

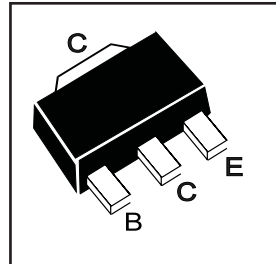
# SOT89 PNP SILICON POWER (SWITCHING) TRANSISTOR

**FCX717**

ISSUE 1 - MAY 1999

## FEATURES

- \* **2W POWER DISSIPATION**
- \* 10A Peak Pulse Current
- \* Excellent  $H_{FE}$  Characteristics up to 10 Amps
- \* Extremely Low Saturation Voltage E.g. 12mv Typ.
- \* Extremely Low Equivalent On-resistance;  
 **$R_{CE(sat)}$  77m $\Omega$  at 3A**



Partmarking Detail - 717

## ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	$V_{CBO}$	-12	V
Collector-Emitter Voltage	$V_{CEO}$	-12	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Peak Pulse Current **	$I_{CM}$	-10	A
Continuous Collector Current	$I_C$	-3	A
Base Current	$I_B$	-500	mA
Power Dissipation at $T_{amb}=25^{\circ}C$	$P_{tot}$	1 † 2 ‡	W W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150	$^{\circ}C$

† recommended  $P_{tot}$  calculated using FR4 measuring 15x15x0.6mm

‡ Maximum power dissipation is calculated assuming that the device is mounted on FR4 substrate measuring 40x40x0.6mm and using comparable measurement methods adopted by other suppliers.

\*\*Measured under pulsed conditions. Pulse width=300 $\mu$ s. Duty cycle @ 2%

Spice parameter data is available upon request for these devices

Refer to the handling instructions for soldering surface mount components.

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## ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-12	-35		V	$I_C = -100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-12	-25		V	$I_C = -10\text{mA}^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5	-8.5		V	$I_E = -100\mu\text{A}$
Collector Cut-Off Current	$I_{CBO}$			-100	nA	$V_{CB} = -10\text{V}$
Emitter Cut-Off Current	$I_{EBO}$			-100	nA	$V_{EB} = -4\text{V}$
Collector Emitter Cut-Off Current	$I_{CES}$			-100	nA	$V_{CES} = -10\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		-12 -110 -230	-20 -150 -320	mV mV	$I_C = -0.1\text{A}, I_B = -10\text{mA}^*$ $I_C = -1\text{A}, I_B = -10\text{mA}^*$ $I_C = -3\text{A}, I_B = -50\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		-0.92	-1.05	V	$I_C = -3\text{A}, I_B = -50\text{mA}^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		-0.85	-1.0	V	$I_C = -3\text{A}, V_{CE} = -2\text{V}^*$
Static Forward Current Transfer Ratio	$h_{FE}$	300 300 160 60 45	475 450 240 100 70			$I_C = -10\text{mA}, V_{CE} = -2\text{V}^*$ $I_C = -0.1\text{A}, V_{CE} = -2\text{V}^*$ $I_C = -3\text{A}, V_{CE} = -2\text{V}^*$ $I_C = -8\text{A}, V_{CE} = -2\text{V}^*$ $I_C = -10\text{A}, V_{CE} = -2\text{V}^*$
Transition Frequency	$f_T$	80	110		MHz	$I_C = -50\text{mA}, V_{CE} = -10\text{V}$ $f = 100\text{MHz}$
Output Capacitance	$C_{obo}$		21	30	pF	$V_{CB} = -10\text{V}, f = 1\text{MHz}$
Turn-On Time	$t_{(on)}$		70		ns	$V_{CC} = -6\text{V}, I_C = -2\text{A}$
Turn-Off Time	$t_{(off)}$		130		ns	$I_{B1} = I_{B2} = 50\text{mA}$

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

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