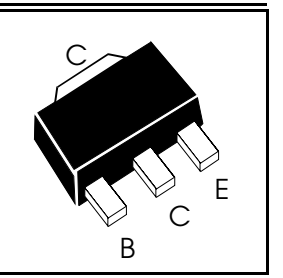
SOT89 NPN SILICON POWER (SWITCHING) TRANSISTOR

FCX619

ISSUE 5 - SEPTEMBER 1999

FEATURES

- *** 2W POWER DISSIPATION**
- * 6A PEAK PULSE CURRENT
- * EXCELLENT h_{FE} CHARACTERISTICS UP TO 6 Amps
- * EXTREMELY LOW SATURATION VOLTAGE e.g. 13mV typ.
- * EXTREMELY LOW EQUIVALENT ON-RESISTANCE;
- *** $R_{CE(sat)}$ 87mΩ at 2.75A**



COMPLIMENTARY TYPE - FCX720
PARTMARKING DETAIL - 619

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	5	V
Peak Pulse Current	I_{CM}	6	A
Continuous Collector Current	I_C	2.75	A
Base Current	I_B	500	mA
Power Dissipation at T_{amb}=25°C	P_{tot}	1† 2‡	**W**
Operating and Storage Temperature Range	T_j:T_{stg}	-55 to +150	°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=300μs. Duty cycle ≤ 2%

Spice parameter data is available upon request for these devices

Refer to the handling instructions for soldering surface mount components.

ZETEX

FCX619

ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	50	190		V	I_C=100μA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	50	65		V	I_C=10mA*
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5	8.3		V	I_E=100μA
Collector Cut-Off Current	I_{CBO}			100	nA	V_{CB}=40V
Emitter Cut-Off Current	I_{EBO}			100	nA	V_{EB}=4V
Collector Emitter Cut-Off Current	I_{CES}			100	nA	V_{CES}=40V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$		13 150 190 240	25 220 260 320	mV mV mV mV	I_C=0.1A, I_B=10mA* I_C=1A, I_B=10mA* I_C=2A, I_B=50mA* I_C=2.75A,I_B=100mA*
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$		0.97	1.1	V	I_C=2.75A, I_B=100mA*
Base-Emitter Turn-On Voltage	$V_{BE(ON)}$		0.89	1.0	V	I_C=2.75A, V_{CE}=2V*
Static Forward Current Transfer Ratio	h_{FE}	200 300 200 100	400 450 400 200 30			I_C=10mA, V_{CE}=2V* I_C=200mA, V_{CE}=2V* I_C=1A, V_{CE}=2V* I_C=2A, V_{CE}=2V* I_C=6A, V_{CE}=2V*
Transition Frequency	f_T	100	165		MHz	I_C=50mA, V_{CE}=10V f=100MHz
Output Capacitance	C_{OBO}		12	20	pF	V_{CB}=10V, f=1MHz
Turn-On Time	$t_{(ON)}$		170		ns	V_{CC}=10V, I_C=1A I_{B1}=-I_{B2}=10mA
Turn-Off Time	$t_{(OFF)}$		750		ns	

*Measured under pulsed conditions. Pulse width=300μs. Duty cycle ≤ 2%

Spice parameter data is available upon request for this device

TYPICAL CHARACTERISTICS

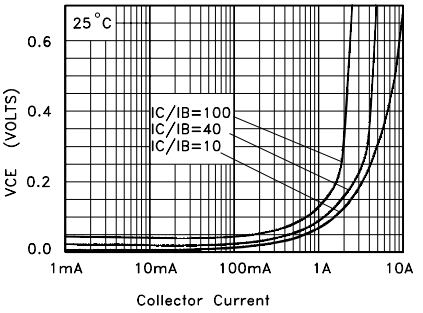


FIG. 1 $V_{CE(SAT)}$ vs I_C

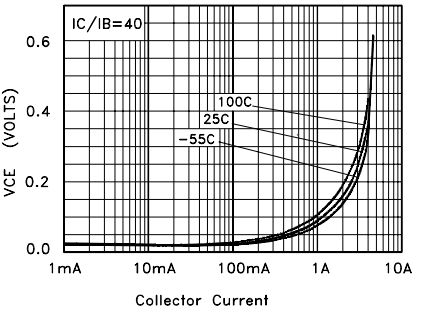


FIG. 2 $V_{CE(SAT)}$ vs I_C

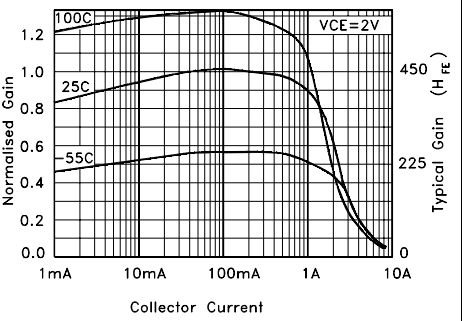


FIG. 3 H_{FE} vs I_C

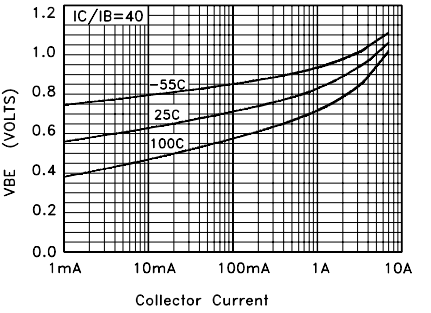


FIG. 4 $V_{BE(SAT)}$ vs I_C

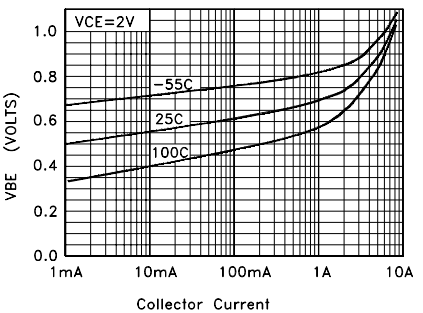


FIG. 5 $V_{BE(ON)}$ vs I_C

ZETEX