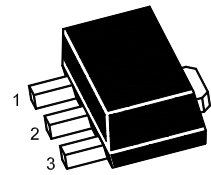


2SB9435U

PNP Silicon Epitaxial Power Transistor



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

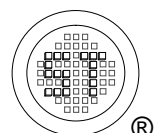
Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

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 $T_a = 25^\circ\text{C}$	P_{tot}	0.72 ¹⁾	W
Total Power Dissipation at $T_c = 25^\circ\text{C}$	P_{tot}	3	W
Operating and Storage Junction Temperature Range	T_j, T_{stg}	- 55 to + 150	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance - Junction to Ambient	$R_{\theta JA}$	174	$^\circ\text{C}/\text{W}$

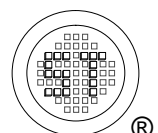
¹⁾Device mounted on FR-4 substrate PC board, with minimum recommended pad layout.



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Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $-V_{CE} = 1\text{ V}$, $-I_C = 0.8\text{ A}$ at $-V_{CE} = 1\text{ V}$, $-I_C = 1.2\text{ A}$ at $-V_{CE} = 1\text{ V}$, $-I_C = 2\text{ A}$	h_{FE} h_{FE} h_{FE}	125 110 90	- - -	- - -	- - -
Collector Emitter Cutoff Current at $-V_{CE} = 25\text{ V}$	$-I_{CEO}$	-	-	20	μA
Emitter Base Cutoff Current at $-V_{EB} = 5\text{ V}$	$-I_{EBO}$	-	-	10	μA
Collector Emitter Sustaining Voltage at $-I_C = 10\text{ mA}$	$-V_{(SUS)CEO}$	30	-	-	V
Emitter Base Breakdown Voltage at $-I_E = 50\text{ }\mu\text{A}$	$-V_{(BR)EBO}$	6	-	-	V
Collector Emitter Saturation Voltage at $-I_C = 0.8\text{ A}$, $-I_B = 20\text{ mA}$ at $-I_C = 1.2\text{ A}$, $-I_B = 20\text{ mA}$ at $-I_C = 3\text{ A}$, $-I_B = 300\text{ mA}$	$-V_{CE(sat)}$	- - -	- - -	0.21 0.275 0.55	V
Base Emitter Saturation Voltage at $-I_C = 3\text{ A}$, $-I_B = 300\text{ mA}$	$-V_{BE(sat)}$	-	-	1.25	V
Base Emitter on Voltage at $-V_{CE} = 4\text{ V}$, $-I_C = 1.2\text{ A}$	$-V_{BE(on)}$	-	-	1.1	V
Current Gain Bandwidth Product at $-V_{CE} = 10\text{ V}$, $-I_C = 500\text{ mA}$, $f = 1\text{ MHz}$	f_T	-	110	-	MHz
Collector Output Capacitance at $-V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$	C_{ob}	-	-	150	pF



Electrical Characteristics Curves

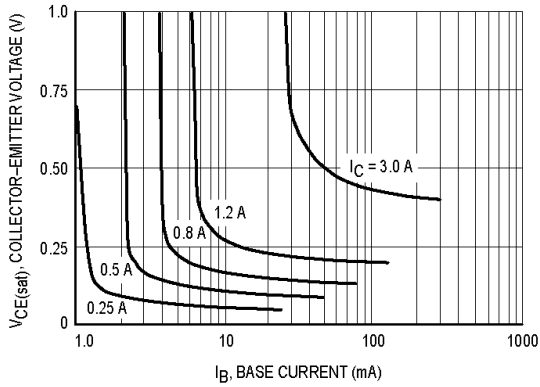


Figure 1. Collector Saturation Region

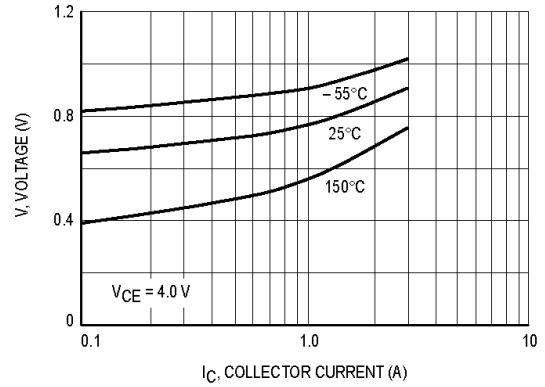


Figure 2. $V_{BE(on)}$ Voltage

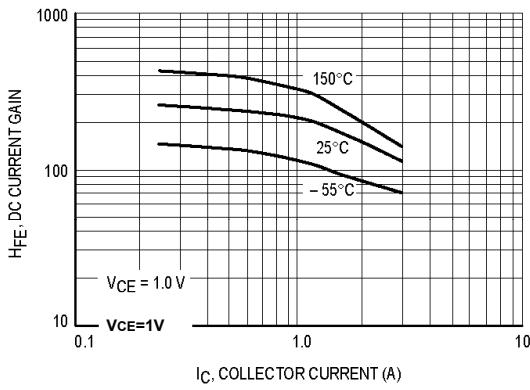


Figure 3. DC Current Gain

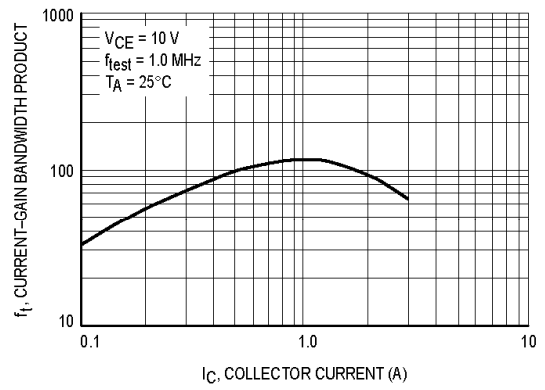


Figure 4. Current-Gain Bandwidth Product

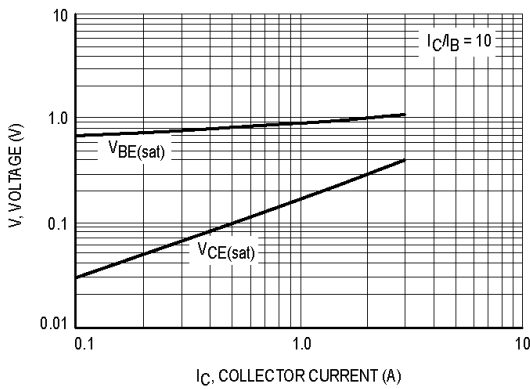


Figure 5. "On" Voltages

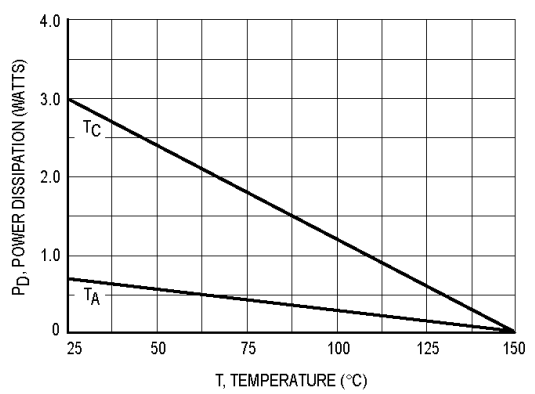
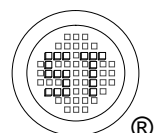


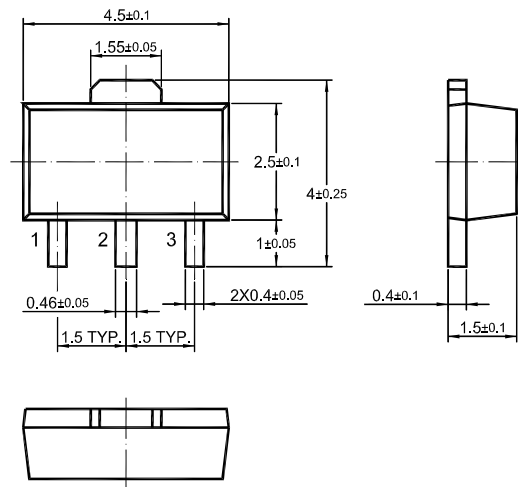
Figure 6. Power Derating



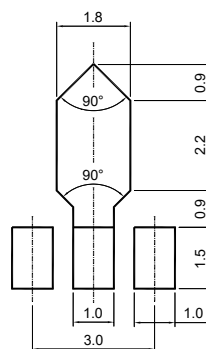
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Package Outline (Dimensions in mm)

SOT-89



Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-89	12	8 ± 0.1	0.315 ± 0.004	178	7	1,000
				330	13	4,000

Marking information

"2SB9435U" = Part No.

"YM" = Date Code Marking

"Y" = Year

"M" = Month

Font type: Arial

