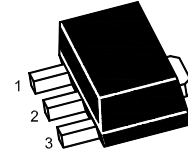


# FCX591A

## PNP Silicon Epitaxial Planar Transistor



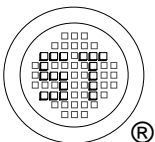
1.Base 2.Collector 3.Emitter  
SOT-89 Plastic Package

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	40	V
Collector Emitter Voltage	$-V_{CEO}$	40	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	1	A
Peak Pulse Collector Current	$-I_{CM}$	2	A
Base Current	$-I_B$	200	mA
Total Power Dissipation	$P_{tot}$	1	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	- 55 to + 150	$^\circ\text{C}$

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

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain				
at $-V_{CE} = 5\text{ V}$ , $-I_C = 1\text{ mA}$	$h_{FE}$	300	-	-
at $-V_{CE} = 5\text{ V}$ , $-I_C = 100\text{ mA}$	$h_{FE}$	300	800	-
at $-V_{CE} = 5\text{ V}$ , $-I_C = 500\text{ mA}$	$h_{FE}$	250	-	-
at $-V_{CE} = 5\text{ V}$ , $-I_C = 1\text{ A}$	$h_{FE}$	160	-	-
at $-V_{CE} = 5\text{ V}$ , $-I_C = 2\text{ A}$	$h_{FE}$	30	-	-
Collector Base Cutoff Current at $-V_{CB} = 30\text{ V}$	$-I_{CBO}$	-	100	nA
Collector Emitter Cutoff Current at $-V_{CE} = 30\text{ V}$	$-I_{CES}$	-	100	nA
Emitter Base Cutoff Current at $-V_{EB} = 4\text{ V}$	$-I_{EBO}$	-	100	nA
Collector Base Breakdown Voltage at $-I_C = 100\text{ }\mu\text{A}$	$-V_{(BR)CBO}$	40	-	V
Collector Emitter Breakdown Voltage at $-I_C = 10\text{ mA}$	$-V_{(BR)CEO}$	40	-	V
Emitter Base Breakdown Voltage at $-I_E = 100\text{ }\mu\text{A}$	$-V_{(BR)EBO}$	5	-	V
Collector Emitter Saturation Voltage				
at $-I_C = 100\text{ mA}$ , $-I_B = 1\text{ mA}$	$-V_{CE(sat)}$	-	0.2	V
at $-I_C = 500\text{ mA}$ , $-I_B = 20\text{ mA}$	$-V_{CE(sat)}$	-	0.35	V
at $-I_C = 1\text{ A}$ , $-I_B = 100\text{ mA}$	$-V_{CE(sat)}$	-	0.5	V
Base Emitter Saturation Voltage at $-I_C = 1\text{ A}$ , $-I_B = 50\text{ mA}$	$-V_{BE(sat)}$	-	1.1	V
Base Emitter Turn-on Voltage at $-V_{CE} = 5\text{ V}$ , $-I_C = 1\text{ A}$	$-V_{BE(on)}$	-	1	V
Transition Frequency at $-V_{CE} = 10\text{ V}$ , $-I_C = 50\text{ mA}$ , $f = 100\text{ MHz}$	$f_T$	150	-	MHz
Collector Output Capacitance at $-V_{CB} = 10\text{ V}$ , $f = 1\text{ MHz}$	$C_{ob}$	-	10	pF



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Fig.1  $I_C$  -  $V_{BE(on)}$   
at  $V_{CE} = -5V$ ,  $T_a = 25C$

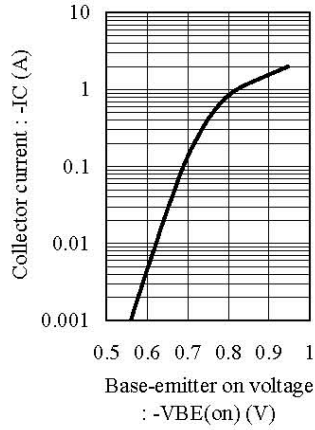


Fig.2  $h_{FE}$  -  $I_C$   
at  $V_{CE} = -5V$ ,  $T_a = 25C$

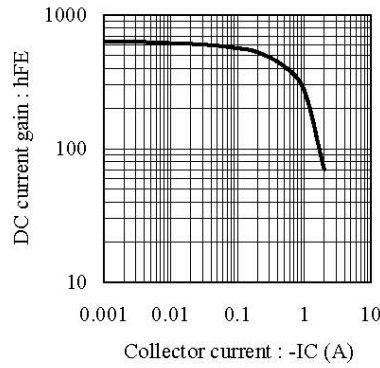


Fig.3  $V_{CE(sat)}$  -  $I_C$   
at  $I_C/I_B = 10$ ,  $T_a = 25C$

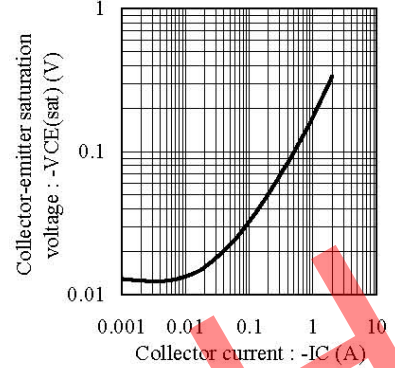


Fig.4  $V_{CE(sat)}$  -  $I_C$   
at  $I_C/I_B = 25$ ,  $T_a = 25C$

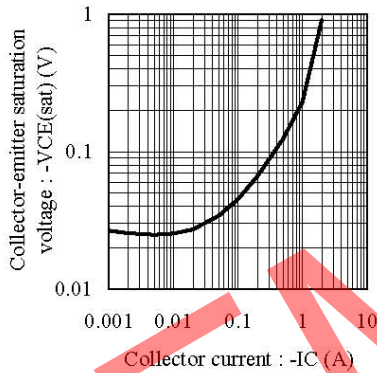


Fig.5  $V_{CE(sat)}$  -  $I_C$   
at  $I_C/I_B = 100$ ,  $T_a = 25C$

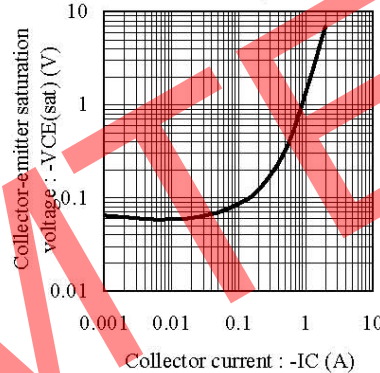


Fig.6  $V_{BE(sat)}$  -  $I_C$   
at  $I_C/I_B = 20$ ,  $T_a = 25C$

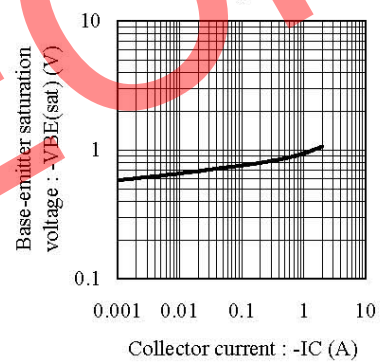


Fig.7  $f_T$  -  $I_E$   
at  $V_{CE} = -10V$ ,  $T_a = 25C$

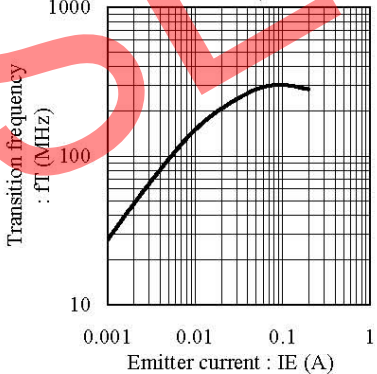


Fig.8  $C_{ob}$  -  $V_{CB}$   
at  $f = 1MHz$ ,  $T_a = 25C$

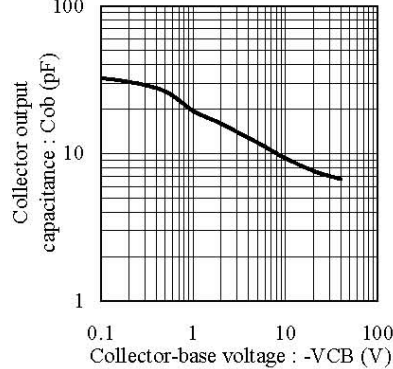
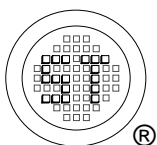
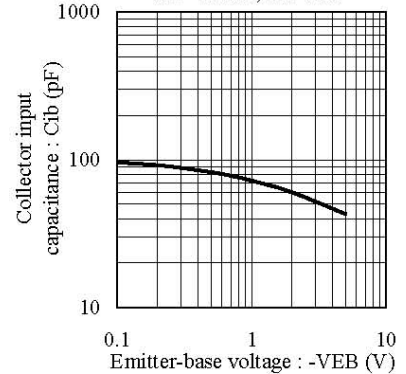
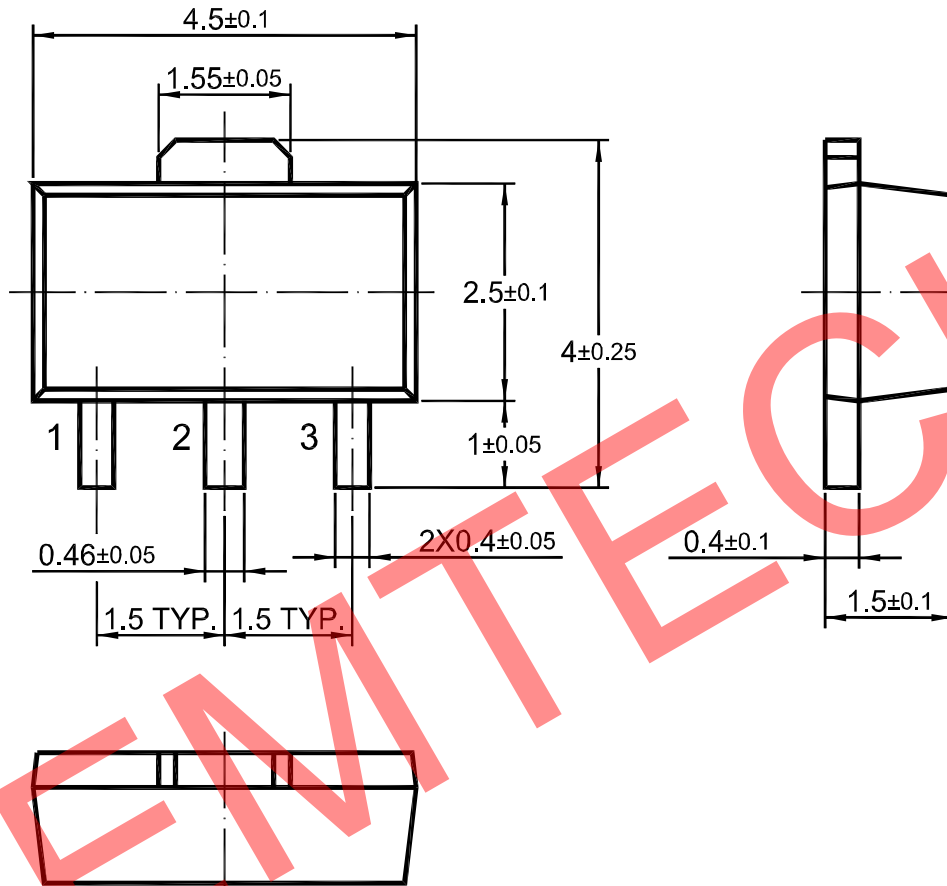


Fig.9  $C_{ib}$  -  $V_{EB}$   
at  $f = 1MHz$ ,  $T_a = 25C$

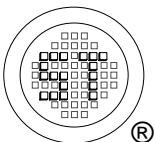


# FCX591A

## SOT-89 PACKAGE OUTLINE



Dimensions in mm



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