BC856~BC858

ROHS

Plastic-Encapsulate Transistor(PNP)

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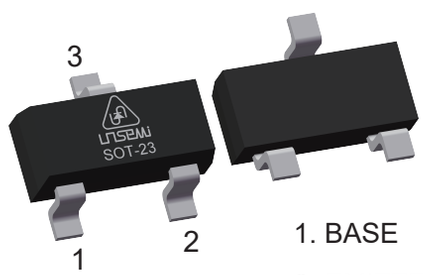
Features

- ◆ Ideally Suited for Automatic Insertion
- ◆ For Switching and AF Amplifier Applications

Mechanical Data

- ◆ JEDEC SOT-23 Package
- ◆ Molding Compound Flammability Rating : UL 94V-O
- ◆ Quantity Per Reel : 3,000pcs
- ◆ Marking : BC856A:3A , BC856B:3B
  BC857A:3E , BC857B:3F , BC857C:3G
  BC858A:3J , BC858B:3K , BC858C:3L

SOT-23



1. BASE
2. EMITTER
3. COLLECTOR

Maximum Ratings (T_A=25℃ Unless Otherwise Noted)

Parameter	Symbol	BC856	BC857	BC858	Units
Collector-Base Voltage	V_{CBO}	-80	-50	-30	V
Collector-Emitter Voltage	V_{CEO}	-65	-45	-30	V
Emitter-Base Voltage	V_{EBO}	-5.0			V
Collector Current	I_C	-0.1			A
Collector Power Dissipation	P_C	0.2			W
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	625			℃/W
Junction Temperature Range	T_J	-55~+150			℃
Storage Temperature Range	Tstg	-55~+150			℃

Electrical Characteristics(T_A=25℃ Unless Otherwise Specified)

Parameter	Symbol	Test Conditions		Min.	Max.	Units
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = -10μA, I_E = 0	BC856	-80		V
			BC857	-50		
			BC858	-30		
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = -10mA, I_B = 0	BC856	-65		V
			BC857	-45		
			BC858	-30		
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = -1μA, I_C = 0		-5.0		V
Collector Cut-Off current	I_{CBO}	V_{CB} = -70V, I_E = 0	BC856		-0.1	μA
		V_{CB} = -45V, I_E = 0	BC857			
		V_{CB} = -25V, I_E = 0	BC858			
Emitter Cut-Off current	I_{EBO}	V_{EB} = -5V, I_C = 0			-0.1	μA
DC Current Gain	h_{FE}	V_{CE} = -5V, I_C = -2mA	BC856A/57A/58A	125	250	
			BC856B/57B/58B	220	475	
			BC857C/58C	420	800	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = -100mA, I_B = -5mA			-0.5	V
Base-Emitter Voltage	$V_{BE(sat)}$	I_C = -100mA, I_B = -5mA			-1.1	V
Transition Frequency	f_T	V_{CE} = -5V, I_C = -10mA, f = 100MHz		100		MHz
Collector Output Capacitance	Cob	V_{CB} = -10V, f =1MHz			4.5	pF

Electrical Characteristics Curves

Fig. 1 Static Characteristic

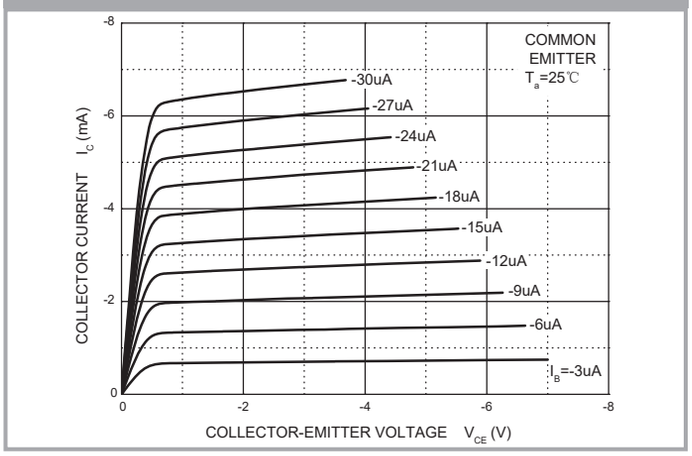


Fig. 2 hFE — Ic

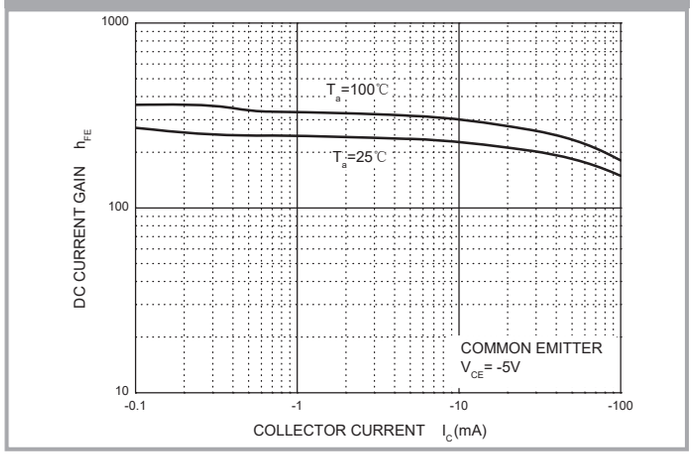


Fig. 3 $V_{CE(sat)}$ — Ic

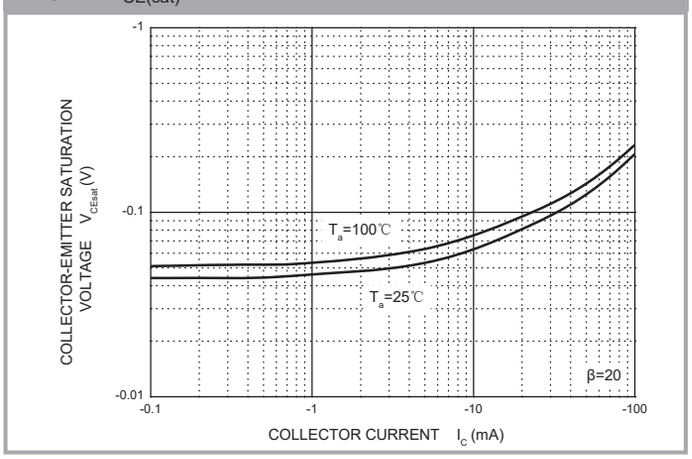


Fig. 4 $V_{BE(sat)}$ — Ic

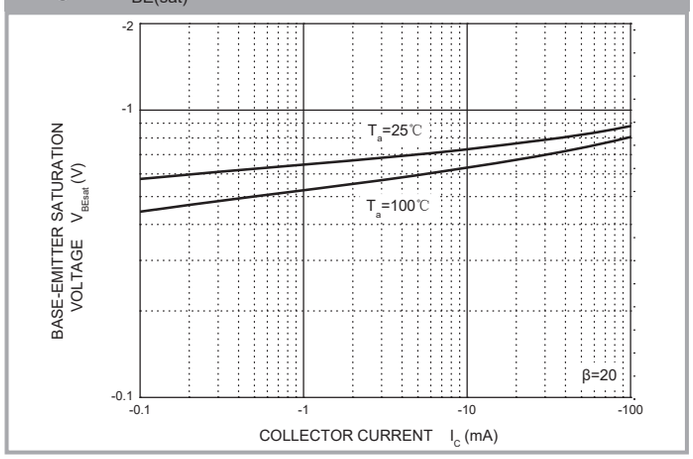


Fig. 5 Ic — VBE

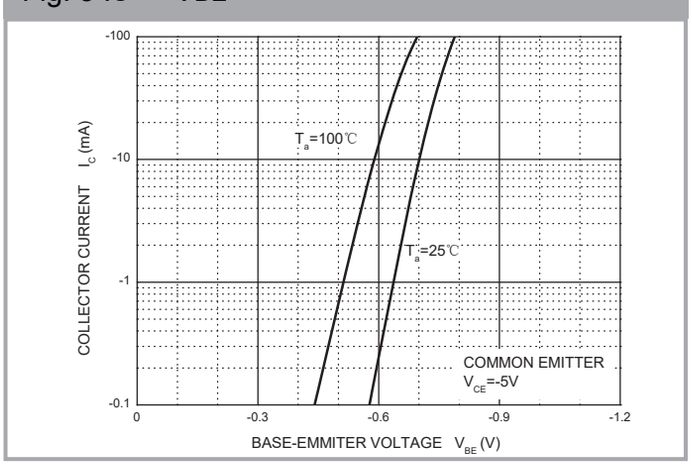
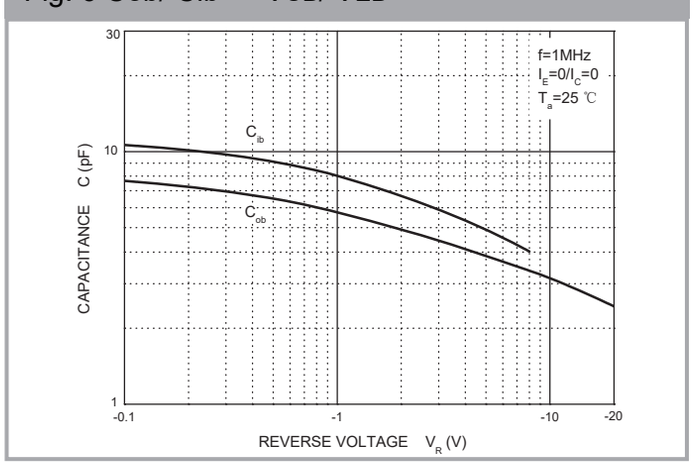


Fig. 6 Cob/ Cib — VCB/ VEB



Electrical Characteristics Curves

Fig. 7 fT — Ic

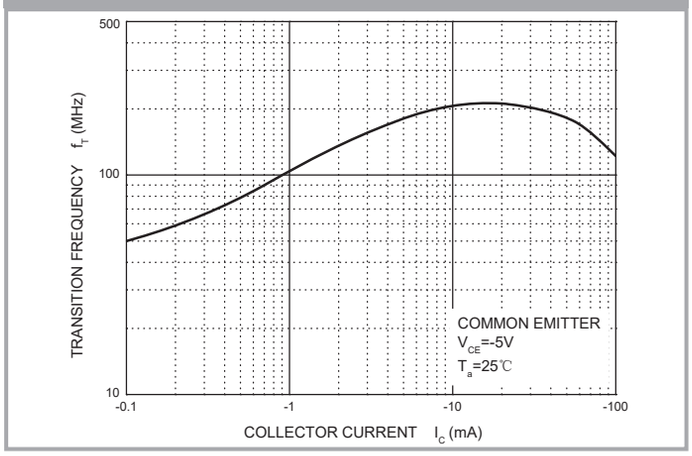
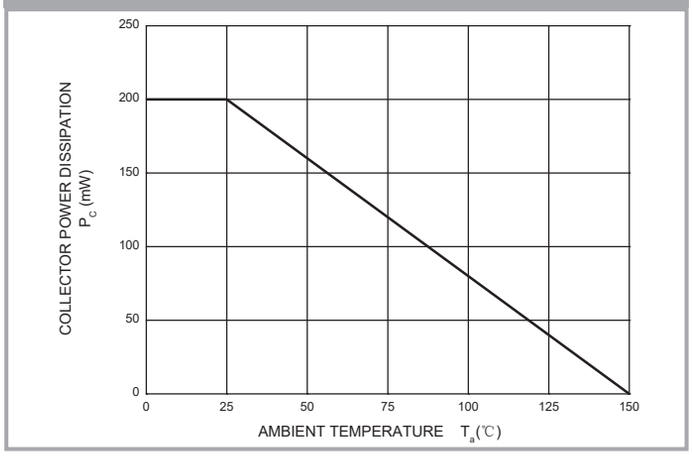
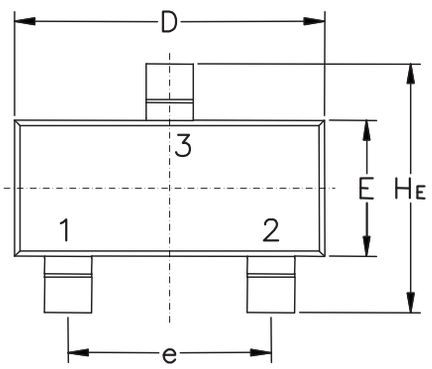


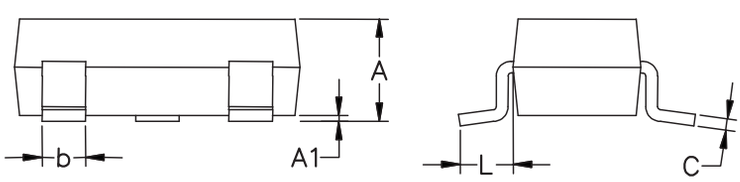
Fig. 8 Pc — Ta



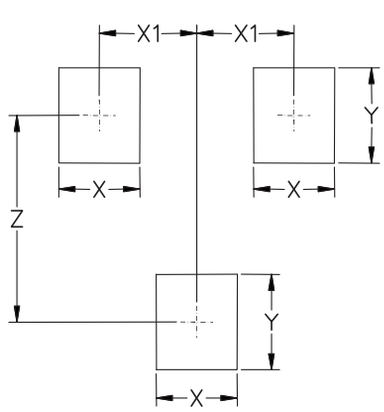
SOT-23 Package Outine & Dimensions (Units: mm / in)



Symbol	Millimeters			Inches		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	1.05	1.11	1.25	0.042	0.044	0.050
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.30	0.44	0.50	0.012	0.018	0.020
C	0.09	0.13	0.20	0.003	0.005	0.008
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.50	1.60	1.70	0.059	0.051	0.067
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.35	0.54	0.69	0.014	0.021	0.027
HE	2.65	2.80	2.95	0.104	0.112	0.116



Soldering Footprint



Symbol	Millimeters	Inches
X	0.80	0.031
X1	0.96	0.037
Y	0.90	0.035
Z	2.40	0.096

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