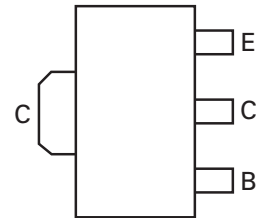
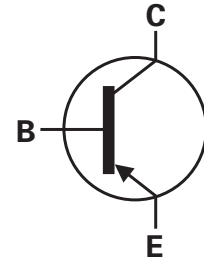
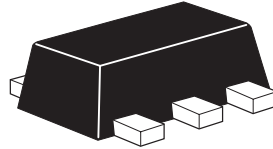


# FCX593

## SOT89 Silicon planar high voltage transistor

Complementary part number - FMMT493

Device marking - P93



Pinout - top view

### Absolute maximum ratings

Parameter	Symbol	Limit	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
Continuous collector current	$I_C$	-1	A
Base current	$I_B$	-200	mA
Power dissipation at $T_{amb} = 25^\circ\text{C}$	$P_{tot}$	1	W
Operating and storage temperature range	$T_j, T_{stg}$	-65 to +150	$^\circ\text{C}$

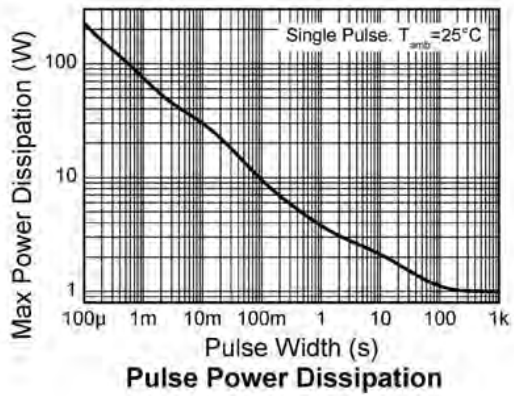
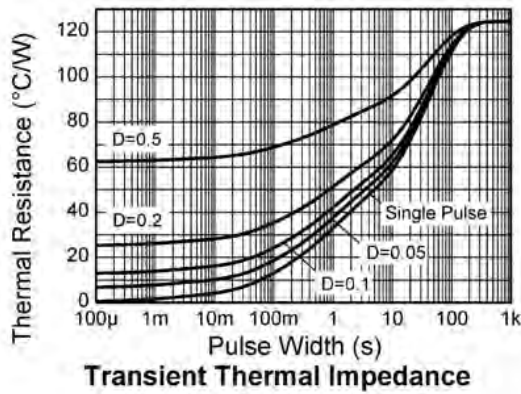
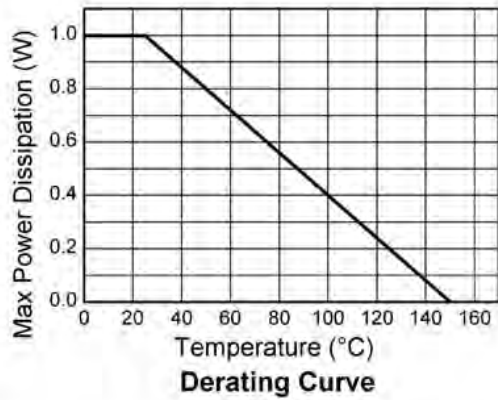
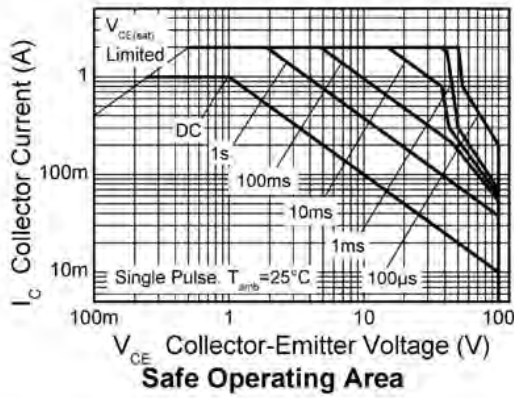
## Electrical characteristics (at $T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated)

Parameter	Symbol	Min.	Max.	Unit	Conditions
Base breakdown voltages	$V_{(BR)CBO}$	-120		V	$I_C = -100\mu\text{A}$
	$V_{(BR)CEO}$	-100		V	$I_C = -10\text{mA}^{(*)}$
	$V_{(BR)EBO}$	-5		V	$I_E = -100\mu\text{A}$
Cut-off currents	$I_{CBO}$		-100	nA	$V_{CB} = -100\text{V}$
	$I_{EBO}$		-100	nA	$V_{EB} = -4\text{V}$
	$I_{CES}$		-100	nA	$V_{CES} = -100\text{V}$
Saturation voltages	$V_{CE(sat)}$		-0.2	V	$I_C = -250\text{mA}, I_B = -25\text{mA}^{(*)}$
			-0.3	V	$I_C = -250\text{mA}, I_B = -25\text{mA}^{(*)}$
	$V_{BE(sat)}$		-1.1	V	$I_C = -500\text{mA}, I_B = -50\text{mA}^{(*)}$
Base-emitter turn-on voltage	$V_{BE(on)}$		-1	V	$I_C = -1\text{mA}, I_B = -5\text{V}^{(*)}$
Static forward current transfer ratio	$h_{FE}$	100			$I_C = -1\text{mA}, V_{CE} = -5\text{V}$
		100			$I_C = -250\text{mA}, V_{CE} = -5\text{V}^{(*)}$
		100	300		$I_C = -500\text{mA}, V_{CE} = -5\text{V}^{(*)}$
		50			$I_C = -1\text{A}, V_{CE} = -5\text{V}^{(*)}$
Transition frequency	$f_T$	50		MHz	$I_C = -50\text{mA}, V_{CE} = -10\text{V}$ $f = 100\text{MHz}$
Output capacitance	$C_{OBO}$		5	pF	$V_{CB} = -10\text{V}, f = 1\text{MHz}$

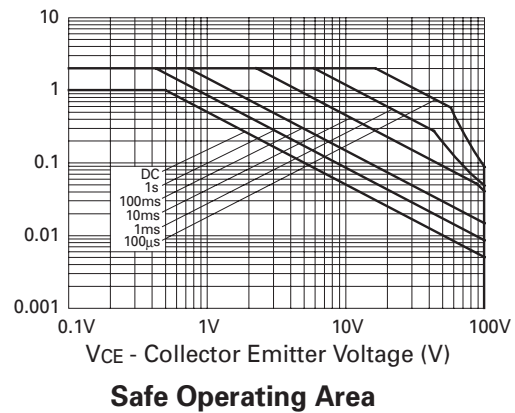
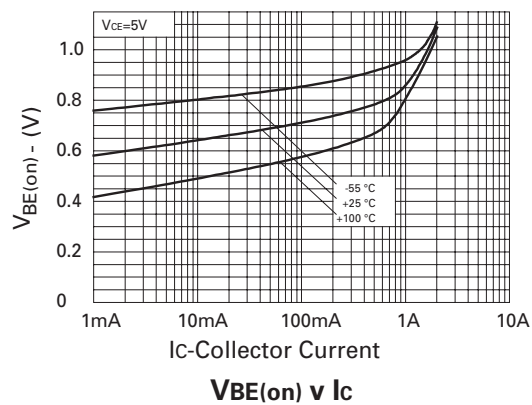
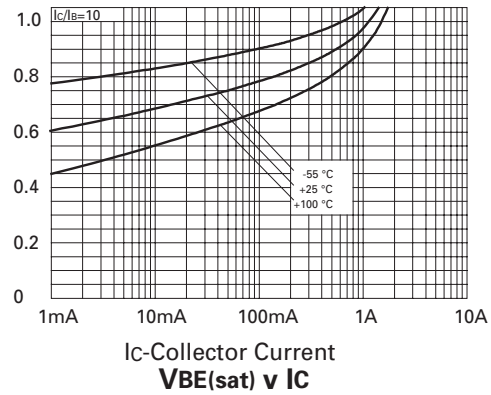
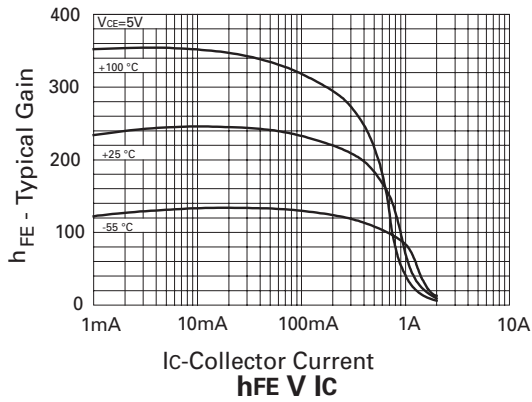
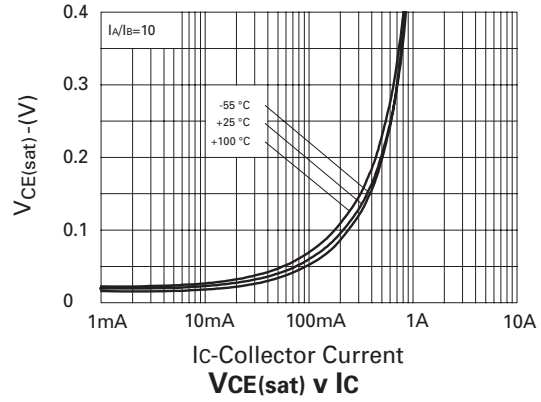
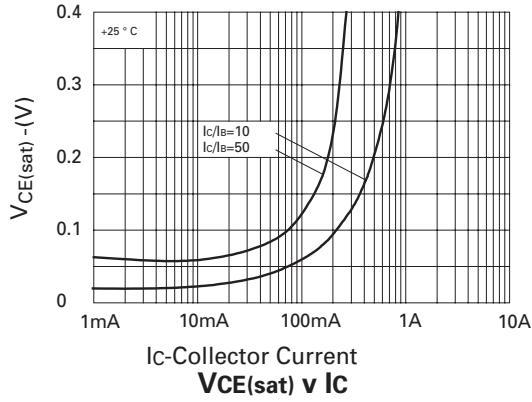
**NOTES:**

(\*) Measured under pulsed conditions. Pulse width =  $300\mu\text{s}$ . Duty cycle  $\leq 2\%$ .

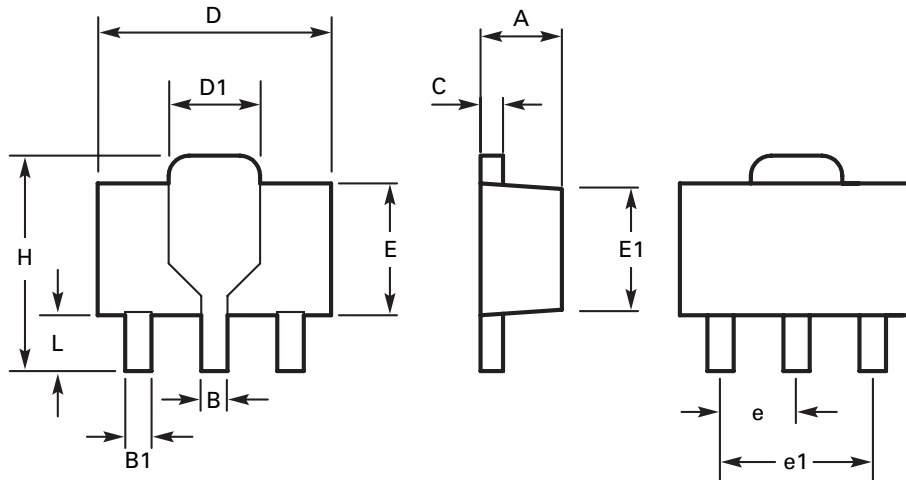
## Thermal characteristics



## Typical characteristics



## Package outline - SOT89



DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min	Max	Min	Max		Min	Max	Min	Max
A	1.40	1.60	0.550	0.630	E	2.29	2.60	0.090	0.102
B	0.44	0.56	0.017	0.022	E1	2.13	2.29	0.084	0.090
B1	0.36	0.48	0.014	0.019	e	1.50 BSC		0.059 BSC	
C	0.35	0.44	0.014	0.017	e1	3.00 BSC		0.118 BSC	
D	4.40	4.60	0.173	0.181	H	3.94	4.25	0.155	0.167
D1	1.52	1.83	0.064	0.072	L	0.89	1.20	0.035	0.047

**Note:** Controlling dimensions are in millimeters. Approximate dimensions are provided in inches

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