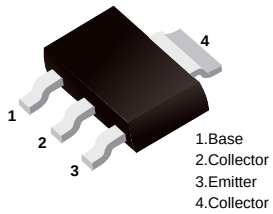
FEATURES

For AF driver and output stages

High collector current

Low collector-emitter saturation voltage

Complementary to BCP51,BCP52,BCP53



Simplified outline(SOT-223)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

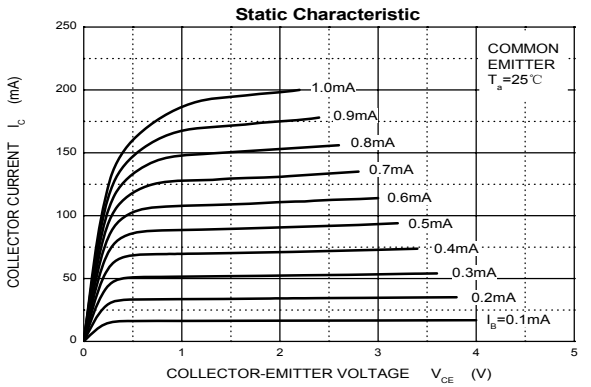
Absolute Maximum Ratings Ta = 25℃

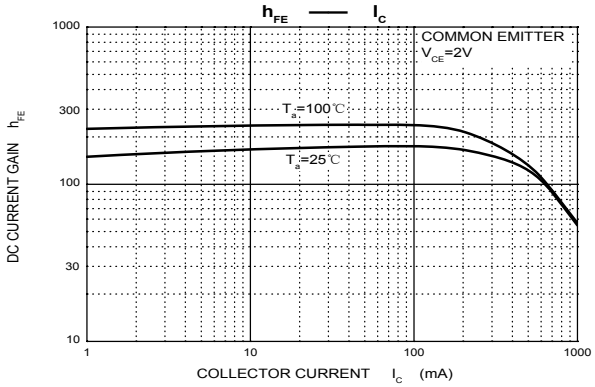
Parameter	Symbol	BCP54	BCP55	BCP56	Unit
Collector - Base Voltage	V_{CBO}	45	60	100	V
Collector - Emitter Voltage	V_{CEO}	45	60	80	
Emitter - Base Voltage	V_{EBO}	5			
Collector Current - Continuous	I_C	1			A
Collector Power Dissipation	P_C	1.5			W
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	83.3			℃/W
Junction Temperature	T_J	150			℃
Storage Temperature Range	T_{stg}	-65 to 150			

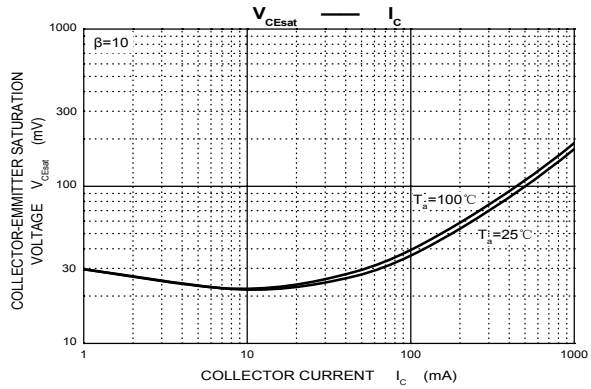
ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted.)

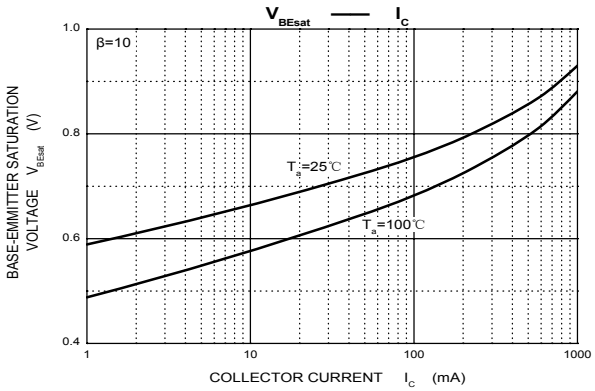
Parameter		Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	BCP54	V_{CBO}	I_C= 100 μA， I_E= 0	45			V
	BCP55			60			
	BCP56			100			
Collector- emitter breakdown voltage	BCP54	V_{CEO}	I_C= 10 mA， I_B= 0	45			
	BCP55			60			
	BCP56			80			
Emitter - base breakdown voltage		V_{EBO}	I_E= 100 μ A， I_C= 0	5			
Collector-base cut-off current	BCP54	I_{CBO}	V_{CB}= 45 V , I_E= 0			0.1	uA
	BCP55		V_{CB}= 60 V , I_E= 0				
	BCP56		V_{CB}= 100 V , I_E= 0				
Emitter cut-off current		I_{EBO}	V_{EB}= 5V , I_C=0			0.1	
Collector-emitter saturation voltage		$V_{CE(sat)}$	I_C=500 mA, I_B=50mA			0.5	V
Base - emitter saturation voltage		$V_{BE(sat)}$	I_C=500 mA, I_B=50mA			1.2	
Base-emitter voltage		V_{BE}	V_{CE}= 2V, I_C= 500mA			1	
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			
Transition frequency		f_T	V_{CE}= 10V, I_C= 50mA,f=100MHz	100			MHz

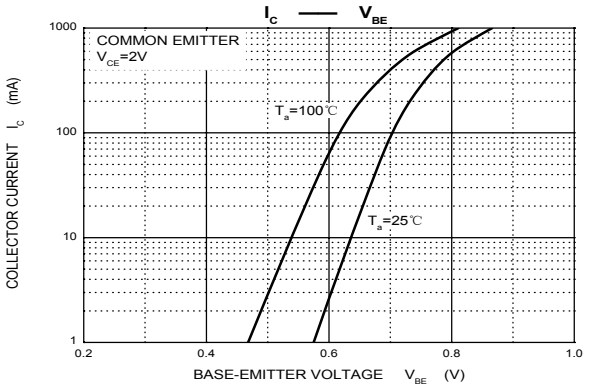
RATING AND CHARACTERISTIC CURVES

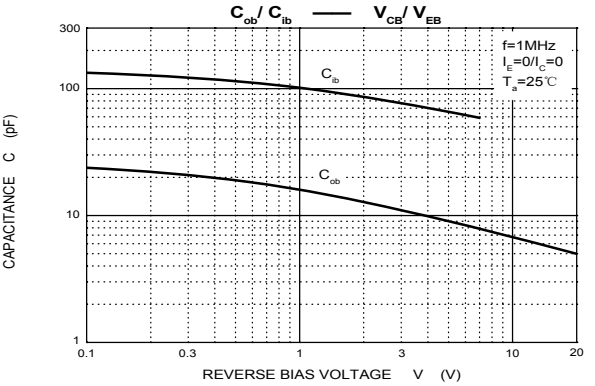


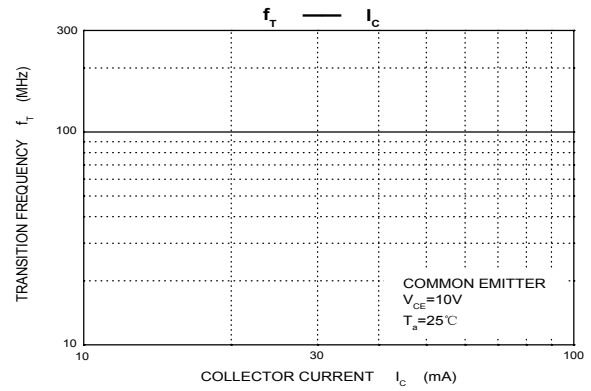


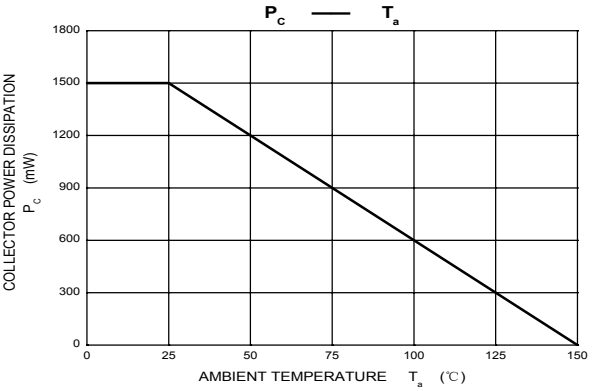








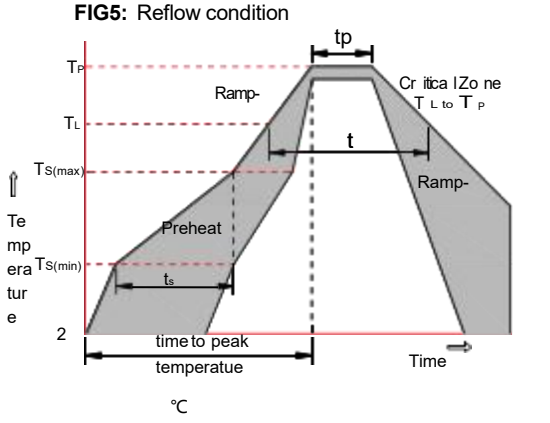




Soldering parameters

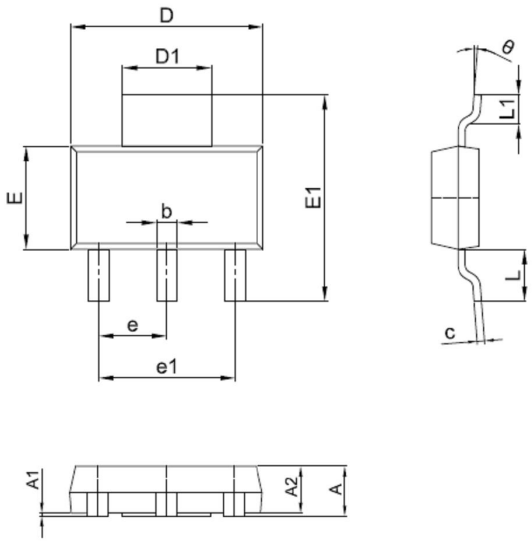
Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃

FIG5: Reflow condition



Package Dimensions & Suggested Pad Layout

SOT-223



Symbol	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.50	1.80	0.059	0.071
A1	0.00	0.10	0.000	0.004
A2	1.50	1.70	0.059	0.067
b	0.65	0.75	0.026	0.030
c	0.20	0.30	0.008	0.012
D	6.40	6.60	0.252	0.260
D1	2.90	3.10	0.114	0.122
E	3.30	3.70	0.130	0.146
E1	6.85	7.15	0.270	0.281
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	1.65	1.85	0.065	0.073
L1	0.90	1.15	0.035	0.045