

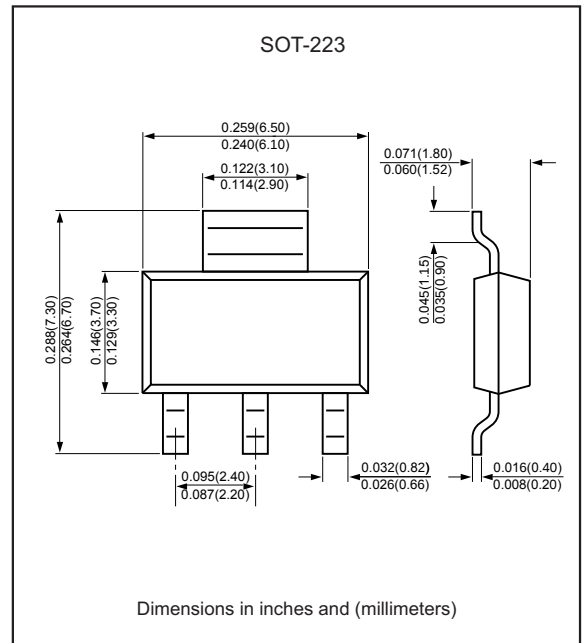
Features

- High collector current
- Low collector-emitter saturation voltage
- High current gain
- Compliant to Halogen-free
- Suffix "-Q1" for AEC-Q101

Mechanical data

- Case: SOT-223
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208

Package outline



Maximum ratings (Ta = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	25	V
Collector-Emitter Voltage	V _{CEO}	20	V
Emitter-Base Voltage	V _{EBO}	5	V
Collector Current (Continuous)	I _C	1	A
Collector Current (Peak)	I _{CM}	2	A
Base Current (Continuous)	I _B	0.1	A
Base Current (Peak)	I _{BM}	0.2	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation (T _A = 25°C) *1	P _D	1.5	W
Operating junction Temperature	T _J	-55 ~ +150	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°C

Note 1: Device mounted on a glass epoxy printed circuit board 1.575 in. x 1.575 in. x 0.059 in.; mounting pad for the collector lead min. 0.93 sq. in.

Electrical Characteristics (Ta = 25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu A, I_E = 0$	25	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1mA, I_B = 0$	20	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu A, I_C = 0$	5	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 25V, I_E = 0$	-	-	100	nA
DC Current Gain	h_{FE}	$V_{CE} = 10V, I_C = 5mA$	50	-	-	-
		$V_{CE} = 1V, I_C = 1A$	60	-	-	-
		$V_{CE} = 1V, I_C = 500mA$	85	-	375	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 1A, I_B = 100mA$	-	-	0.5	V
Base-Emitter Voltage	$V_{BE(on)}$	$I_C = 5mA, V_{CE} = 10V$	-	0.6	-	V
		$I_C = 1A, V_{CE} = 1V$	-	-	1	V
Transition Frequency	f_T	$V_{CE} = 5V, I_C = 100mA$ $f = 100MHz$	-	100	-	MHz

Rating and characteristic curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

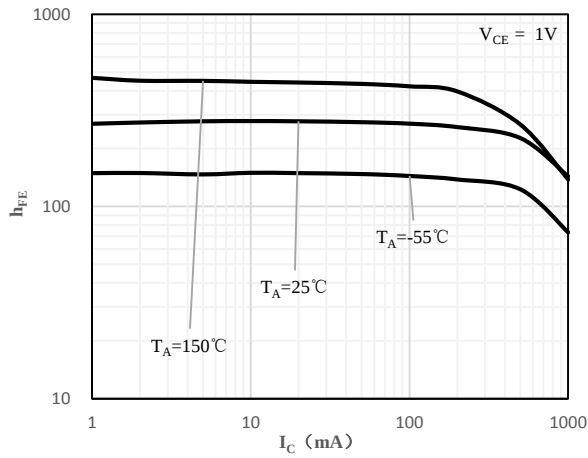


Fig 1 h_{FE} vs. I_C

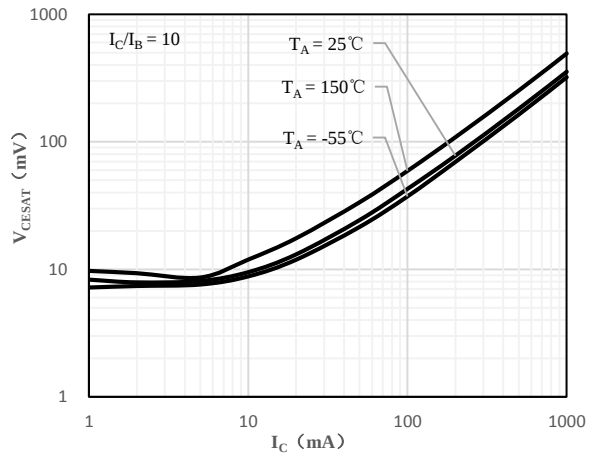


Fig 2 $V_{CE(sat)}$ vs. I_C

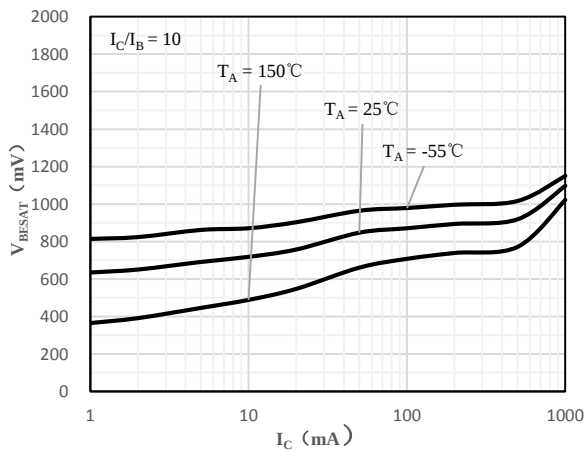


Fig 3 $V_{BE(sat)}$ vs. I_C

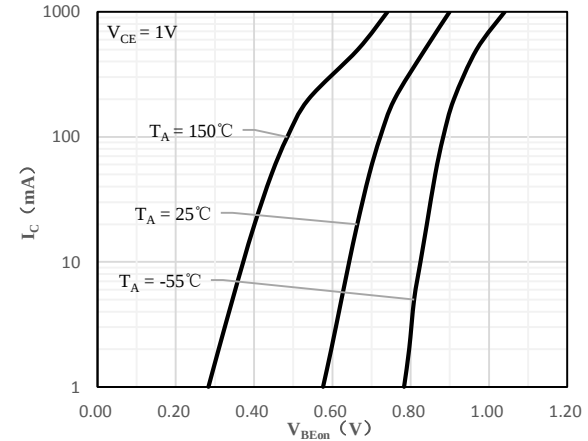


Fig 4 $V_{BE(on)}$ vs. I_C

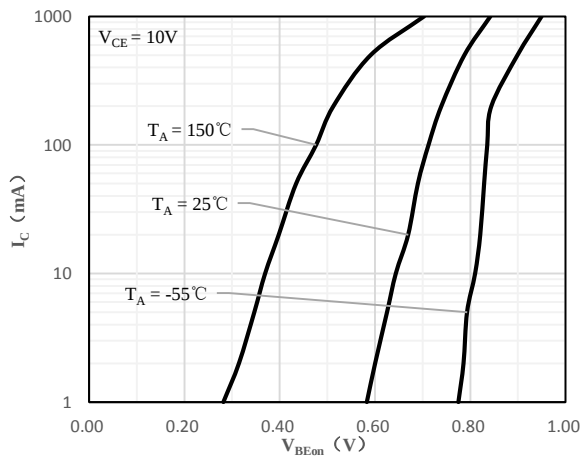
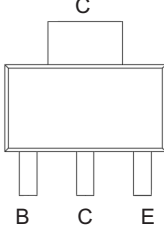
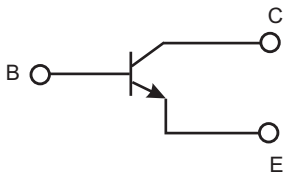


Fig 5 $V_{BE(on)}$ vs. I_C

Pinning information

Pin	Simplified outline	Symbol
PinB Base PinC Collector PinE Emitter		

Marking

Type number	Marking code
BCP68-Q1	BCP68

Suggested solder pad layout

