

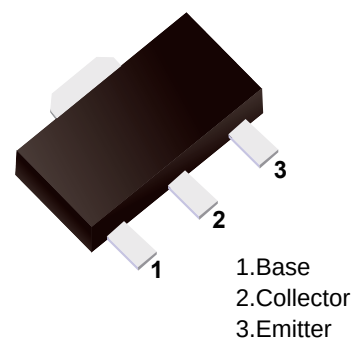
NPN Transistor

FEATURES

- For switching and amplifier applications.
- Low collector saturation voltage.

Marking Code

YFW13003	13003
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■ Simplified outline(SOT-89)

Absolute Maximum Ratings (Ta = 25 °C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	800	V
Collector Emitter Voltage	V_{CEO}	430	V
Emitter Base Voltage	V_{EBO}	9	V
Collector Current	I_C	1.5	A
Pulsed Collector Current	I_{CP}	3	A
Power Dissipation	P_D	800	mW
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to 150	°C

Electrical Characteristics Ta= 25 °C

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $V_{CE} = 2\text{ V}$, $I_C = 500\text{ mA}$ at $V_{CE} = 2\text{ V}$, $I_C = 1\text{ A}$ at $V_{CE} = 5\text{ V}$, $I_C = 200\text{ mA}$	H_{FE}	20 8 15	40 40 40	-
Collector Base Cutoff Current at $V_{CB} = 700\text{ V}$	I_{CBO}	-	10	μA
Emitter Base Cutoff Current at $V_{EB} = 9\text{ V}$	I_{EBO}	-	10	μA
Collector Base Breakdown Voltage at $I_C = 500\text{ }\mu\text{A}$	$V_{(BR)CBO}$	800	-	V
Collector Emitter Breakdown Voltage at $I_C = 5\text{ mA}$	$V_{(BR)CEO}$	430	-	V
Emitter Base Breakdown Voltage at $I_E = 500\text{ }\mu\text{A}$	$V_{(BR)EBO}$	9	-	V
Collector Emitter Saturation Voltage at $I_C = 500\text{ mA}$, $I_B = 100\text{ mA}$ at $I_C = 1\text{ A}$, $I_B = 250\text{ mA}$	$V_{CE(sat)}$	-	0.5 1	V
Base Emitter Saturation Voltage at $I_C = 500\text{ mA}$, $I_B = 100\text{ mA}$ at $I_C = 1\text{ A}$, $I_B = 250\text{ mA}$	$V_{BE(sat)}$	-	1 1.2	V
Transition Frequency at $V_{CE} = 10\text{ V}$, $I_C = 100\text{ mA}$	F_T	4	-	MHz

Ratings and Characteristic Curves

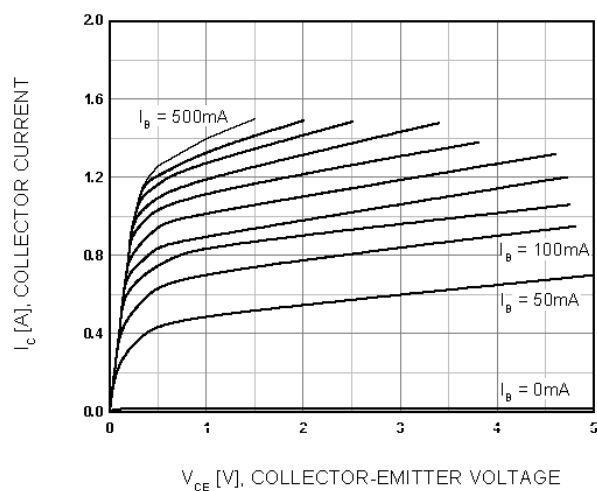


Figure 1. Static Characteristic

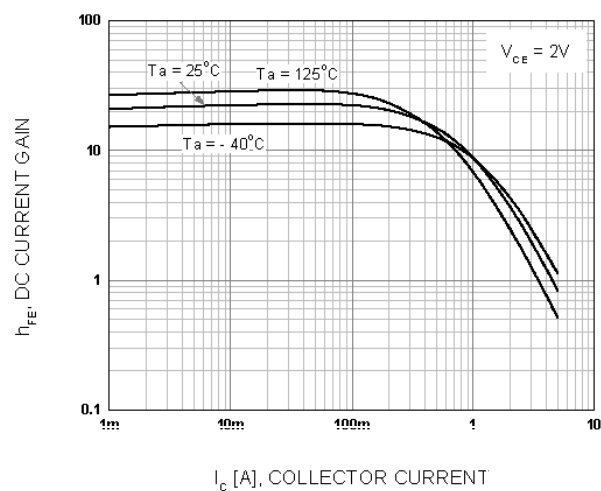


Figure 2. DC current Gain

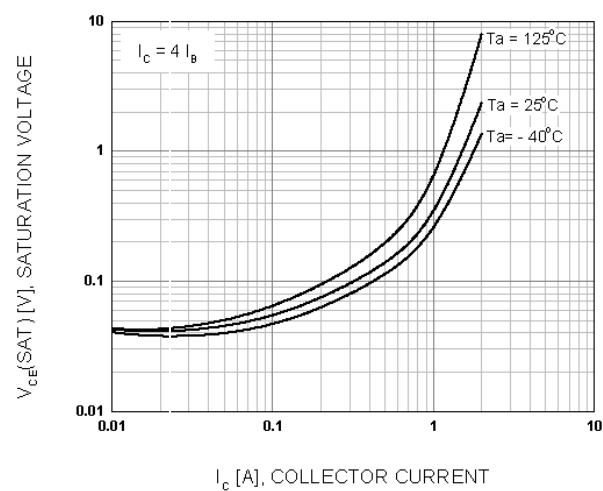


Figure 3. Collector-Emitter Saturation Voltage

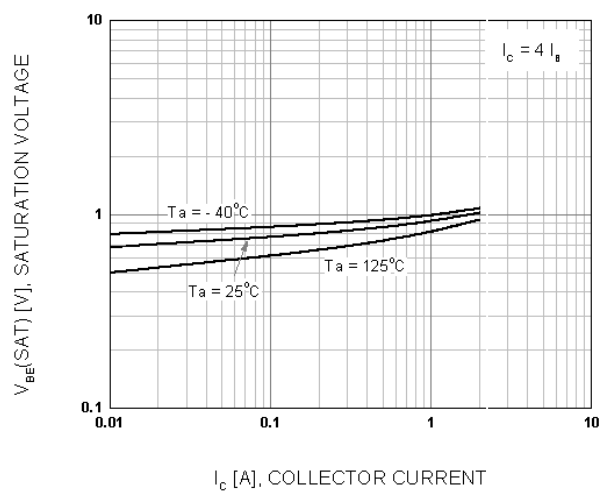


Figure 4. Base-Emitter Saturation Voltage

Ordering information

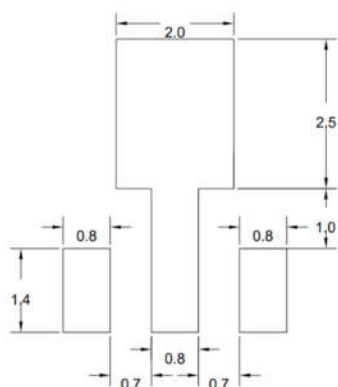
Package	Packing Description	Base Quantity	Packing Quantity
SOT-89	Tape/Reel, 7" reel	1000pcs/Reel	6000PCS/Box 30000PCS/Carton

Package Dimensions

SOT-89

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.40	1.60	0.055	0.063
b	0.32	0.52	0.013	0.020
b1	0.38	0.58	0.015	0.023
c	0.35	0.45	0.014	0.018
D	4.40	4.60	0.173	0.181
D1	1.45	1.65	0.057	0.065
D2	1.70	1.80	0.067	0.071
E	2.30	2.60	0.091	0.102
E1	3.95	4.25	0.156	0.167
E2	1.80	2.00	0.071	0.079
e	1.40	1.60	0.055	0.063
e1	2.80	3.20	0.110	0.126
L	0.90	1.20	0.035	0.047

The recommended mounting pad size



UNIT:MM

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