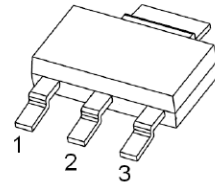


Plastic-Encapsulate Transistors TRANSISTOR (NPN)

FEATURES

- Complementary to BCP611T
- Power amplifier applications up to 5.0 amps.
- AEC-Q 101 qualified (Automotive grade with suffix "Q".)
- Expsemi electronics

SOT-223



1. BASE
2. COLLECTOR
3. EMITTER

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

Symbol	Parameter	Value	Unit
V _{CB0}	Collector-Base Voltage	100	V
V _{CEO}	Collector-Emitter Voltage	100	V
V _{EBO}	Emitter-Base Voltage	5	V
I _C	Collector Current -Continuous	6	A
P _C	Collector Power Dissipation	2	W
T _J , T _{stg}	Operation Junction and Storage Temperature Range	-55~150	°C

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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =1mA, I _E =0	100			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =30mA, I _B =0	100			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =3mA, I _C =0	5			V
Collector cut-off current	I _{CBO}	V _{CB} =100V, I _E =0			400	uA
Emitter cut-off current	I _{EBO}	V _{EB} =5V, I _C =0			1	mA
DC current gain	h _{FE(1)} *	V _{CE} =4V, I _C =0.3A	30			
	h _{FE(2)} *	V _{CE} =4V, I _C =3A	15		75	
Collector-emitter saturation voltage	V _{CE(sat)} *	I _C =3.0A, I _B =375mA			1.5	V
Base-emitter voltage	V _{BE} *	V _{CE} =4V, I _C =3A			2.0	V
Transition frequency	f _T	V _{CE} =10V, I _C =500mA, f=1MHz	3			MHz

* Pulsed , 2%D.C.

Typical Characteristics

Fig. 1 - Static Characteristics

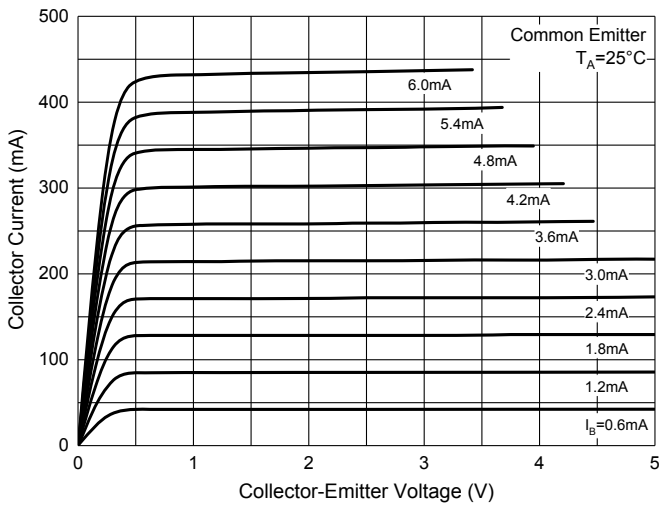


Fig. 2 - DC Current Gain Characteristics

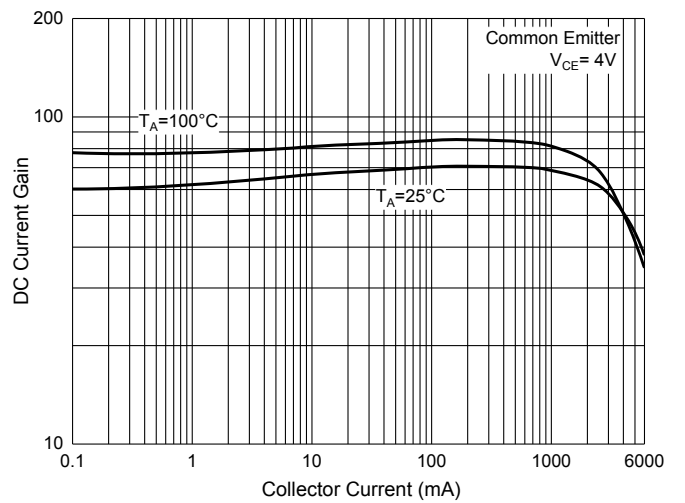


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

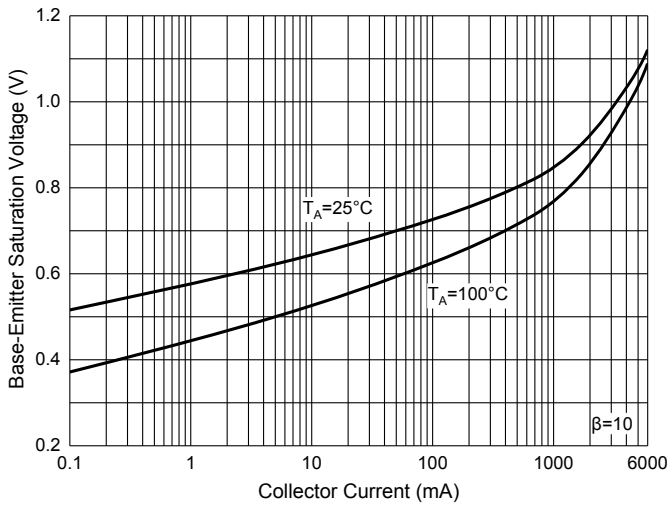


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

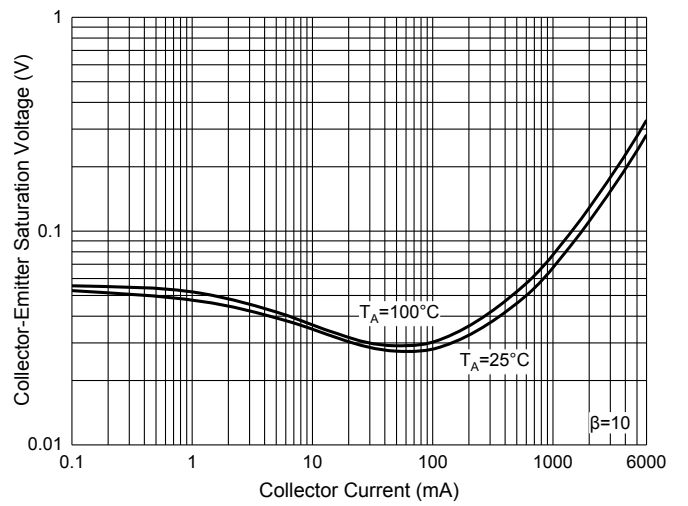


Fig. 5 - Base-Emitter Voltage Characteristics

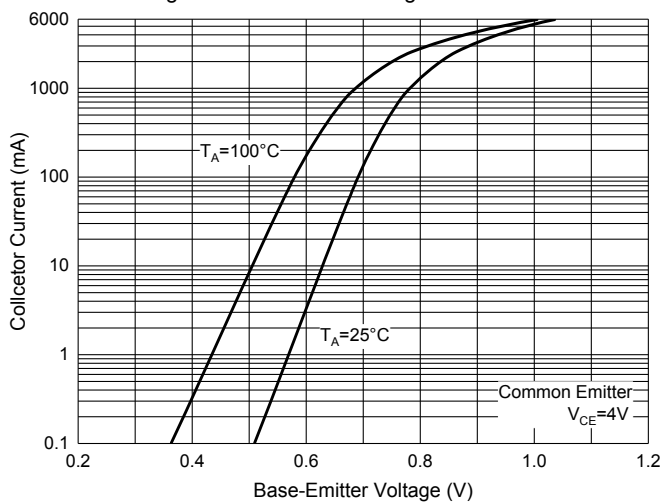
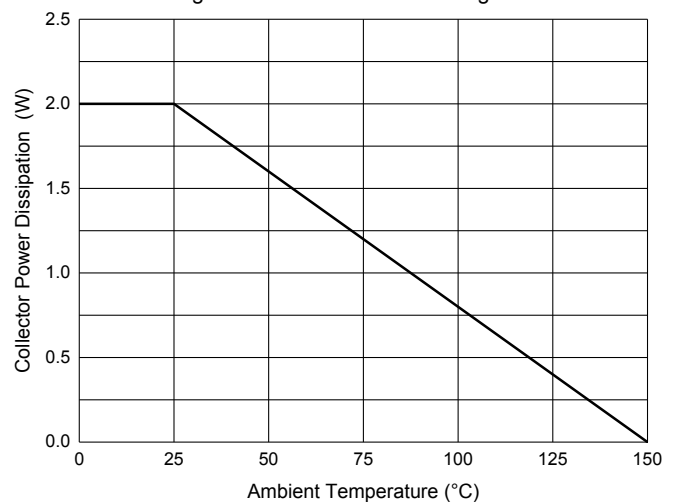
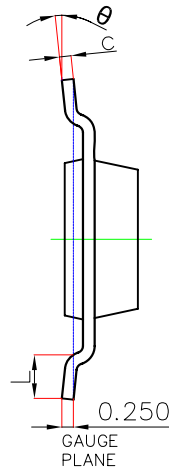
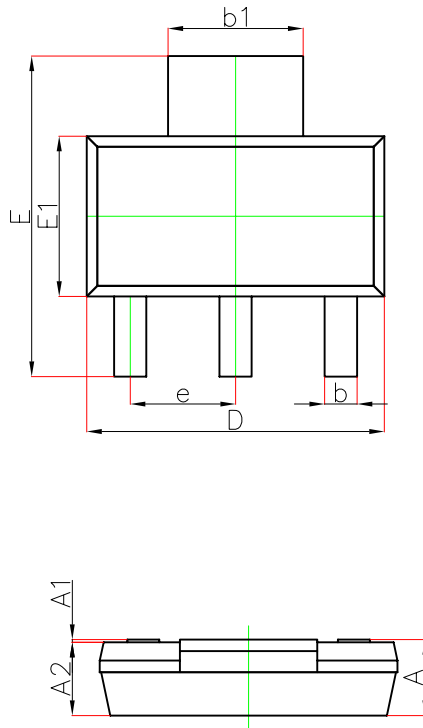


Fig. 6 - Collector Power Derating Curve

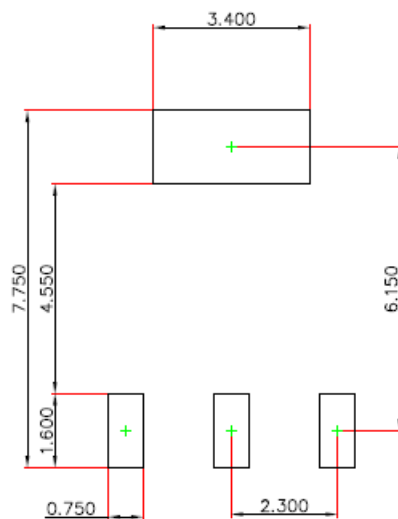


SOT-223 Package Outline Dimensions



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
b_1	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: ± 0.050 mm.
3. The pad layout is for reference purposes only.

Ordering information

Device	Package	Shipping
BCP610T	SOT-223	2500/Tape&Reel