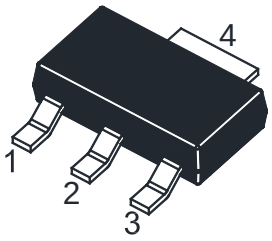
2SB955Q

PNP Silicon Epitaxial Power Transistor



1.Base 2.Collector 3.Emitter 4. Collector
SOT-223 Plastic Package

Absolute Maximum Ratings (T_a = 25 °C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	180	V
Collector Emitter Voltage	$-V_{CEO}$	140	V
Emitter Base Voltage	$-V_{EBO}$	6	V
Collector Current	$-I_C$	4	A
Peak Pulse Current	$-I_{CM}$	10	A
Power Dissipation [1)]	P_{tot}	3	W
Power Dissipation [2)]	P_{tot}	1.75	W
Operating and Storage Temperature Range	T_j , T_{stg}	- 55 to + 150	°C

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance from Juntion to Ambient [1)]	$R_{\theta JA}$	41.7	℃/W
Thermal Resistance from Juntion to Ambient [2)]	$R_{\theta JA}$	71.4	℃/W

[1)] The power which can be dissipated assuming the device is mounted in a typical manner on a P.C.B. with copper equal to 4 square inch minimum.

[2)] Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch square copper plate.

Characteristics at T_a = 25 °C

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain					
at $-V_{CE}$ = 5 V, $-I_C$ = 10 mA	h_{FE}	100	-	-	-
at $-V_{CE}$ = 5 V, $-I_C$ = 1 A	h_{FE}	100	-	300	-
at $-V_{CE}$ = 5 V, $-I_C$ = 3 A	h_{FE}	75	-	-	-
at $-V_{CE}$ = 5 V, $-I_C$ = 10 A	h_{FE}	5	-	-	-
Collector Base Cutoff Current at $-V_{CB}$ = 150 V	$-I_{CBO}$	-	-	50	nA
Collector Emitter Cutoff Current at $-V_{EB}$ = 6 V	$-I_{EBO}$	-	-	10	nA
Collector to Base Breakdown Voltage at $-I_C$ = 100 µA	$-V_{(BR)CBO}$	180	-	-	V
Collector to Emitter Breakdown Voltage at $-I_C$ = 10 mA	$-V_{(BR)CEO}$	140	-	-	V
Emitter Base Breakdown Voltage at $-I_E$ = 100 µA	$-V_{(BR)EBO}$	6	-	-	V
Collector Emitter Saturation Voltage					
at $-I_C$ = 0.1 A, $-I_B$ = 5 mA	$-V_{CE(sat)}$	-	-	60	mV
at $-I_C$ = 0.5 A, $-I_B$ = 50 mA		-	-	120	
at $-I_C$ = 1 A, $-I_B$ = 100 mA		-	-	150	
at $-I_C$ = 3 A, $-I_B$ = 300 mA		30	-	370	
Base Emitter Saturation Voltage at $-I_B$ = 300 mA, $-I_C$ = 3 A	$-V_{BE(sat)}$	-	-	1110	mV
Base Emitter On Voltage at $-V_{CE}$ = 5 V, $-I_C$ = 3 A	$-V_{BE(on)}$	-	-	950	mV
Gain Bandwidth Product at $-V_{CE}$ = 10 V, $-I_C$ = 100 mA, f = 50 MHz	f_T	-	110	-	MHz
Collector Base Capacitance at $-V_{CB}$ = 20 V, f = 1 MHz	C_{ob}	-	28	-	pF
Turn-On Delay Time at $-I_C$ = 1 A, $-I_{B1}$ = 100 mA, I_{B2} = 100 mA, $-V_{CC}$ = 50 V	$t_{d(on)}$	-	68	-	ns
Turn-Off Delay Time at $-I_C$ = 1 A, $-I_{B1}$ = 100 mA, I_{B2} = 100 mA, $-V_{CC}$ = 50 V	$t_{d(off)}$	-	1030	-	ns

Electrical Characteristics Curves

Fig 1. DC Current Gain vs. Collector Current

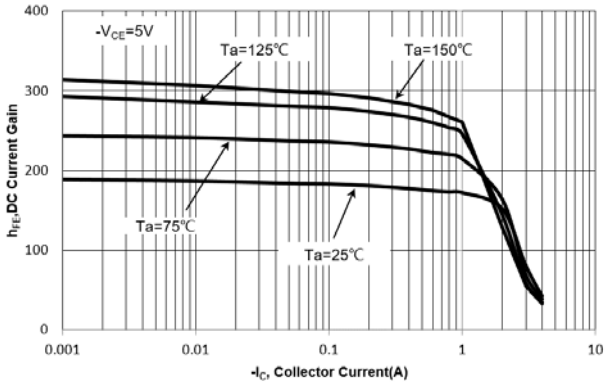


Fig 2. $V_{BE(on)}$ vs. Collector Current

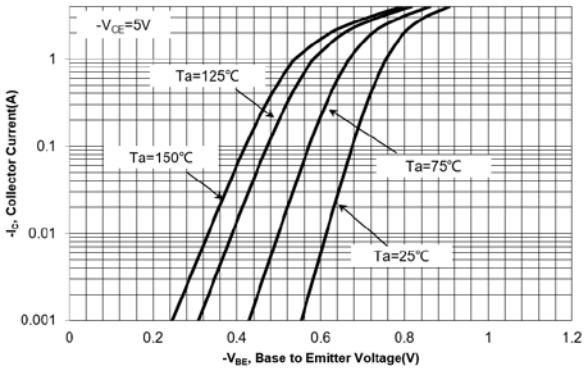


Fig 3. Output Characteristics

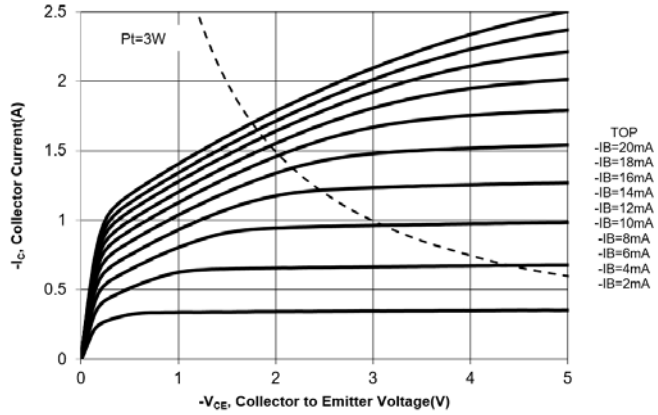
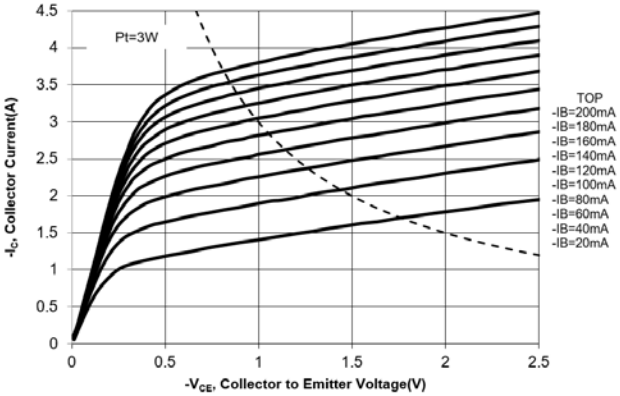


Fig 4. Output Characteristics



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Electrical Characteristics Curves

Fig 5. V_{BESAT} vs. Collector Current

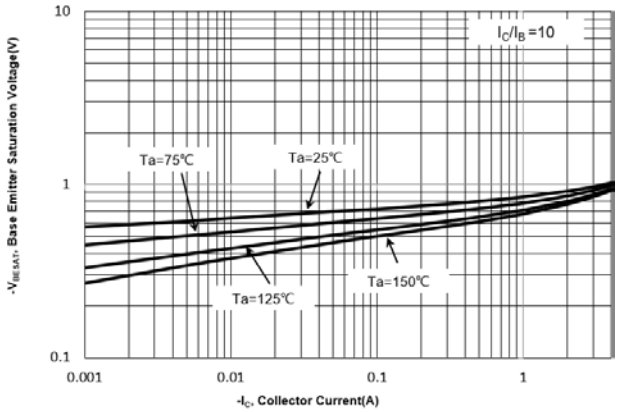


Fig 6. V_{CESAT} vs. Collector Current

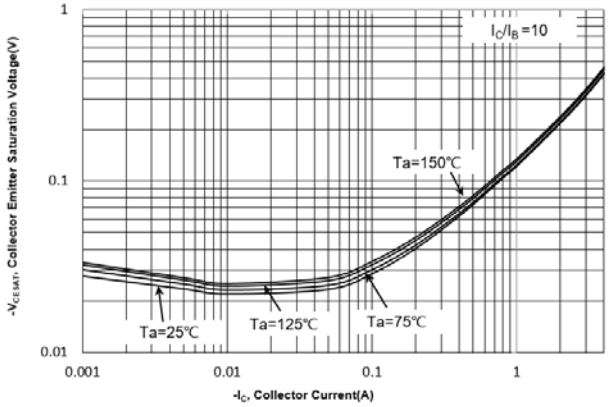
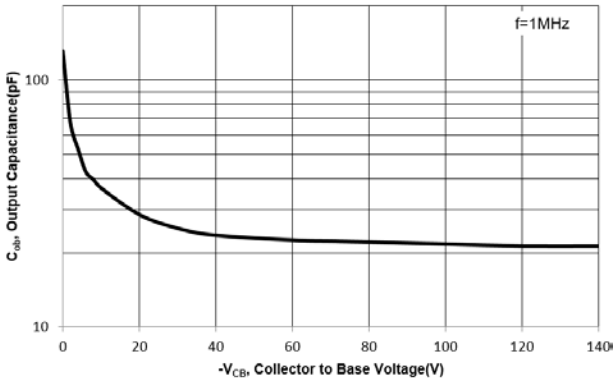


Fig 7. Output Capacitance



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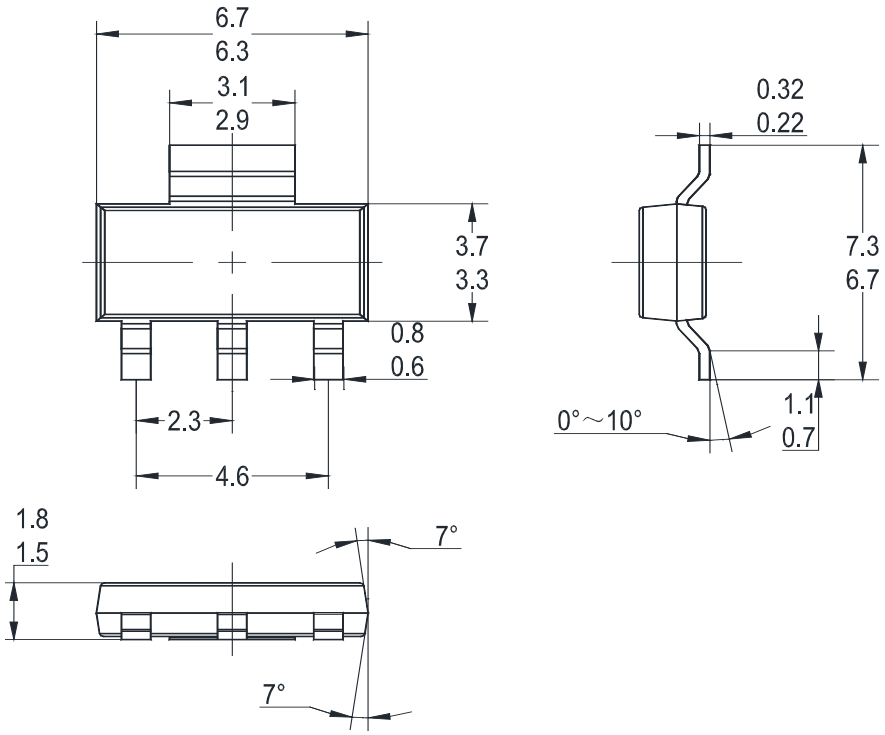
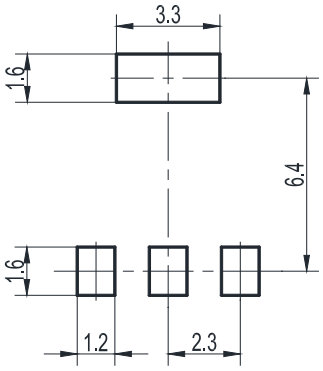
Package Outline (Dimensions in mm) SOT-223



Recommended Soldering Footprint

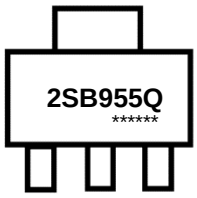


Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-223	12	8 ± 0.1	0.315 ± 0.004	330	13	3,000

Marking information

" 2SB955Q " = Part No.
" ********** " = Date Code Marking
Font type: Arial



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Dated: 28/10/2020 Rev: 01