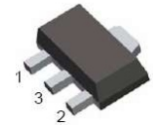


FCX493-HF (NPN)

RoHS Device

Halogen Free



Features

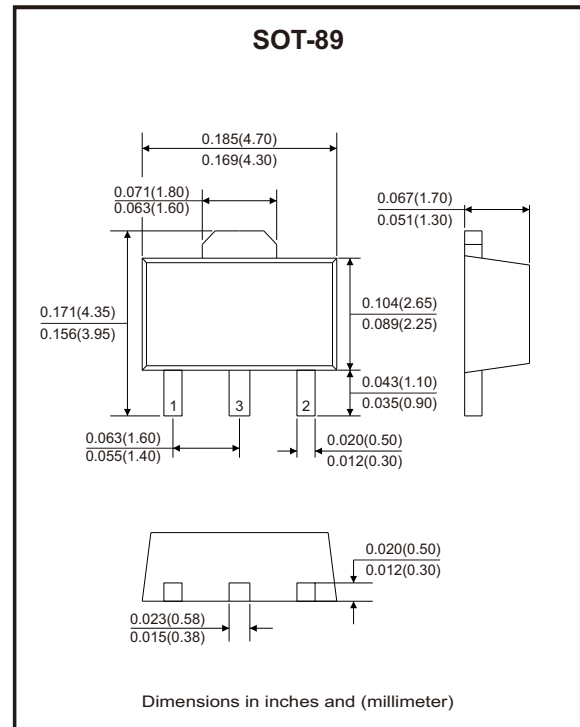
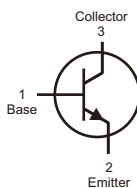
- 100V V_{CEO} .
- 1A continuous current.

Mechanical data

- Case: SOT-89, molded plastic.
- Mounting position: Any.

Circuit Diagram

1. Base
2. Emitter
3. Collector



Maximum Ratings (at $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	120	V
Collector-emitter voltage	V_{CEO}	100	V
Emitter-base voltage	V_{EBO}	5	V
Peak pulse current	I_{CM}	2	A
Collector current-continuous	I_C	1	A
Base current	I_B	200	mA
Power dissipation	P_D	1	W
Junction and storage temperature range	T_J, T_{STG}	-65 to +150	$^{\circ}\text{C}$

Electrical Characteristics (at $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	120			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 10\text{mA}, I_B = 0$	100			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 100\mu\text{A}, I_C = 0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB} = 100\text{V}$			100	nA
Collector-emitter cut-off current	I_{CES}	$V_{CES} = 100\text{V}$			100	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = 4\text{V}$			100	nA
DC current gain	$h_{FE(1)}$	$V_{CE} = 10\text{V}, I_C = 1\text{mA}$	100			
	$h_{FE(2)}$	$V_{CE} = 10\text{V}, I_C = 250\text{mA}$	100		300	
	$h_{FE(3)}$	$V_{CE} = 10\text{V}, I_C = 500\text{mA}$	60			
	$h_{FE(4)}$	$V_{CE} = 10\text{V}, I_C = 1\text{A}$	20			
Collector-emitter saturation voltage	$V_{CE(sat)1}$	$I_C = 500\text{mA}, I_B = 50\text{mA}$			0.3	V
	$V_{CE(sat)2}$	$I_C = 1\text{A}, I_B = 100\text{mA}$			0.6	
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 1\text{A}, I_B = 100\text{mA}$			1.15	V
Base-emitter turn-on voltage	$V_{BE(on)}$	$I_C = 1\text{A}, V_{CE} = 10\text{V}$			1.0	V
Transition frequency	f_T	$V_{CE} = 10\text{V}, I_C = 50\text{mA}, f = 100\text{MHz}$	150			MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$			10	pF

Rating and Characteristic Curves (FCX493-HF)

Fig.1 - $V_{CE(sat)}$ — I_c

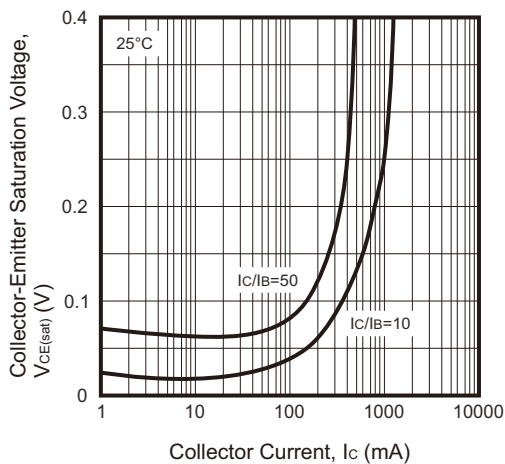


Fig.2 - $V_{CE(sat)}$ — I_c

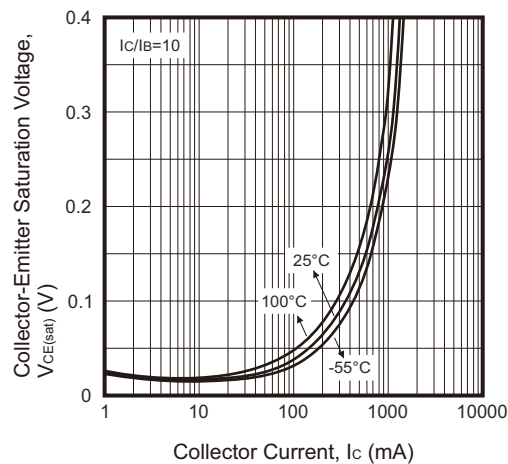


Fig.3 - h_{FE} — I_c

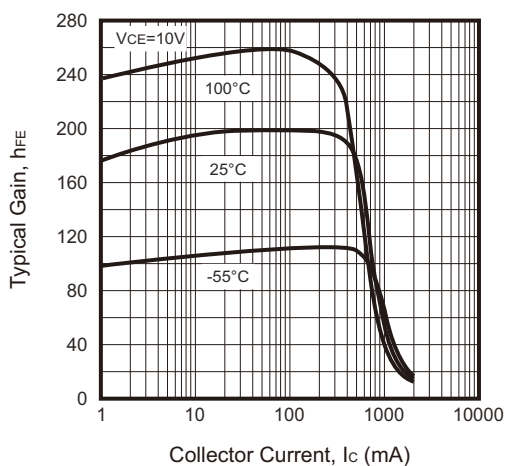


Fig.4 - $V_{BE(sat)}$ — I_c

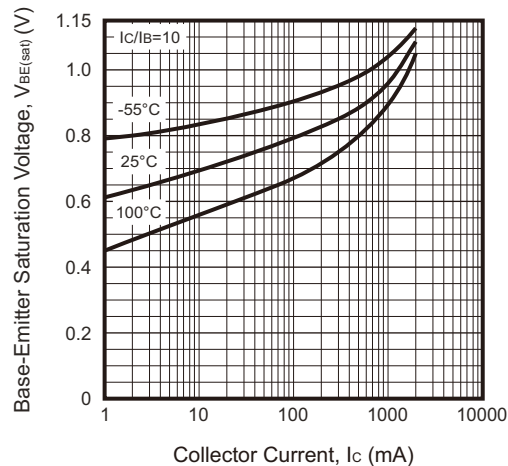
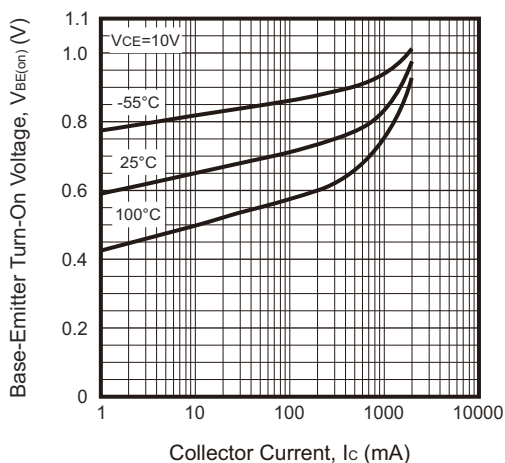
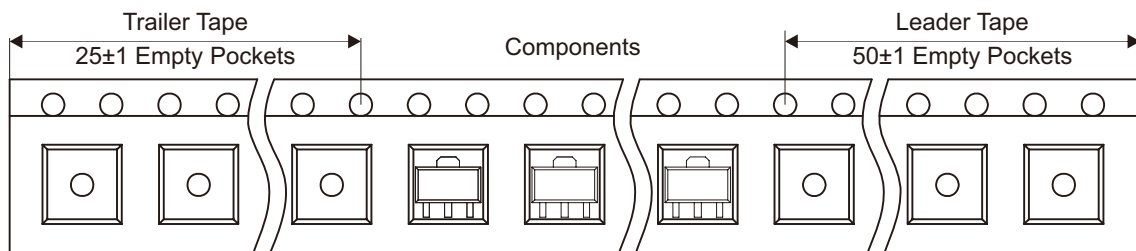
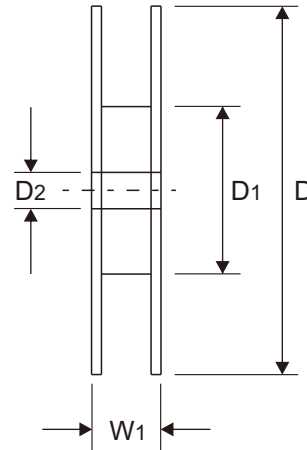
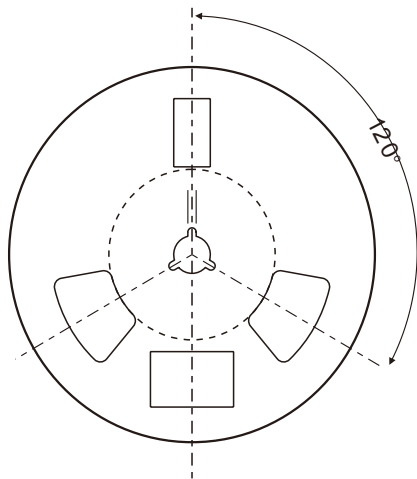
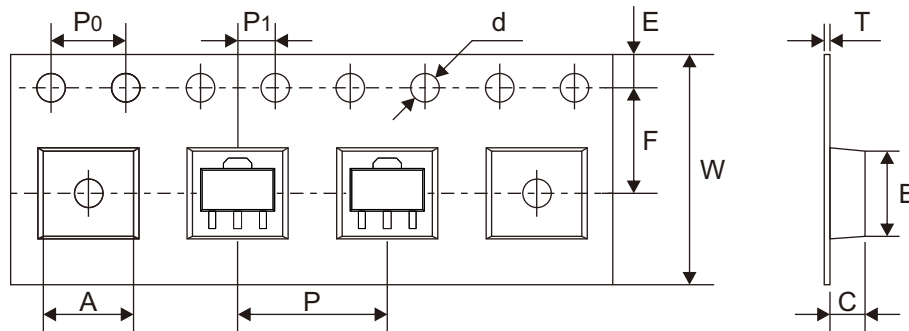


Fig.5 - $V_{BE(on)}$ — I_c



Reel Taping Specification

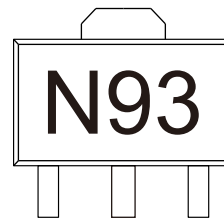


SOT-89	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	4.85 ± 0.10	4.45 ± 0.10	1.85 ± 0.10	1.50 ± 0.10	180.00 ± 1.00	60.00 ± 1.50	13.00 ± 0.50
	(inch)	0.191 ± 0.004	0.175 ± 0.004	0.073 ± 0.004	0.059 ± 0.004	7.087 ± 0.039	2.362 ± 0.059	0.512 ± 0.020

SOT-89	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	5.50 ± 0.05	8.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.292 ± 0.013	12.00 + 0.30 - 0.10	16.40 ± 0.30
	(inch)	0.069 ± 0.004	0.217 ± 0.002	0.315 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.011 ± 0.001	0.472 + 0.012 - 0.004	0.646 ± 0.012

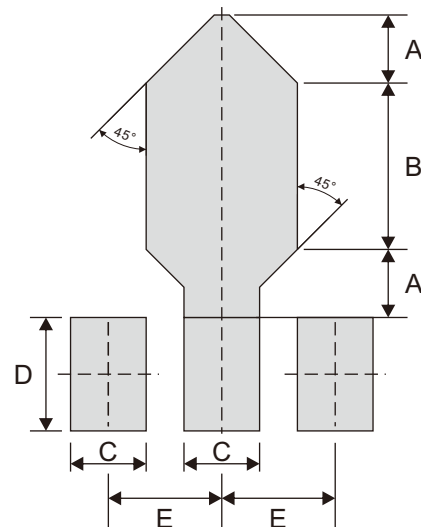
Marking Code

Part Number	Marking Code
FCX493-HF	N93



Suggested P.C.B. PAD Layout

SIZE	SOT-89	
	(mm)	(inch)
A	0.90	0.035
B	2.20	0.087
C	1.00	0.039
D	1.50	0.059
E	1.50	0.059



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-89	1,000	7