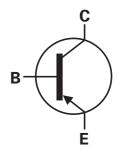


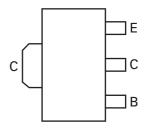
# FCX593 SOT89 Silicon planar high voltage transistor

Complementary part number - FMMT493

Device marking - P93







Pinout - top view

# **Absolute maximum ratings**

Parameter	Symbol	Limit	Unit
Collector-base voltage	V <sub>CBO</sub>	-120	V
Collector-emitter voltage	V <sub>CEO</sub>	-100	V
Emitter-base voltage	V <sub>EBO</sub>	-5	V
Peak pulse current	I <sub>CM</sub>	-2	Α
Continuous collector current	I <sub>C</sub>	-1	Α
Base current	I <sub>B</sub>	-200	mA
Power dissipation at T <sub>amb</sub> =25°C	P <sub>tot</sub>	1	W
Operating and storage temperature range	T <sub>j</sub> , T <sub>stg</sub>	-65 to +150	°C

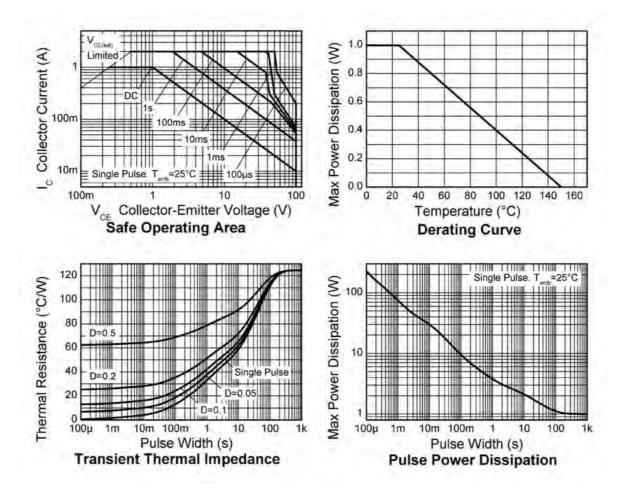
# Electrical characteristics (at $T_{amb} = 25$ °C unless otherwise stated)

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

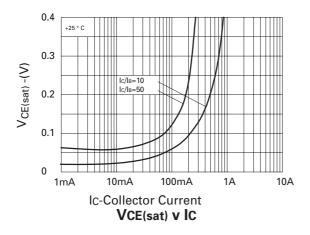
### NOTES:

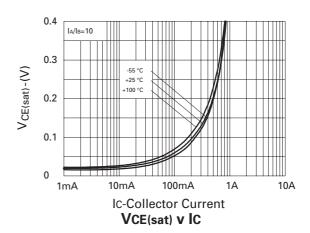
<sup>(\*)</sup> Measured under pulsed conditions. Pulse width = 300 $\mu$ s. Duty cycle  $\leq$ 2%.

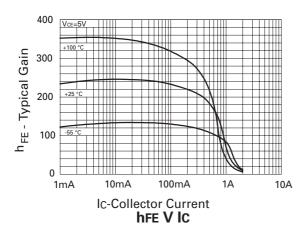
## Thermal characteristics

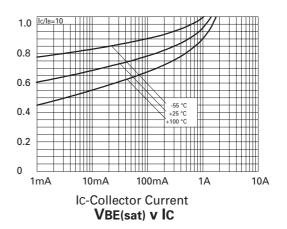


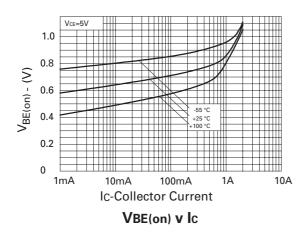
# **Typical characteristics**

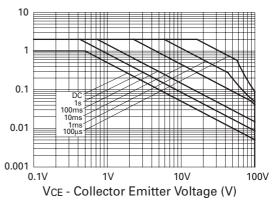






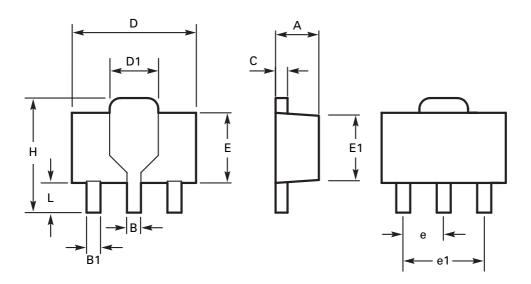






**Safe Operating Area** 

# Package outline - SOT89



DIM	Millin	neters	Inc	hes	DIM	Millimeters		Inches	
	Min	Max	Min	Max		Min	Max	Min	Max
Α	1.40	1.60	0.550	0.630	Е	2.29	2.60	0.090	0.102
В	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	е	1.50	BSC	0.059	BSC
С	0.35	0.44	0.014	0.017	e1	3.00	BSC	0.118	BSC
D	4.40	4.60	0.173	0.181	Н	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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