

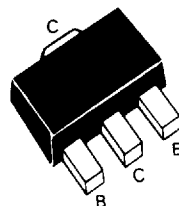
SOT89 NPN SILICON PLANAR MEDIUM POWER DARLINGTON TRANSISTOR

FCX604

FEATURES:

- * 1A CONTINUOUS COLLECTOR CURRENT
- * 1.5W POWER DISSIPATION
- * GUARANTEED h_{FE} SPECIFIED UP TO 2A
- * FAST SWITCHING

PARTMARKING DETAIL - 604



ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	120	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	10	V
Peak Pulse Current δ	I_{CM}	4	A
Continuous Collector Current	I_C	1.5	A
Power Dissipation at $T_{amb} = 25^\circ\text{C}$	P_{TOT}	1	W
Operating and Storage Temperature Range	$t_j: t_{stg}$	-55 to +150	$^\circ\text{C}$

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	120			V	$I_C = 100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	100			V	$I_C = 10\text{mA}^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	10			V	$I_E = 100\mu\text{A}$
Collector Cut-Off Current	I_{CBO}			0.01	μA	$V_{CB} = 100\text{V}$
Emitter Cut-Off Current	I_{EBO}			0.1	μA	$V_{EB} = 8\text{V}$
Collector-Emitter Cut-Off Current	I_{CES}			10	μA	$V_{CES} = 100\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$			1.5 1.0	V	$I_C = 1\text{A}, I_B = 1\text{mA}^*$ $I_C = 0.25\text{A}, I_B = 0.25\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$			1.8	V	$I_C = 1\text{A}, I_B = 1\text{mA}^*$
Base Emitter Turn-On Voltage	$V_{BE(ON)}$			1.7	V	$I_C = 1\text{A}, V_{CE} = 5\text{V}$
Static Forward Current Transfer Ratio	h_{FE}	2000 5000 2000 500		100000	V	$I_C = 50\text{mA}, V_{CE} = 5\text{V}$ $I_C = 500\text{mA}, V_{CE} = 5\text{V}^*$ $I_C = 1\text{A}, V_{CE} = 5\text{V}^*$ $I_C = 2\text{A}, V_{CE} = 5\text{V}^*$
Transition Frequency	f_T	150			MHz	$I_C = 100\text{mA}, V_{CE} = 10\text{V}, f = 20\text{MHz}$
Input Capacitance	C_{ibo}		90		pF	$V_{EB} = 0.5\text{V}, f = 1\text{MHz}$
Output Capacitance	C_{obo}		15		pF	$V_{CE} = 10\text{V}, f = 1\text{MHz}$
Switching Times	t_{off} t_{off}		0.5 1.6		μs μs	$I_C = 0.5\text{A}, V_{CE} = 10\text{V}$ $I_{B1} = I_{B2} = 0.5\text{mA}$

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

9970578 0008321 762