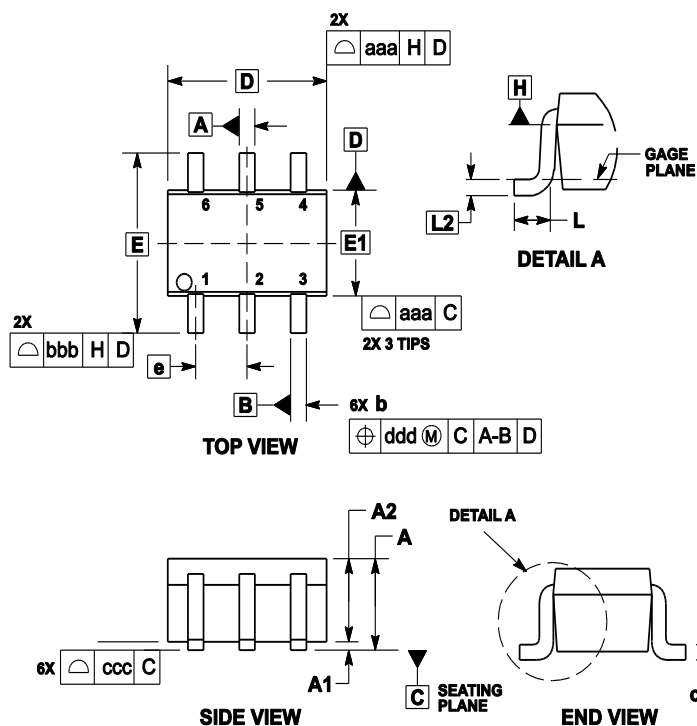
PNP



7.OUTLINE AND DIMENSIONS

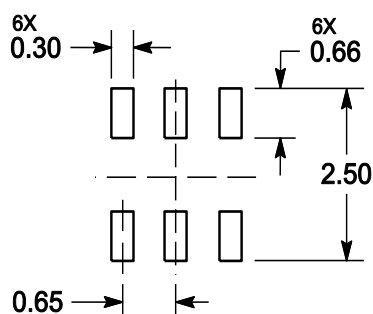
Notes:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	---	---	1.10	---	---	0.043
A1	0.00	---	0.10	0	---	0.004
A2	0.70	0.90	1.00	0.027	0.035	0.039
b	0.15	0.20	0.25	0.006	0.008	0.01
C	0.08	0.15	0.22	0.003	0.006	0.009
D	1.80	2.00	2.20	0.07	0.078	0.086
E	2.00	2.10	2.20	0.078	0.082	0.086
E1	1.15	1.25	1.35	0.045	0.049	0.053
e	0.65 BSC			0.026 BSC		
L	0.26	0.36	0.46	0.010	0.014	0.018
L2	0.15 BSC			0.006 BSC		
aaa	0.15			0.01		
bbb	0.30			0.01		
ccc	0.10			0.00		
ddd	0.10			0.00		

8.SOLDERING FOOTPRINT



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