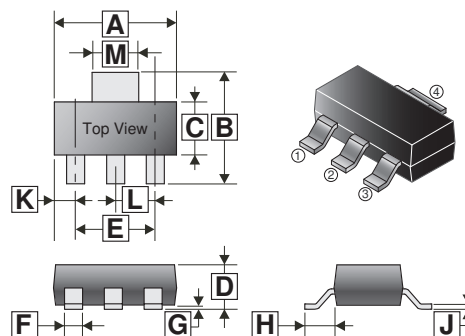


RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

## FEATURES

- For AF Driver and Output Stages
- High Collector Current
- Low Collector-Emitter Saturation Voltage
- Complementary Types: BCP51CR-C~BCP53CR-C (PNP)
- Qualified to AEC-Q101 Standards for High Reliability

## SOT-223



## CLASSIFICATION OF $h_{FE}$

Rank	10	16
Range	63~160	100~250

## PACKAGE INFORMATION

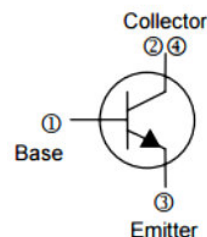
Package	MPQ	Leader Size
SOT-223	2.5K	13 inch

REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.90	6.70	G	-	0.18
B	6.70	7.30	H	2.00	REF.
C	3.30	3.80	J	0.20	0.40
D	1.40	1.90	K	1.10	REF.
E	4.60	REF.	L	2.30	REF.
F	0.60	0.85	M	2.80	3.20

## ORDER INFORMATION

Part Number	Marking	Type
BCP54CR-□□-C	BCP54-□□	Lead (Pb)-free and Halogen-free
BCP55CR-□□-C	BCP55-□□	
BCP56CR-□□-C	BCP56-□□	

\*□=Rank



## ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise specified)

Parameter	Symbol	Ratings			Unit
		BCP54CR	BCP55CR	BCP56CR	
Collector-Base Voltage	V <sub>CB0</sub>	45	60	100	V
Collector-Emitter Voltage	V <sub>CE0</sub>	45	60	80	V
Emitter-Base Voltage	V <sub>EBO</sub>	5			V
Collector Current-Continuous <sup>1</sup>	I <sub>C</sub>	1			A
Peak Pulsed Collector Current	I <sub>CM</sub>	2			
Base Continuous Current	I <sub>B</sub>	100			mA
Peak Pulsed Base Current	I <sub>BM</sub>	200			
Collector Power Dissipation <sup>1</sup>	P <sub>C</sub>	1.5			W
Thermal Resistance from Junction-Ambient <sup>2</sup>	R <sub>θJA</sub>	83.3			°C/W
Operating Junction, Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55~150			°C

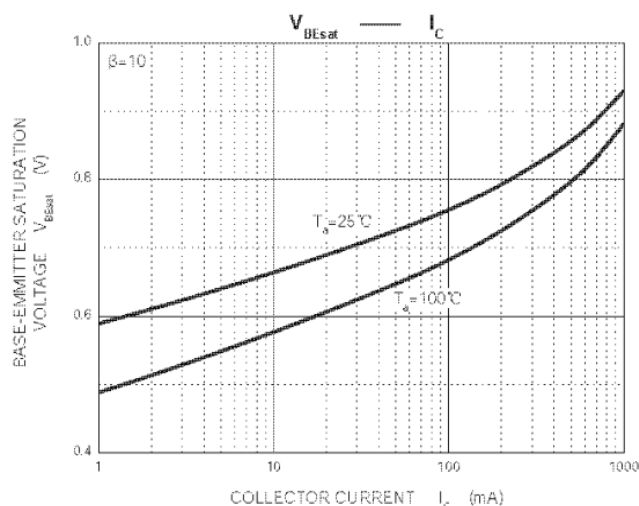
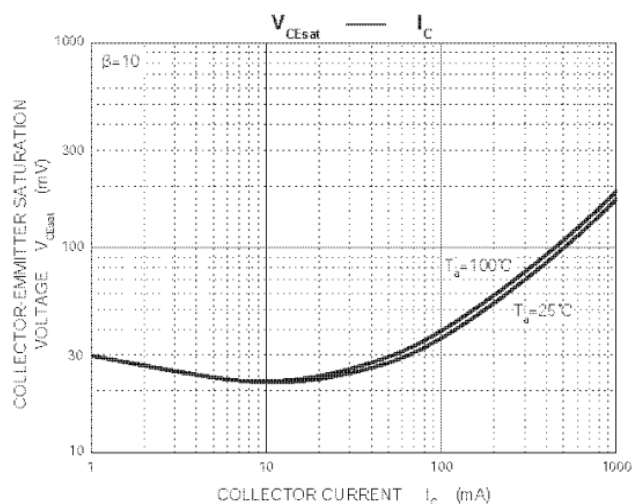
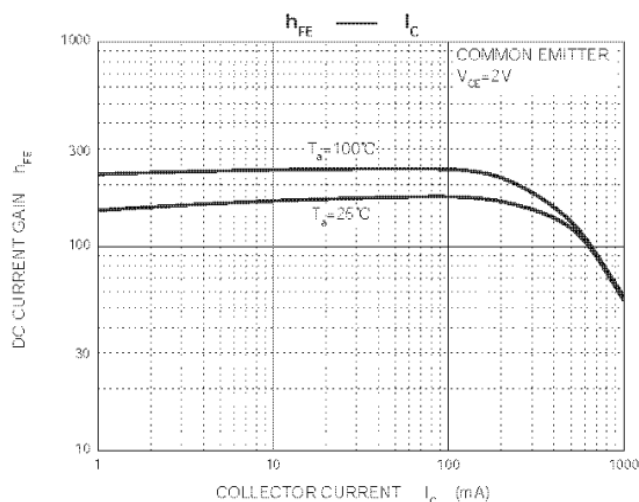
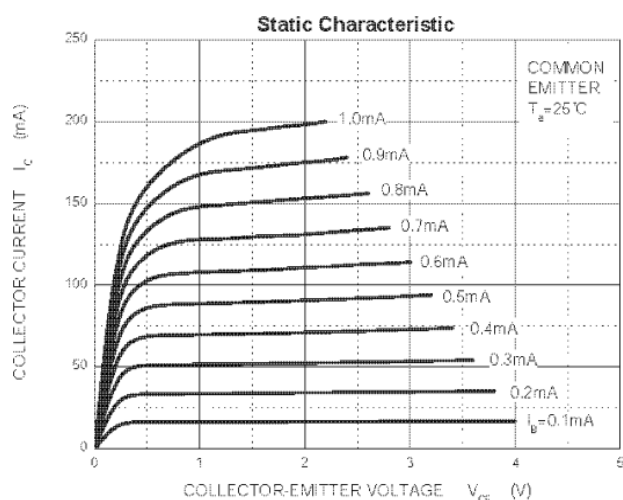
Notes:

1. Maximum allowed temperature T<sub>J</sub>=25°C.
2. Measured with the device mounted on 1 inch<sup>2</sup> FR-4 board with 1oz. copper, in a still air environment with T<sub>A</sub>=25°C.

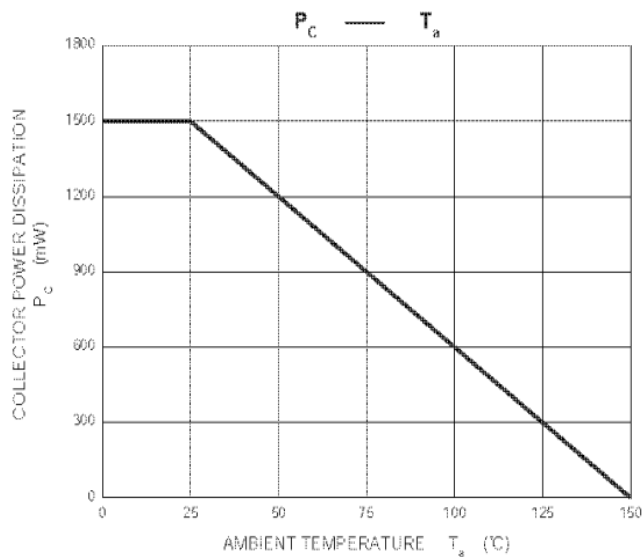
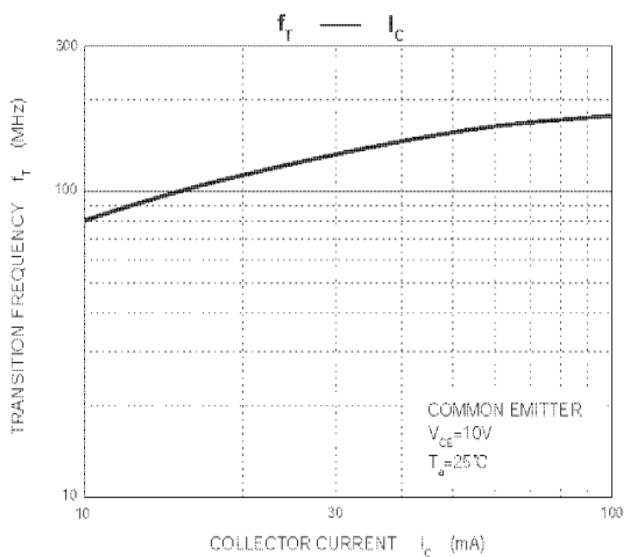
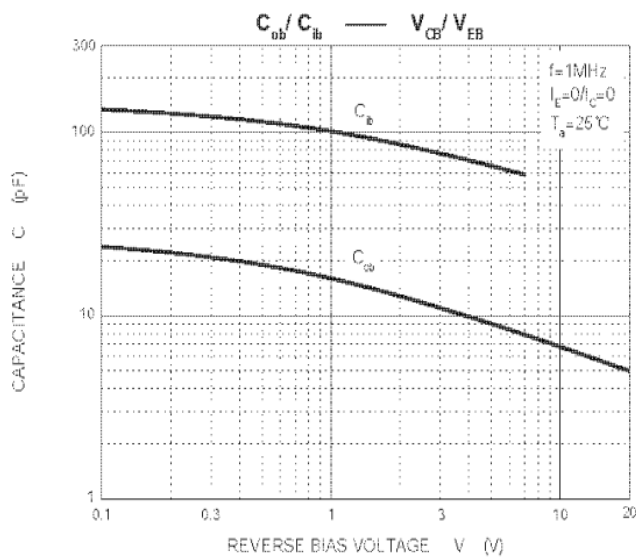
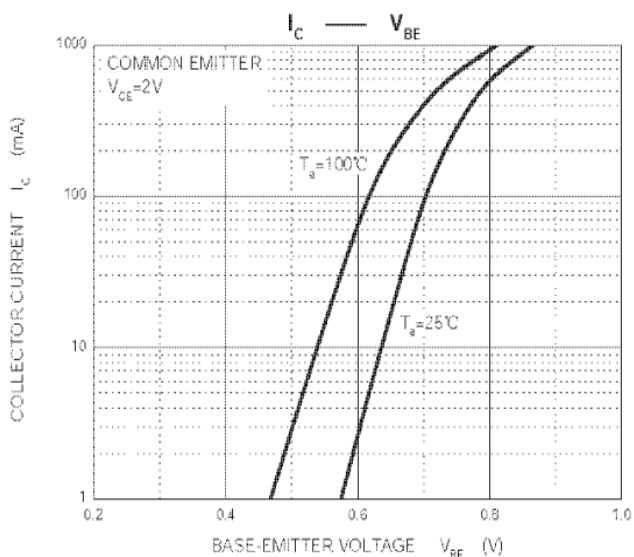
**ELECTRICAL CHARACTERISTICS** ( $T_A=25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-Base Breakdown Voltage	BCP54CR	45			V	$I_C=0.1\text{mA}, I_E=0$
	BCP55CR	60				
	BCP56CR	100				
Collector-Emitter Breakdown Voltage	BCP54CR	45			V	$I_C=10\text{mA}, I_B=0$
	BCP55CR	60				
	BCP56CR	80				
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	$I_E=10\mu\text{A}, I_C=0$
Collector-Base Cut-Off Current	$I_{CBO}$			100	nA	$V_{CB}=30\text{V}, I_E=0$
DC Current Gain	$h_{FE}$	25				$V_{CE}=2\text{V}, I_C=5\text{mA}$
		63		250		$V_{CE}=2\text{V}, I_C=150\text{mA}$
		25				$V_{CE}=2\text{V}, I_C=500\text{mA}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.5	V	$I_C=500\text{mA}, I_B=50\text{mA}$
Base-Emitter Voltage	$V_{BE}$			1	V	$V_{CE}=2\text{V}, I_C=500\text{mA}$
Transition Frequency	$f_T$	100			MHz	$V_{CE}=10\text{V}, I_C=50\text{mA}, f=100\text{MHz}$

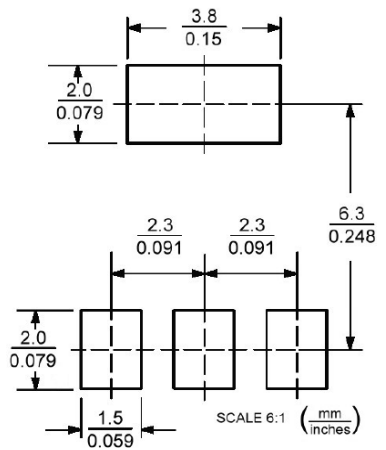
**CHARACTERISTIC CURVES**



**CHARACTERISTIC CURVES**



**Mounting Pad Layout**



\*Dimensions in millimeters