

FEATURES

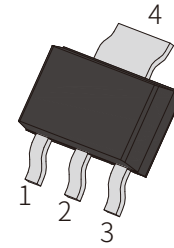
Low collector-emitter saturation voltage

MECHANICAL DATA

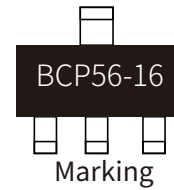
SOT-223 small outline plastic package

Epoxy UL: 94V-0

Mounting position: Any



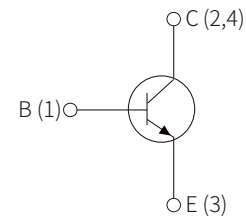
SOT-223



Marking

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003



Schematic Symbol

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Conditions	Value	Unit
Minimum Collector-Emitter Voltage	V_{CE0}	$I_C=10\text{mA}$, $I_B=0$	80	V
Minimum Collector-Base Voltage	V_{CBO}	$I_C=100\mu\text{A}$, $I_E=0$	100	
Minimum Emitter-Base Voltage	V_{EBO}	$I_E=10\mu\text{A}$, $I_C=0$	5	
Collector Current	I_C		1	A
Power Dissipation	P_D		1.5	W
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$		83.3	$^{\circ}\text{C/W}$
Storage Operation Junction and Storage Temperature Range	T_J, T_{STG}		-55~+150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$)

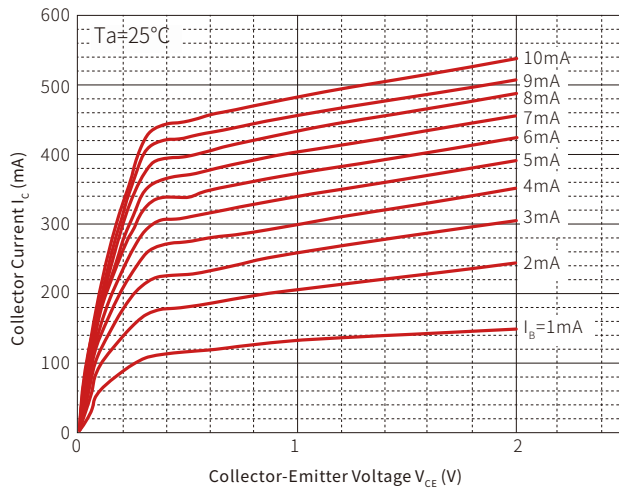
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-Emitter Voltage	V_{CEO}	$I_C=10\text{mA}, I_B=0$	80			V
Collector-Base Voltage	V_{CBO}	$I_C=100\mu\text{A}, I_E=0$	100			
Emitter-Base Voltage	V_{EBO}	$I_E=10\mu\text{A}, I_C=0$	5			
Collector-Base cut-off current	I_{CBO}	$V_{CB}=30\text{V}$			100	nA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=2\text{V}, I_C=5\text{mA}$	25			
	$h_{FE(2)}$	$V_{CE}=2\text{V}, I_C=150\text{mA}$	63		250	
	$h_{FE(3)}$	$V_{CE}=2\text{V}, I_C=500\text{mA}$	25			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			0.5	V
Base-Emitter Voltage	V_{BE}	$V_{CE}=2\text{V}, I_C=500\text{mA}$			1	V
Transition Frequency	f_T	$V_{CE}=5\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	100			MHz

CLASSIFICATION OF $h_{FE(2)}$

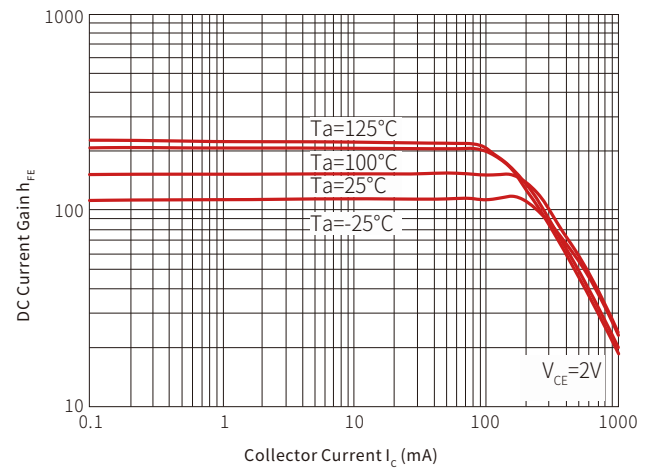
Rank	BCP56	BCP56-16
Range	63-250	100-250

TYPICAL CHARACTERISTICS

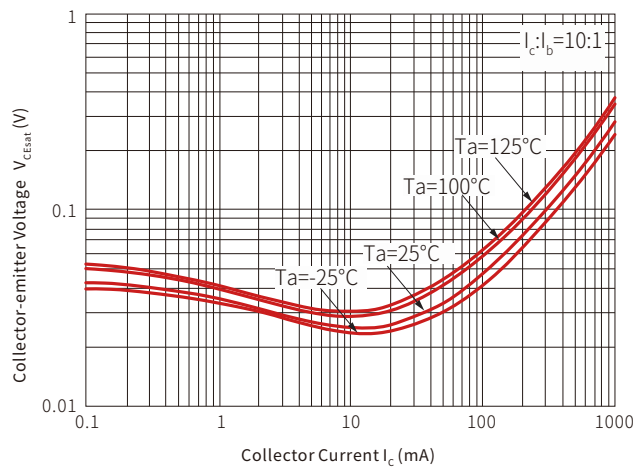
Static Characteristic



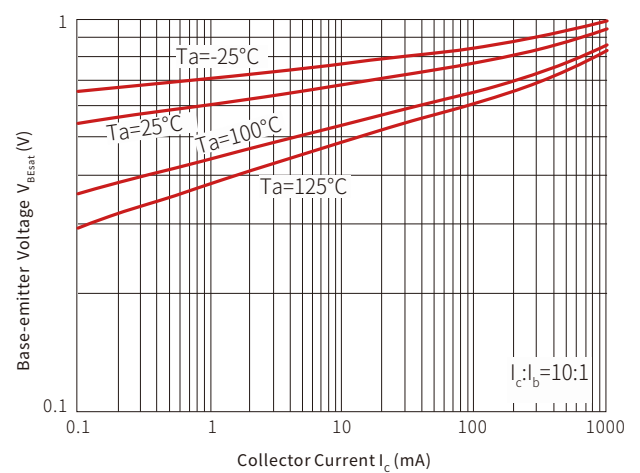
DC Current Gain



Collector-Emitter Saturation Voltage

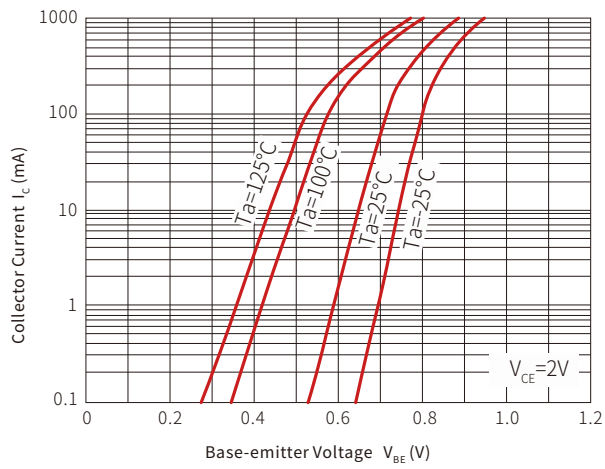


Base-Emitter Saturation Voltage

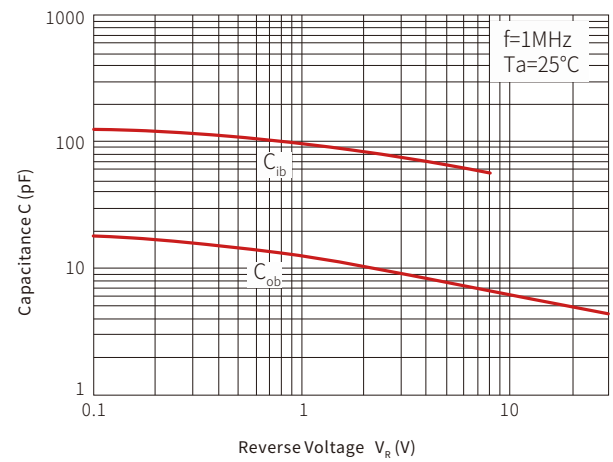




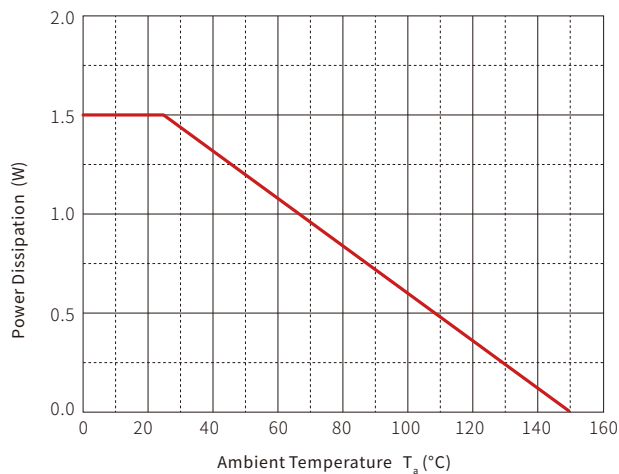
Base-Emitter On Voltage



C_{ob}/C_{ib} — V_{CB}/V_{EB}

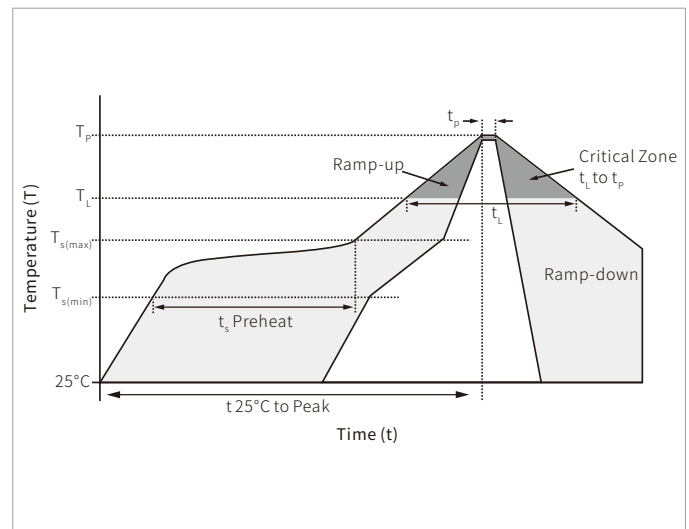


Power Derating Curve

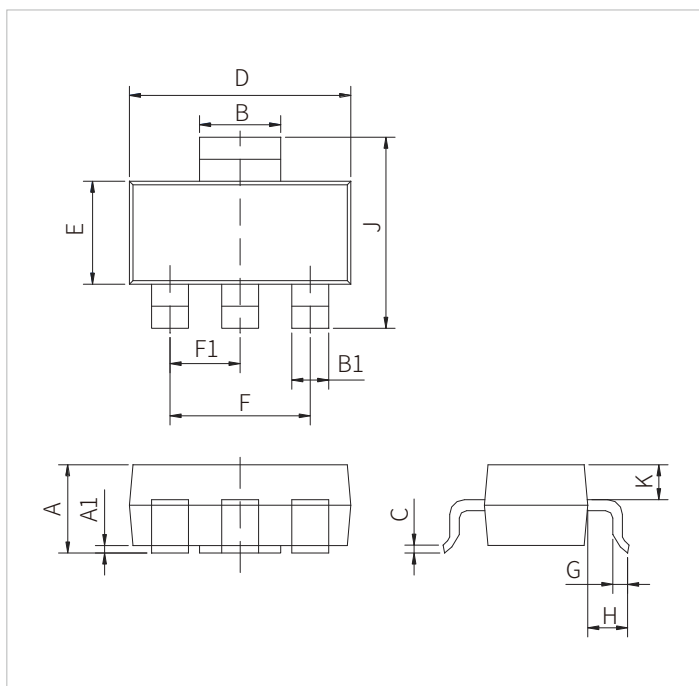


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_i) (Liquidus)	217°C
	Time (min to max) (t_i)	60 – 150 seconds
Peak Temperature (T_p)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C



SOT-223 PACKAGE DIMENSIONS



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.50		1.80	0.059		0.071
A1	0.01		0.06	0.001		0.002
B	2.90		3.10	0.114		0.122
B1	0.60		0.80	0.024		0.031
C	0.22		0.32	0.009		0.013
D	6.30		6.70	0.248		0.264
E	3.30		3.70	0.130		0.146
F		4.60			0.181	
F1		2.30			0.091	
G	0.70		1.10	0.028		0.043
H	1.50		2.00	0.059		0.079
J	6.70		7.30	0.264		0.287
K		0.90			0.035	

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Box	Carton	Reel Size
BCP56-16	SOT-223	2500PCS	5000PCS	25000PCS	13"

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