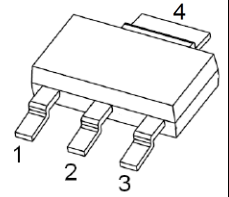


FEATURES

- For AF driver and output stages
- High collector current
- Low collector-emitter saturation voltage
- Complementary types: BCP54-Q1...BCP56-Q1 (NPN)
- Compliant to Halogen-free
- Suffix "-Q1" for AEC-Q101

SOT-223

1. BASE
2/4. COLLECTOR
3. EMITTER



MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	BCP51-Q1	BCP52-Q1	BCP53-Q1	Unit
V _{CB0}	Collector-Base Voltage	-45	-60	-100	V
V _{CE0}	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~+150			°C
R _{θJA}	Thermal Resistance Junction to Ambient	94			°C/W

ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

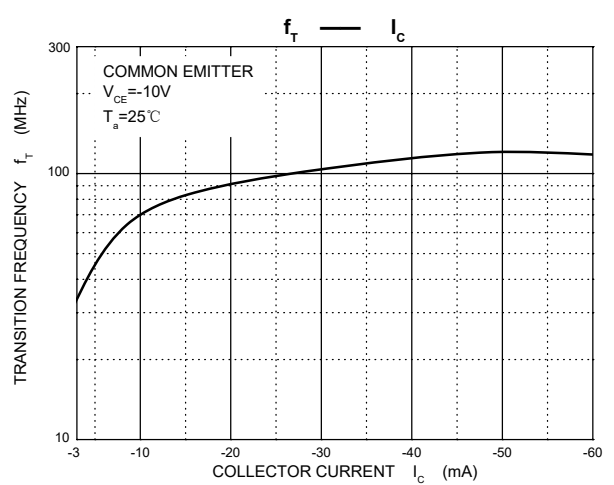
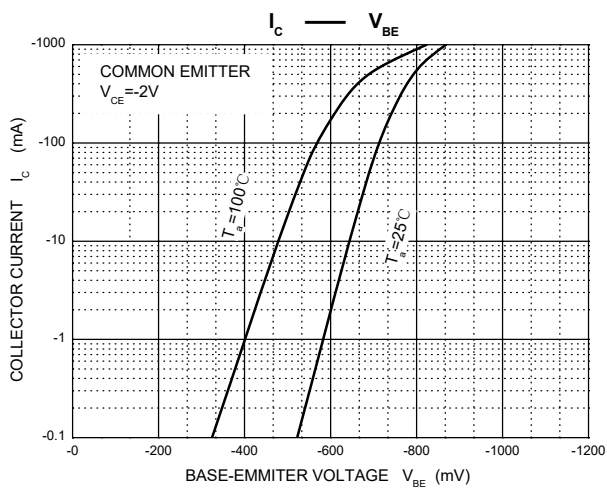
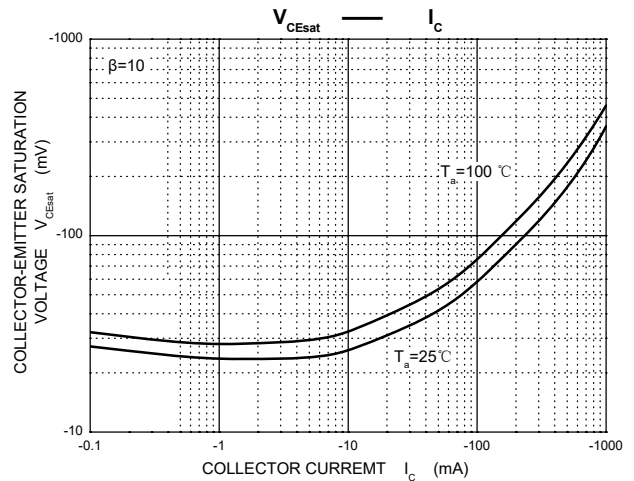
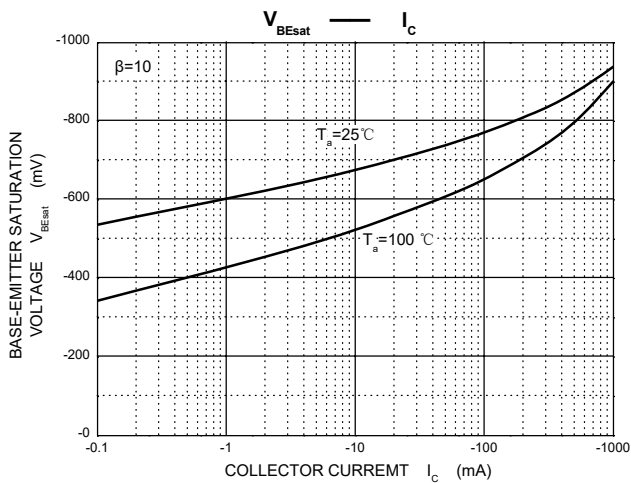
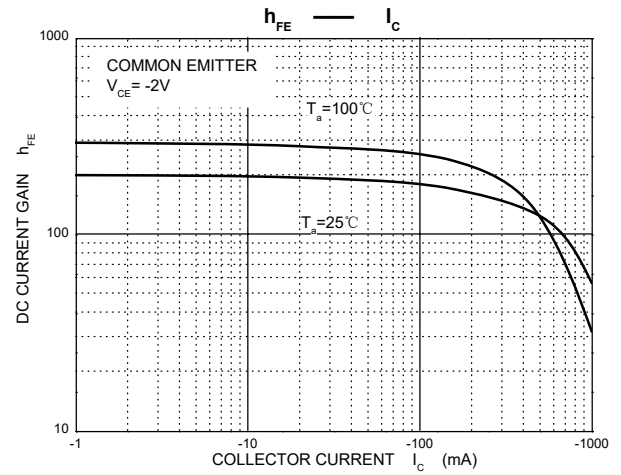
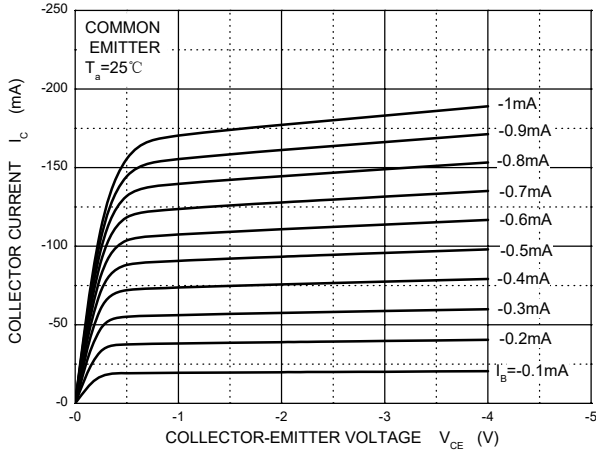
Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	BCP51-Q1	I _C =-0.1mA, I _E =0	-45		V
	BCP52-Q1		-60		
	BCP53-Q1		-100		
Collector-emitter breakdown voltage	BCP51-Q1	I _C =-10mA, I _B =0	-45		V
	BCP52-Q1		-60		
	BCP53-Q1		-80		
Base-emitter breakdown voltage	V _{(BR)EBO}	I _E =-10μA, I _C =0	-5		V
Collector cut-off current	I _{CBO}	V _{CB} =-30V, I _E =0		-100	nA
DC current gain	h _{FE(1)}	V _{CE} =-2V, I _C =-5mA	25		
	h _{FE(2)}	V _{CE} =-2V, I _C =-150mA	63	250	
	h _{FE(3)}	V _{CE} =-2V, I _C =-500mA	25		
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =-500mA, I _B =-50mA		-0.5	V
Base-emitter voltage	V _{BE}	V _{CE} =-2V, I _C =-500mA		-1	V
Transition frequency	f _T	V _{CE} =-10V, I _C =-50mA, f=100MHz	100		MHz

CLASSIFICATION OF h_{FE(2)}

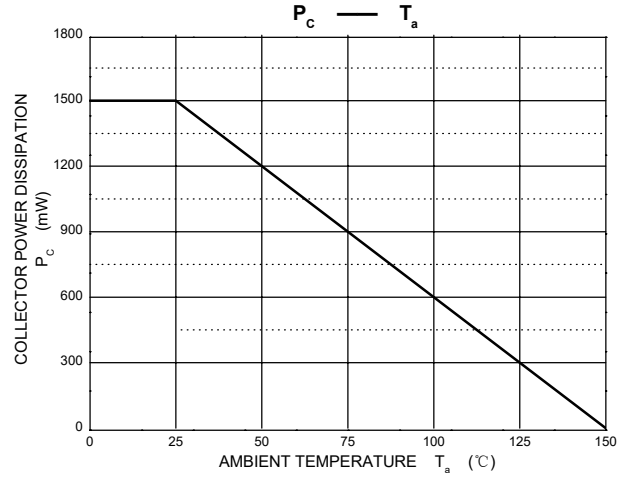
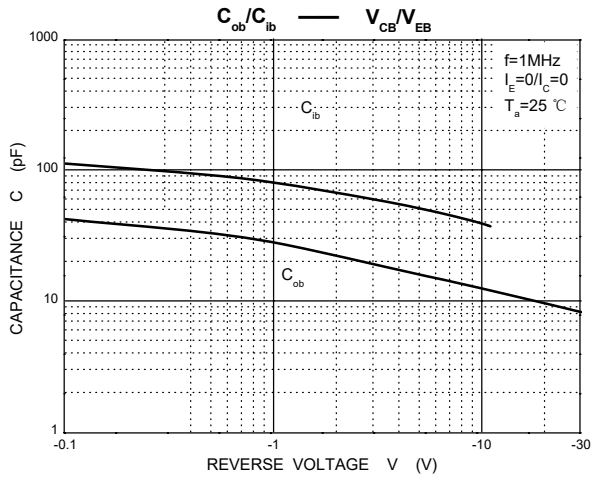
Rank	BCP51-10-Q1, BCP52-10-Q1, BCP53-10-Q1	BCP51-16-Q1, BCP52-16-Q1, BCP53-16-Q1
Range	63-160	100-250

Typical Characteristics

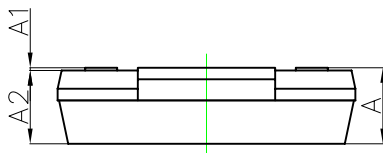
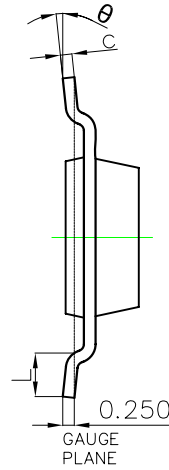
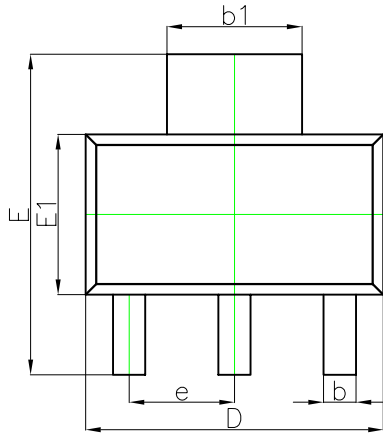
Static Characteristic



Typical Characteristics

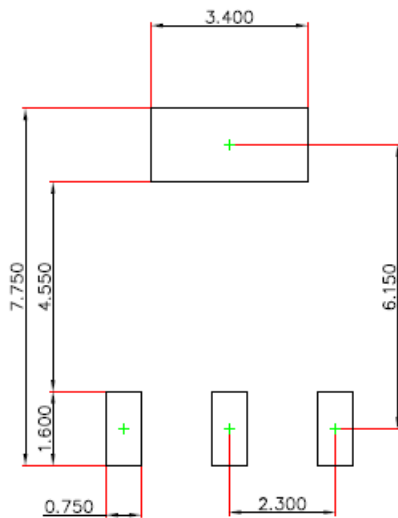


Package Outline Dimensions



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°

Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.050 mm.
3. The pad layout is for reference purposes only.