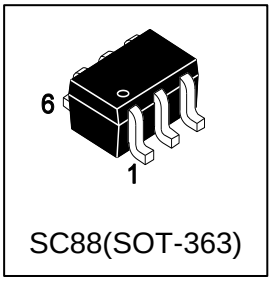
S-LBC847BPDW1T1G

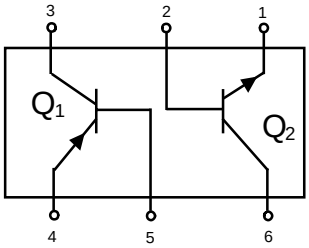
Dual General Purpose Transistors
NPN/PNP Duals (Complimentary)



SC88(SOT-363)

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-LBC847BPDW1T1G	BF	3000/Tape&Reel
S-LBC847BPDW1T3G	BF	13000/Tape&Reel

3. MAXIMUM RATINGS(Ta = 25ºC)

Parameter(NPN)	Symbol	Limits	Unit
Collector–Emitter Voltage	VCEO	45	V
Collector–Base Voltage	VCBO	50	V
Emitter–Base Voltage	VEBO	6	V
Collector Current(Continuous)	IC	100	mA

Parameter(PNP)	Symbol	Limits	Unit
Collector–Emitter Voltage	VCEO	-45	V
Collector–Base Voltage	VCBO	-50	V
Emitter–Base Voltage	VEBO	-5	V
Collector Current(Continuous)	IC	-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/ºC
Thermal Resistance, Junction to Ambient	RθJA	328	ºC/W
Junction and Storage Temperature Range	TJ,Tstg	−55～+150	ºC

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)	V(BR)CEO	45	-	-	V
Collector–Emitter Breakdown Voltage (IC = 10 μA, VEB = 0)	V(BR)CES	50	-	-	V
Collector–Base Breakdown Voltage (IC = 10 μA)	V(BR)CBO	50	-	-	V
Emitter–Base Breakdown Voltage (IE = 1.0 μA)	V(BR)EBO	6	-	-	V
Collector Cutoff Current (VCB = 30 V) (VCB = 30 V, TA = 150°C)	ICBO	- -	- -	15 5	nA μA
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)	- -	0.7 0.9	- -	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 kΩ, f = 1.0 KHz, BW = 200 Hz)	NF	-	-	10	dB

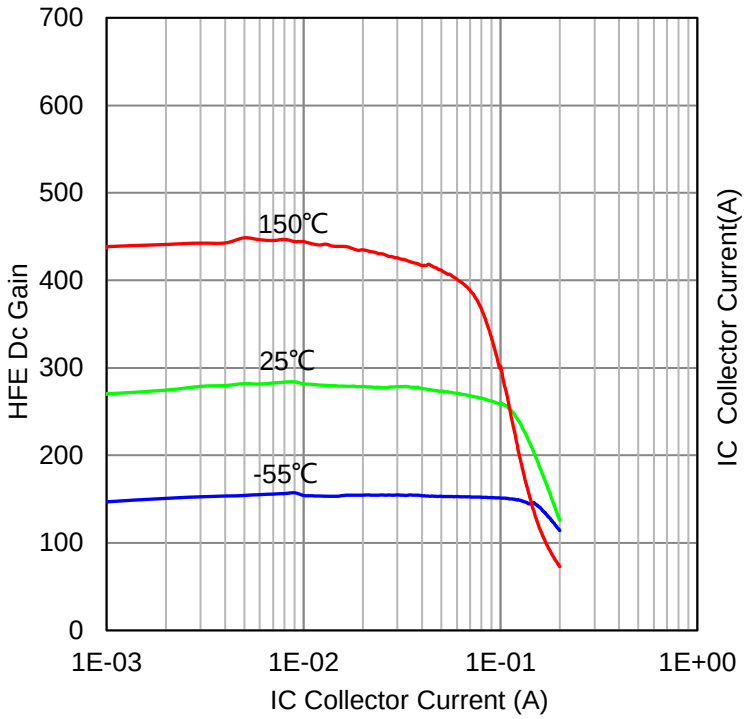
5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

PNP

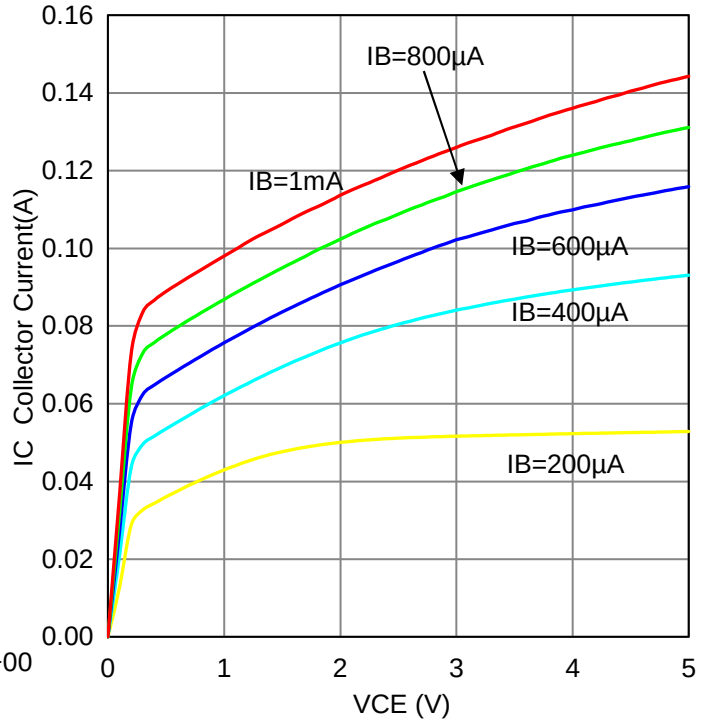
Characteristic	Symbol	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS					
Collector–Emitter Breakdown Voltage (IC = -10 mA)	V(BR)CEO	-45	-	-	V
Collector–Emitter Breakdown Voltage (IC = -10 µA, VEB = 0)	V(BR)CES	-50	-	-	V
Collector–Base Breakdown Voltage (IC = -10 µA)	V(BR)CBO	-50	-	-	V
Emitter–Base Breakdown Voltage (IE = -1.0 µA)	V(BR)EBO	-5	-	-	V
Collector Cutoff Current (VCB = -30 V) (VCB = -30 V, TA = 150°C)	ICBO	- -	- -	-15 -4	nA µA
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)	- -	-0.7 -0.9	- -	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

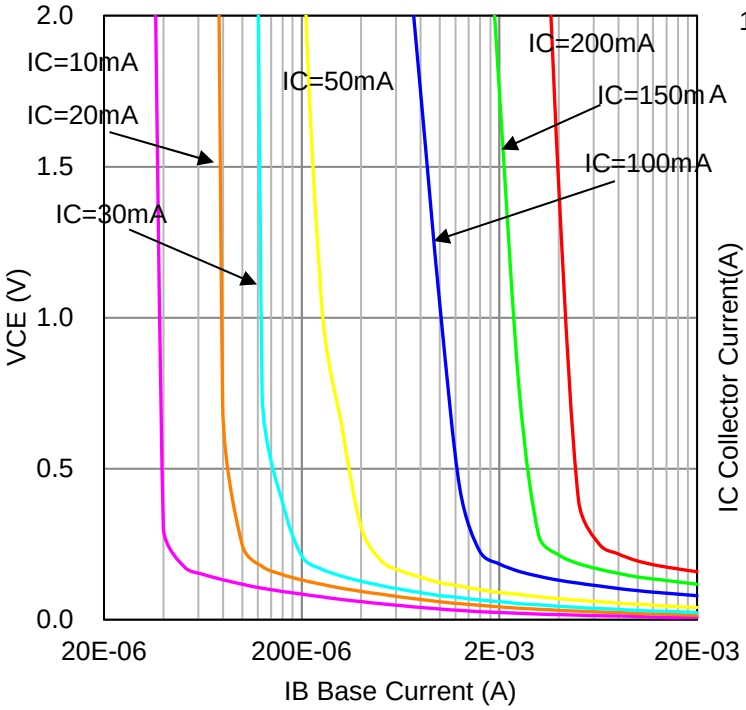
NPN



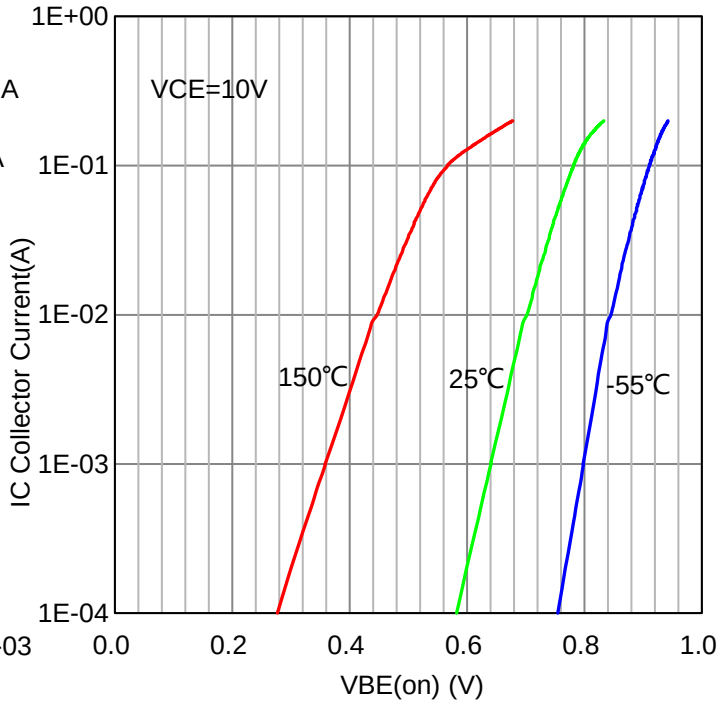
HFE vs. IC



IC vs. VCE



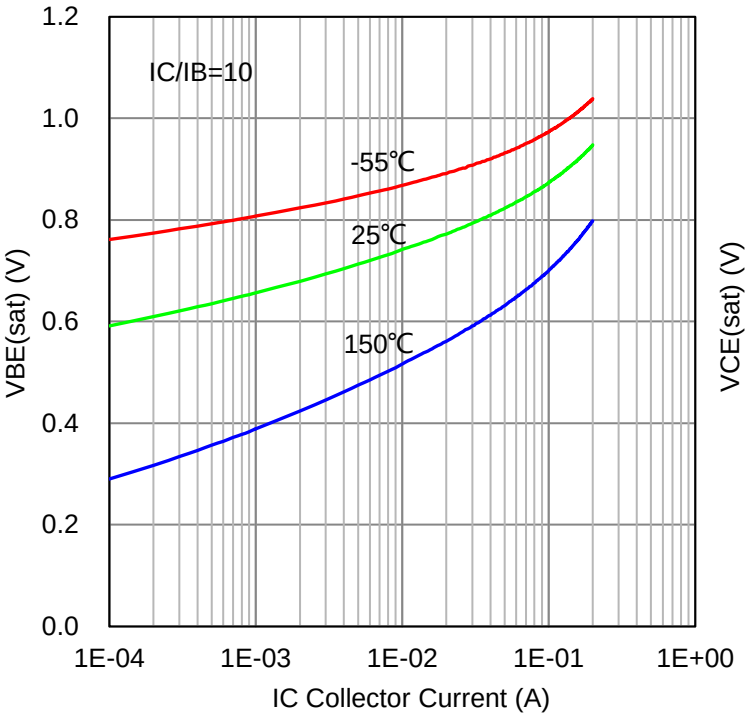
VCE vs. IB



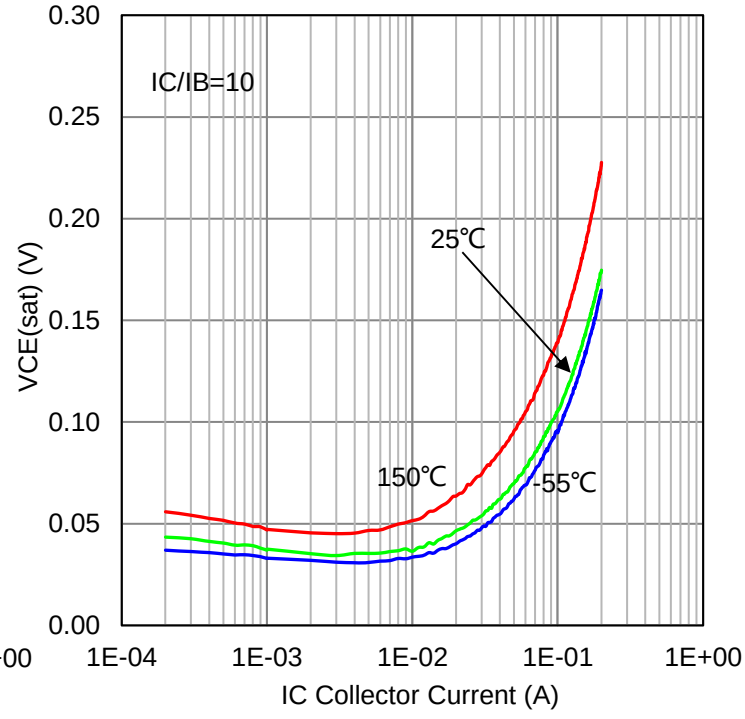
IC vs. VBE(on)

6.ELECTRICAL CHARACTERISTICS CURVES(Con.)

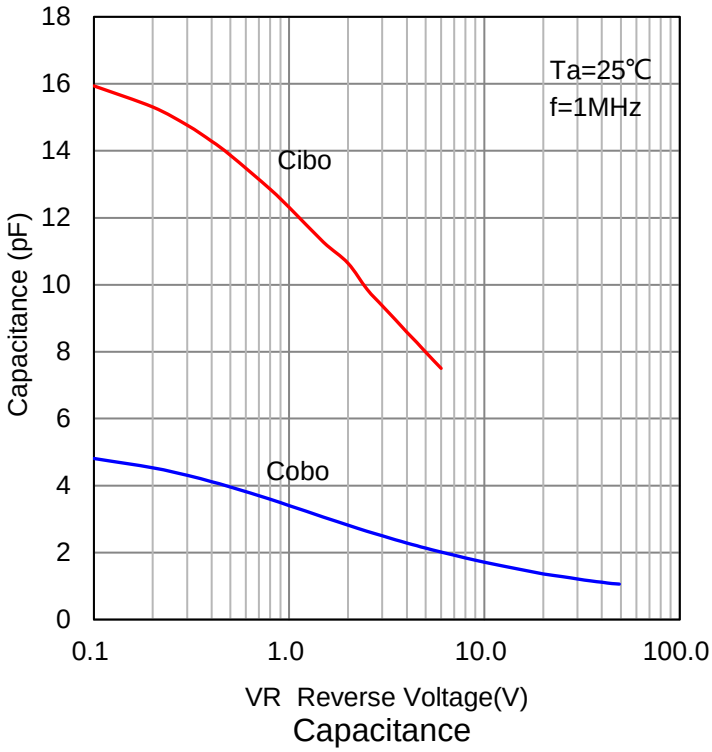
NPN



VBE(sat) vs. IC



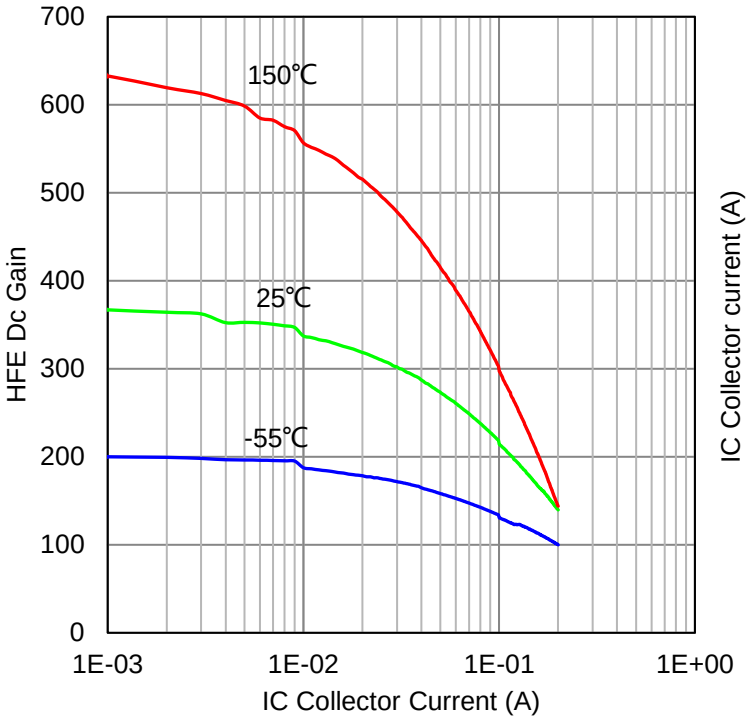
VCE(sat) vs. IC



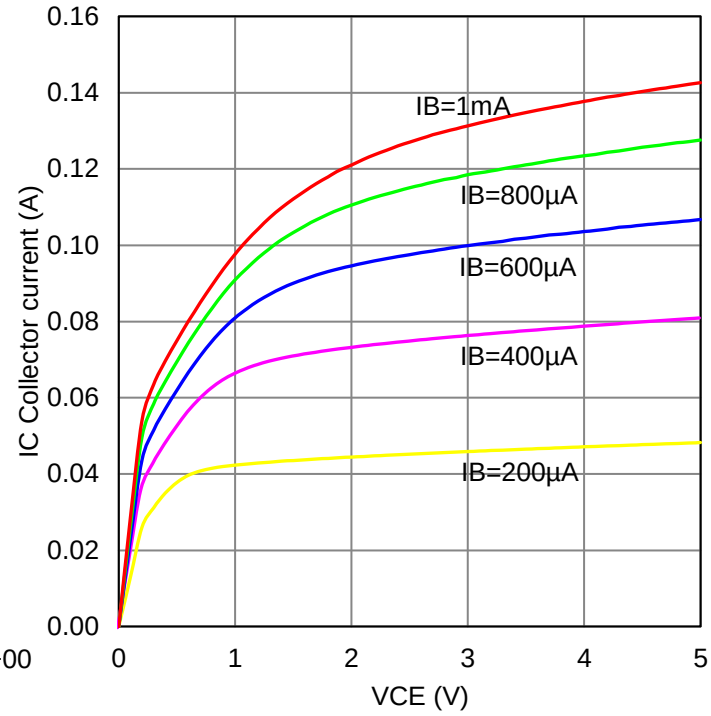
Capacitance

6.ELECTRICAL CHARACTERISTICS CURVES(Con.)

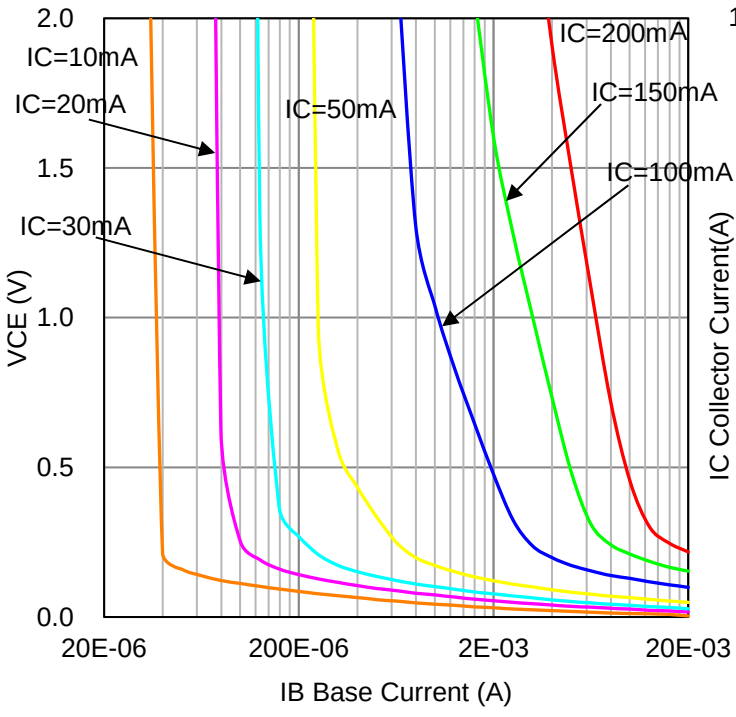
PNP



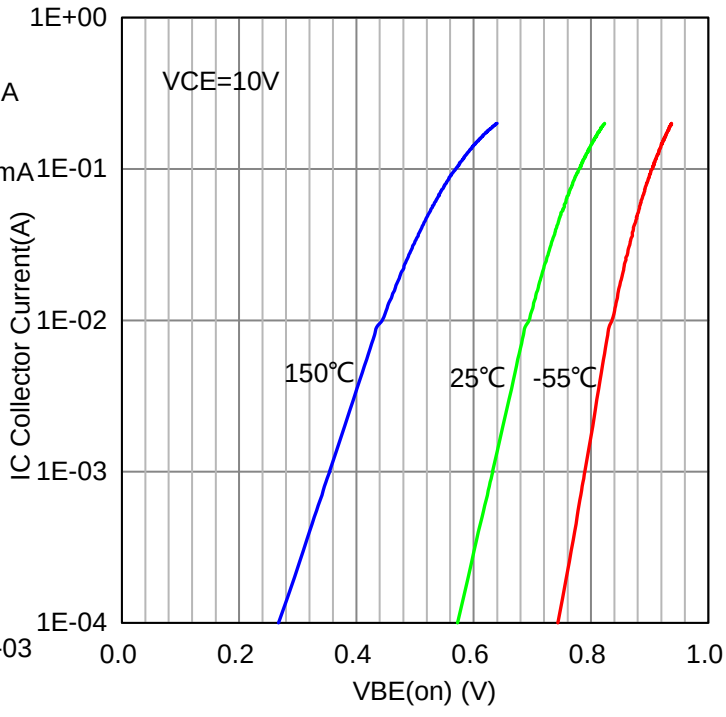
HFE vs. IC



IC vs. VCE



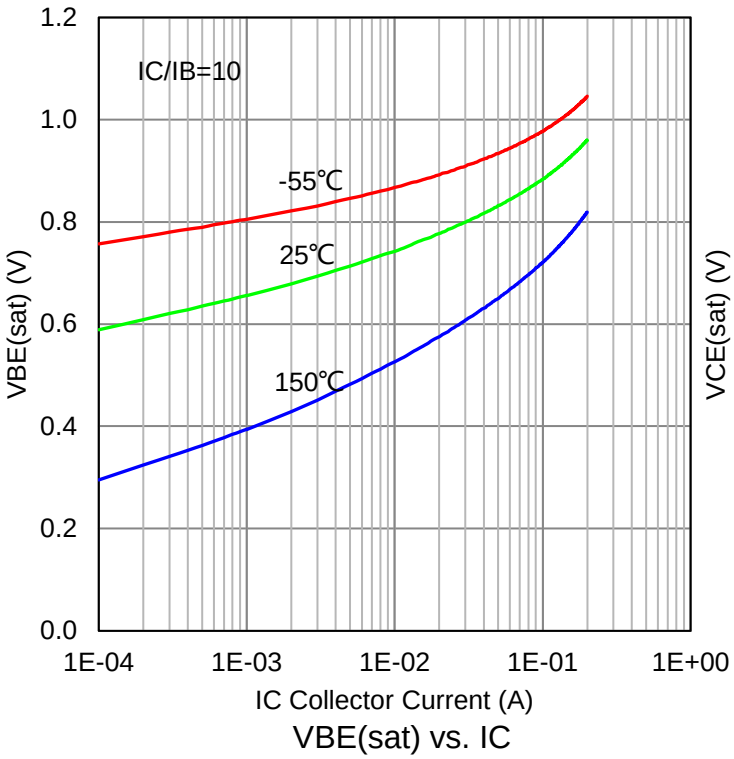
VCE vs. IB



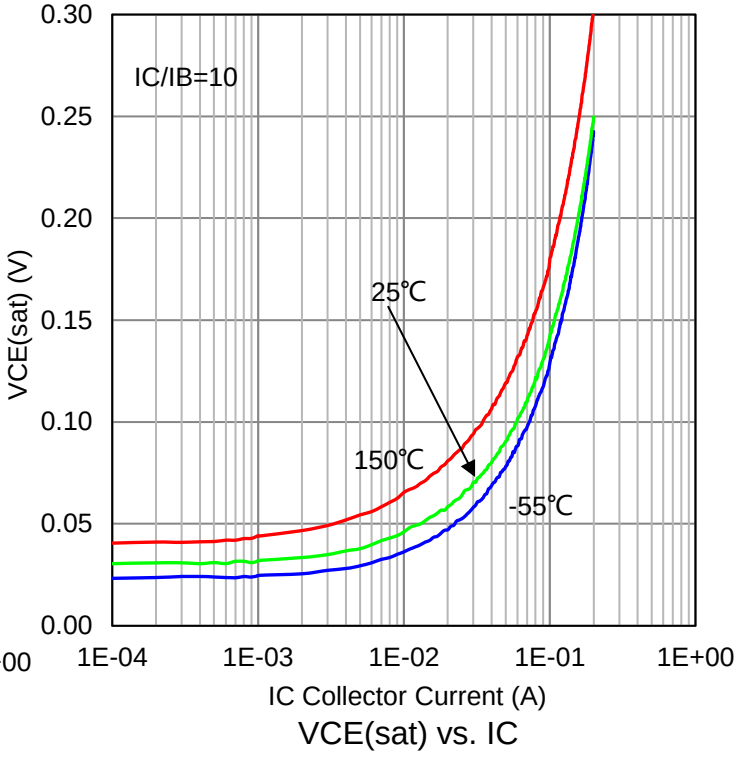
IC vs. VBE(on)

6.ELECTRICAL CHARACTERISTICS CURVES(Con.)

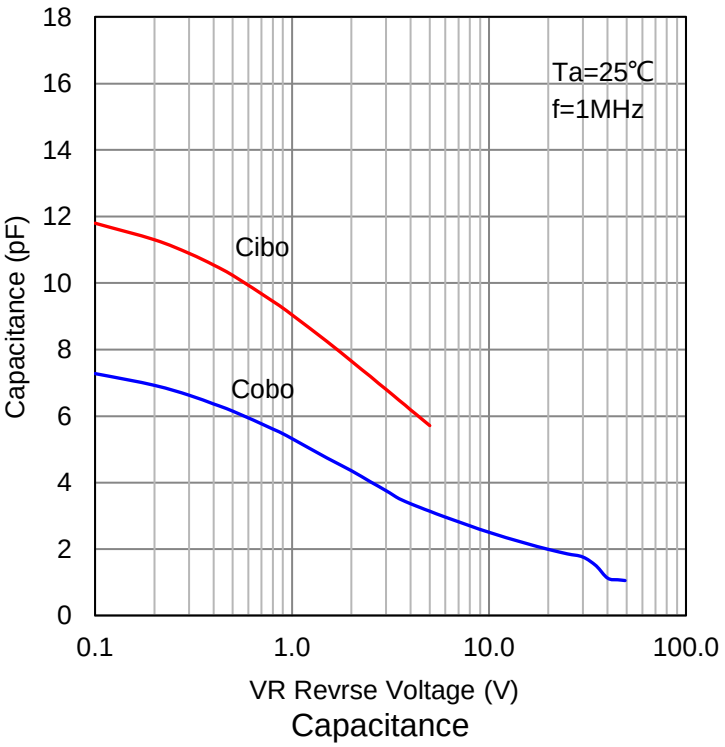
PNP



VBE(sat) vs. IC

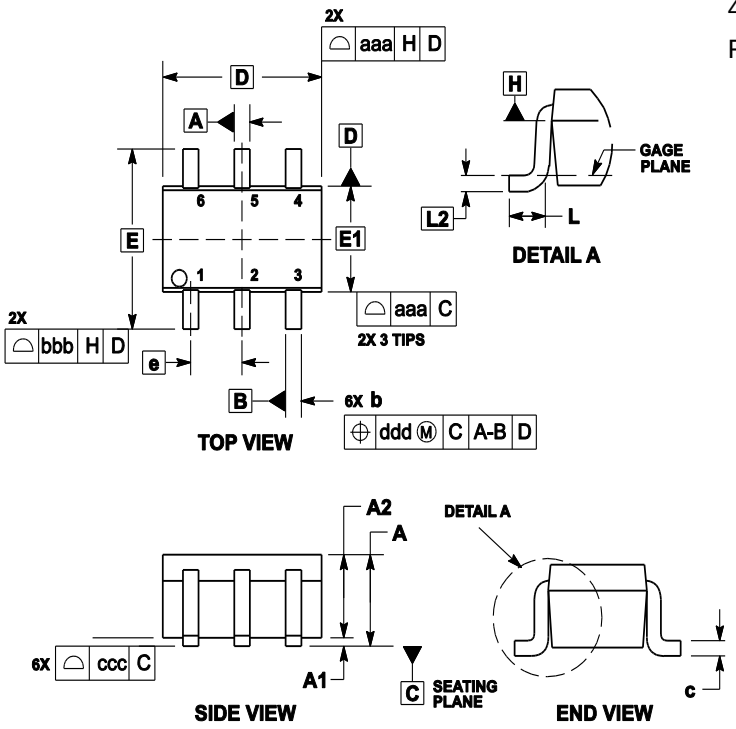


VCE(sat) vs. IC



Capacitance

7.OUTLINE AND DIMENSIONS

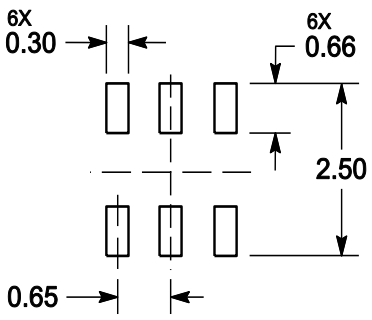


Notes:

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.

	MILLIMETERS			INCHES		
DIM	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



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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