



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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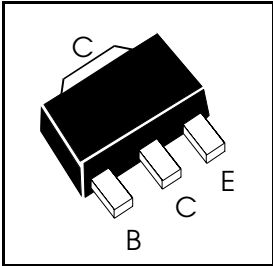
SOT89 PNP SILICON POWER (SWITCHING) TRANSISTOR

ISSUE 1 - SEPTEMBER 1999

FCX1149A

FEATURES

- * **2W POWER DISSIPATION**
- * 20A Peak Pulse Current
- * Excellent H_{FE} Characteristics up to 10 Amps
- * Extremely Low Saturation Voltage E.g. 45mv Typ.
- * Extremely Low Equivalent On-resistance;
 $R_{CE(sat)}$ 67m Ω at 3A



Partmarking Detail - 149

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	-30	V
Collector-Emitter Voltage	V_{CEO}	-25	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 μ s. Duty cycle \leq 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	VALUE			UNIT	CONDITIONS.
		MIN.	TYP.	MAX.		
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-30			V	$I_C = -100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CES}$	-25			V	$I_C = -100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-25			V	$I_C = -10\text{mA}^*$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEV}$	-25			V	$I_C = -100\mu\text{A}, V_{EB} = +1\text{V}$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5			V	$I_E = -100\mu\text{A}$
Collector Cut-Off Current	I_{CBO}		-0.3	-100	nA	$V_{CB} = -24\text{V}$
Emitter Cut-Off Current	I_{EBO}		-0.3	-100	nA	$V_{EB} = -4\text{V}$
Collector Emitter Cut-Off Current	I_{CES}		-0.3	-100	nA	$V_{CES} = -20\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		-45 -100 -140 -200 -230	-80 -170 -240 -300 -350	mV	$I_C = -0.1\text{A}, I_B = -1\text{mA}^*$ $I_C = -0.5\text{A}, I_B = -3\text{mA}^*$ $I_C = -1\text{A}, I_B = -7\text{mA}^*$ $I_C = -3\text{A}, I_B = -100\text{mA}^*$ $I_C = -4\text{A}, I_B = -140\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		-930	-1050	mV	$I_C = -3\text{A}, I_B = -100\text{mA}^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		-840	-1000	mV	$I_C = -3\text{A}, V_{CE} = -2\text{V}^*$
Static Forward Current Transfer Ratio	h_{FE}	270 250 150 115	450 400 260 190 50	800		$I_C = -10\text{mA}, V_{CE} = -2\text{V}^*$ $I_C = -0.5\text{A}, V_{CE} = -2\text{V}^*$ $I_C = -3.0\text{A}, V_{CE} = -2\text{V}^*$ $I_C = -5.0\text{A}, V_{CE} = -2\text{V}^*$ $I_C = -10.0\text{A}, V_{CE} = -2\text{V}^*$
Transition Frequency	f_T		135		MHz	$I_C = -50\text{mA}, V_{CE} = -10\text{V}$ $f = 50\text{MHz}$
Output Capacitance	C_{cb}		50		pF	$V_{CB} = -10\text{V}, f = 1\text{MHz}$
Switching Times	t_{on}		150		ns	$I_C = -4\text{A}, I_B = -40\text{mA}, V_{CC} = -10\text{V}$
	t_{off}		270		ns	$I_C = -4\text{A}, I_B = -40\text{mA}, V_{CC} = -10\text{V}$

*Measured under pulsed conditions. Pulse width=300 μs . Duty cycle $\leq 2\%$

TYPICAL CHARACTERISTICS

