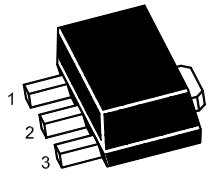
ST 2SB9435U

PNP Silicon Epitaxial Power Transistor



1.Base 2.Collector 3.Emitter
SOT-89 Plastic Package

Absolute Maximum Ratings (T_a = 25 °C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	45	V
Collector Emitter Voltage	$-V_{CEO}$	30	V
Emitter Base Voltage	$-V_{EBO}$	6	V
Collector Current	$-I_C$	3	A
Peak Collector Current	$-I_{CM}$	5	A
Base Current	$-I_B$	1	A
Total Power Dissipation at T_a = 25 °C	P_{tot}	0.72 [1)]	W
Total Power Dissipation at T_c = 25 °C	P_{tot}	3	W
Operating and Storage Junction Temperature Range	T_j, T_{stg}	- 55 to + 150	°C

[1)] Mounted on 0.012" sq. (7.6 sq. mm) Collector pad on FR-4 bd material.

Characteristics at T_a = 25 °C

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $-V_{CE}$ = 1 V, $-I_C$ = 0.8 A at $-V_{CE}$ = 1 V, $-I_C$ = 1.2 A at $-V_{CE}$ = 1 V, $-I_C$ = 3 A	 h_{FE} h_{FE} h_{FE}	 125 110 90	 - - -	 - - -	 - - -
Collector Emitter Cutoff Current at $-V_{CE}$ = 25 V	$-I_{CEO}$	-	-	20	µA
Emitter Base Cutoff Current at $-V_{EB}$ = 5 V	$-I_{EBO}$	-	-	10	µA
Collector Emitter Sustaining Voltage at $-I_C$ = 10 mA	$-V_{(SUS)CEO}$	30	-	-	V
Emitter Base Breakdown Voltage at $-I_E$ = 50 µA	$-V_{(BR)EBO}$	6	-	-	V
Collector Emitter Saturation Voltage at $-I_C$ = 0.8 A, $-I_B$ = 20 mA at $-I_C$ = 1.2 A, $-I_B$ = 20 mA at $-I_C$ = 3 A, $-I_B$ = 300 mA	$-V_{CE(sat)}$	 - - -	 - - -	 0.21 0.275 0.55	V
Base Emitter Saturation Voltage at $-I_C$ = 3 A, $-I_B$ = 300 mA	$-V_{BE(sat)}$	-	-	1.25	V
Base Emitter on Voltage at $-V_{CE}$ = 4 V, $-I_C$ = 1.2 A	$-V_{BE(on)}$	-	-	1.1	V
Current Gain Bandwidth Product at $-V_{CE}$ = 10 V, $-I_C$ = 500 mA, f = 1 MHz	f_T	-	110	-	MHz
Collector Output Capacitance at $-V_{CB}$ = 10 V, f = 1 MHz	C_{ob}	-	-	150	pF

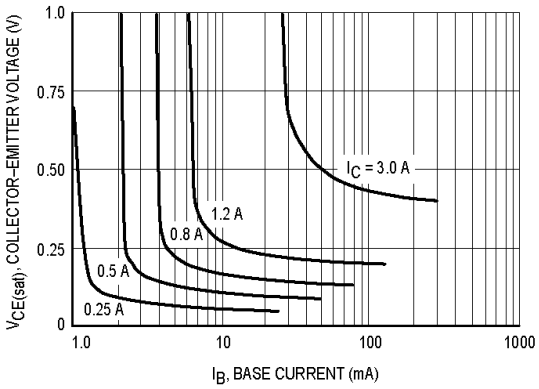


Figure 1. Collector Saturation Region

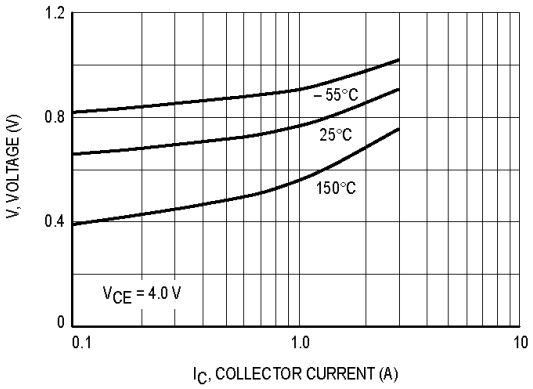


Figure 2. $V_{BE(on)}$ Voltage

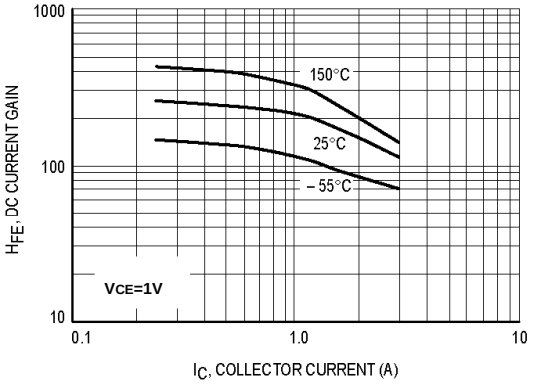


Figure 3. DC Current Gain

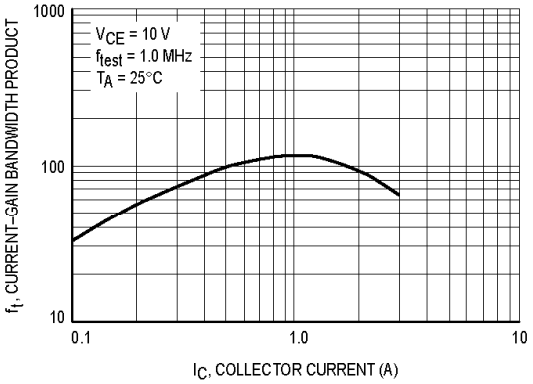


Figure 4. Current-Gain Bandwidth Product

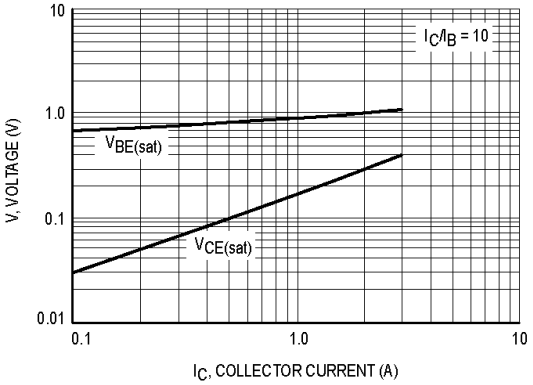


Figure 5. "On" Voltages

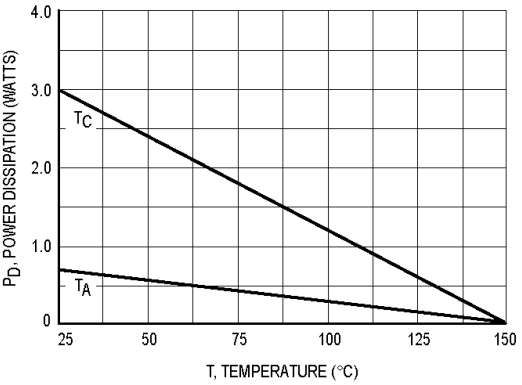
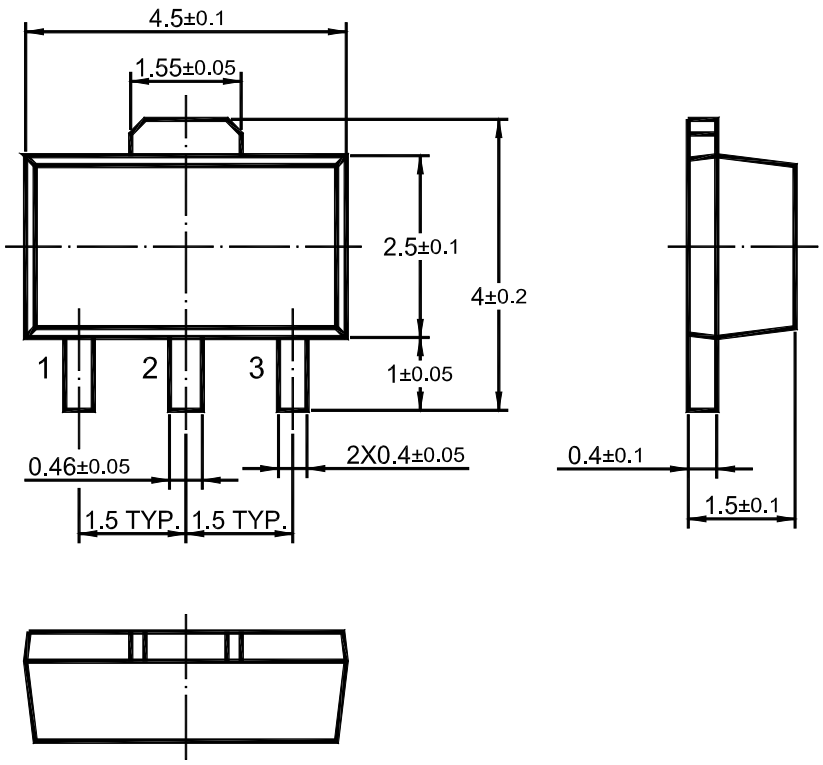


Figure 6. Power Derating

SOT-89 PACKAGE OUTLINE



Dimensions in mm