

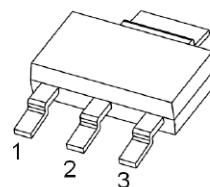
SOT-223 Plastic-Encapsulate Transistors

TRANSISTOR (NPN)

SOT-223

FEATURES

- For AF driver and output stages
- High collector current
- Low collector-emitter saturation voltage
- Complementary types: BCP51 ... BCP53 (PNP)



1. BASE
2. COLLECTOR
3. EMITTER

MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

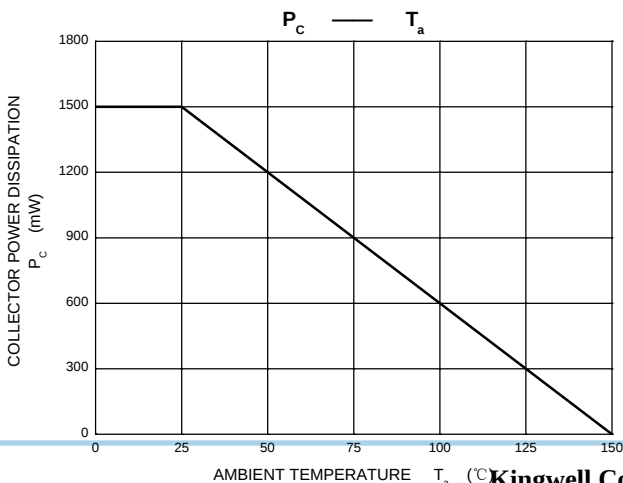
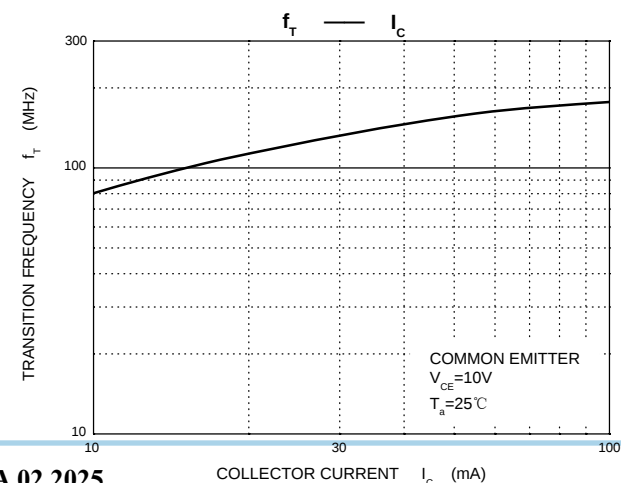
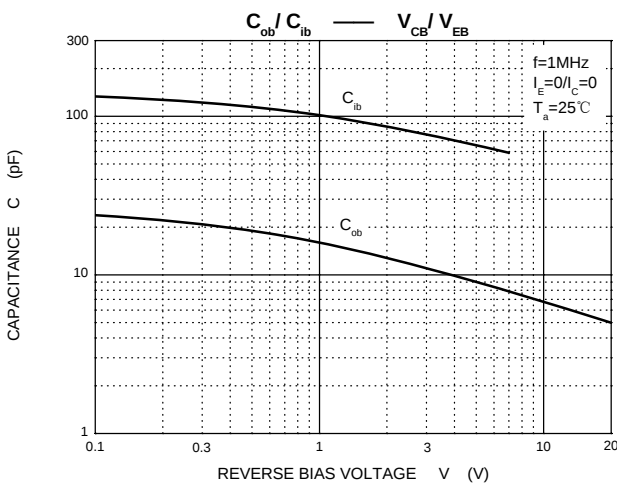
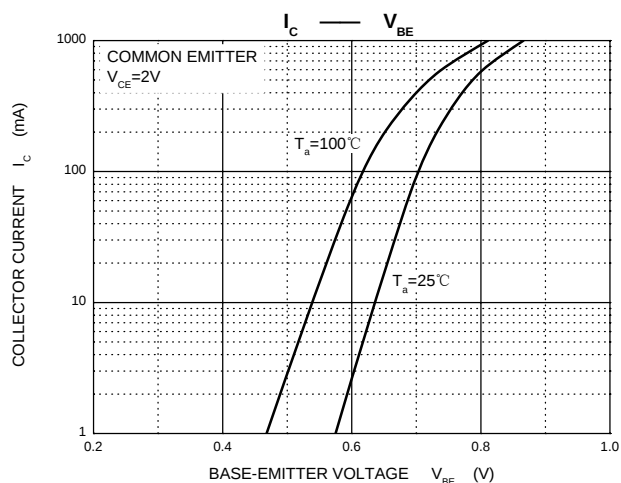
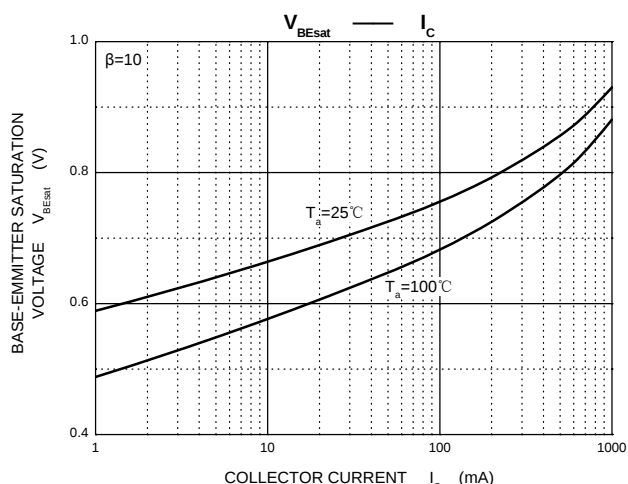
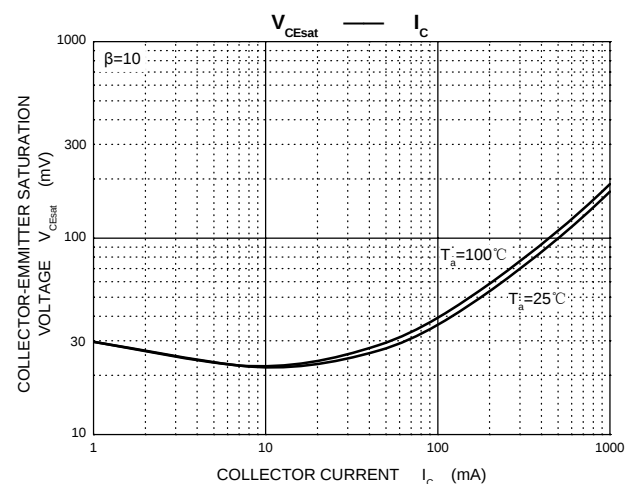
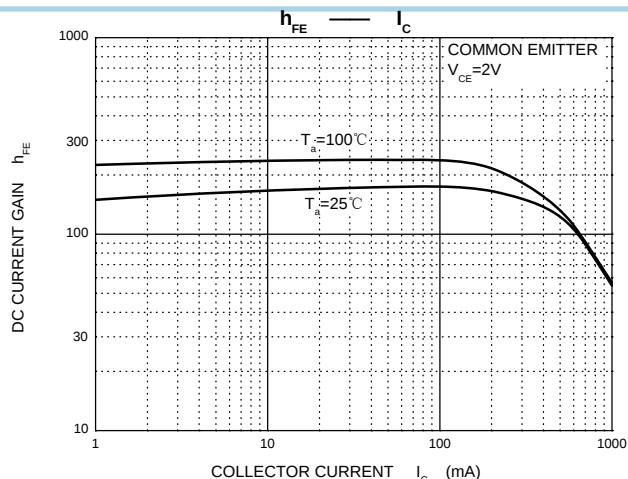
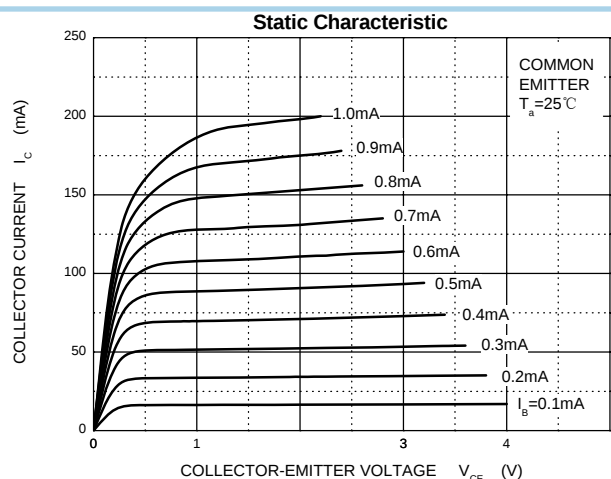
Symbol	Parameter	KLBCX54	KLBCX55	KLBCX56	Unit
V_{CBO}	Collector-Base Voltage	45	60	100	V
V_{CEO}	Collector-Emitter Voltage	45	60	80	V
V_{EBO}	Emitter-Base Voltage	5			V
I_C	Collector Current -Continuous	1			A
I_{CM}	Peak Pulse Collector Current	2			A
I_B	Base Current-Continuous	100			mA
I_{BM}	Peak Pulse Base Current	200			mA
P_C	Collector Power Dissipation	1.5			W
T_J, T_{stg}	Operation Junction and Storage Temperature Range	$-55\sim+150$			$^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	83.3			$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise specified)

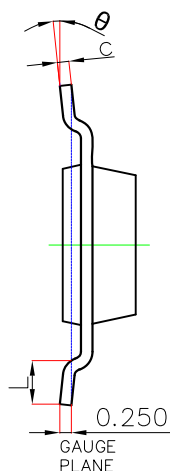
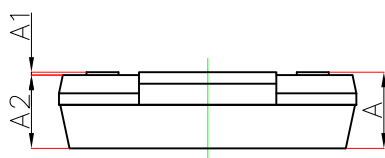
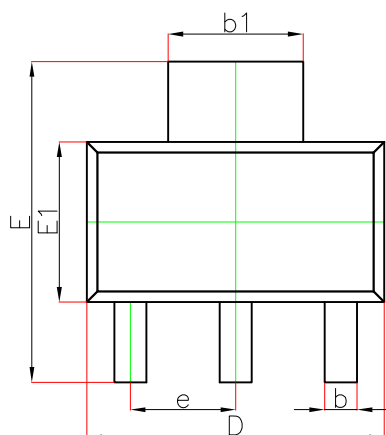
Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	KLBCX54 KLBCX55 KLBCX56	$V_{(BR)CBO}$ $I_C=0.1\text{mA}, I_E=0$	45 60 100		V
Collector-emitter breakdown voltage	KLBCX54 KLBCX55 KLBCX56	$V_{(BR)CEO}$ $I_C=10\text{mA}, I_B=0$	45 60 80		V
Base-emitter breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	5		
Collector cut-off current	I_{CBO}	$V_{CB}=30\text{V}, I_E=0$		100	V
DC current gain	$h_{FE(1)}$	$V_{CE}=2\text{V}, I_C=5\text{mA}$	25		nA
	$h_{FE(2)}$	$V_{CE}=2\text{V}, I_C=150\text{mA}$	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	$V_{CE}=10\text{V}, I_C=50\text{mA}, f=100\text{MHz}$	100		MHz

CLASSIFICATION OF $h_{FE(2)}$

Rank	KLBCX54-10, KLBCX55-10, KLBCX56-10	KLBCX54-16, KLBCX55-16, KLBCX56-16
Range	63-160	100-250
Marking	BCP54-10, BCP55-10, BCP56-10	BCP54-16, BCP55-16, BCP56-16

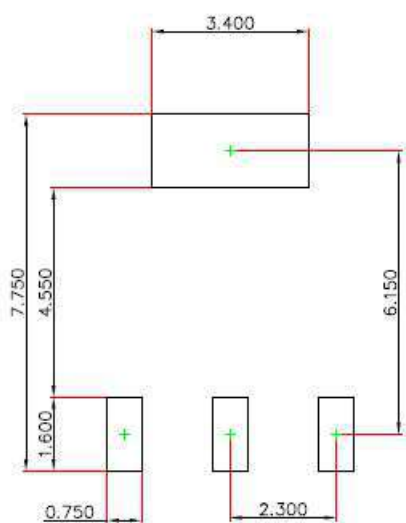


SOT-223 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	—	1.800	—	0.071
A1	0.020	0.100	0.001	0.004
A2	1.500	1.700	0.059	0.067
b	0.660	0.840	0.026	0.033
b1	2.900	3.100	0.114	0.122
c	0.230	0.350	0.009	0.014
D	6.300	6.700	0.248	0.264
E	6.700	7.300	0.264	0.287
E1	3.300	3.700	0.130	0.146
e	2.300(BSC)		0.091(BSC)	
L	0.750	—	0.030	—
θ	0°	10°	0°	10°

SOT-223 Suggested Pad Layout

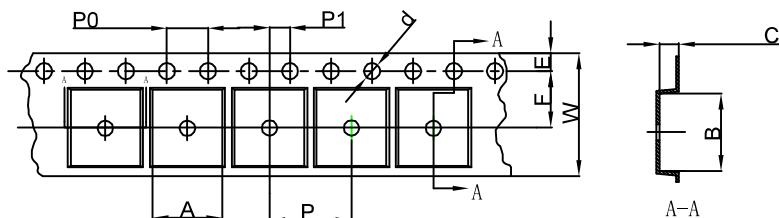


Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.050\text{mm}$.
3. The pad layout is for reference purposes only.

SOT-223 Tape and Reel

SOT-223 Embossed Carrier Tape

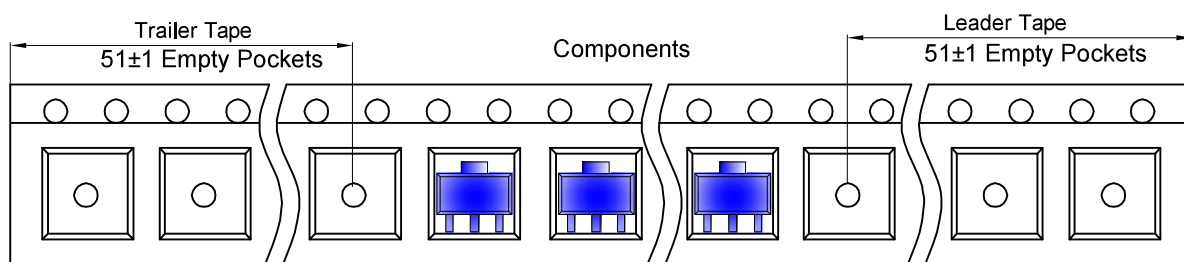


Packaging Description:

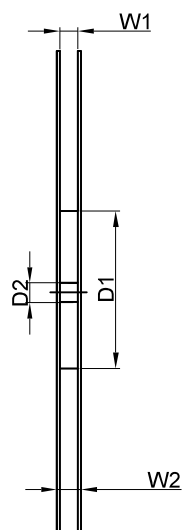
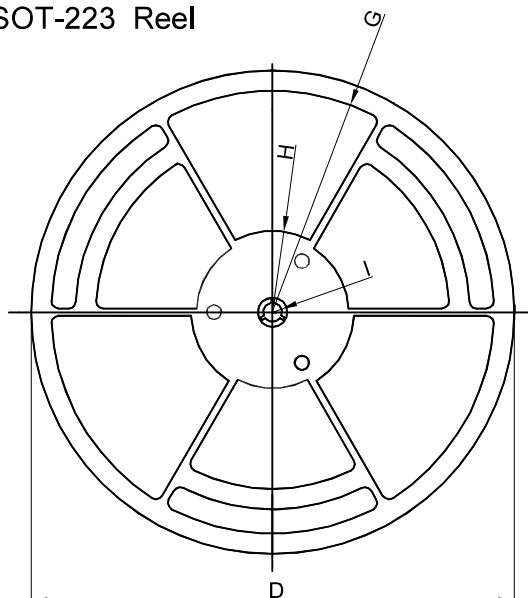
SOT-223 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 2,500 units per 13" or 33.0cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-223	6.765	7.335	1.88	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

SOT-223 Tape Leader and Trailer



SOT-223 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
13"Dia	Ø330.00	100.00	13.00	R151.00	R56.00	R6.50	12.40	17.60

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
2,500 pcs	13 inch	2,500 pcs	336×336×48	20,000 pcs	445×355×365	