SOT89 NPN SILICON PLANAR DARLINGTON TRANSISTOR

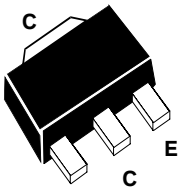
BST51

ISSUE 3 – JANUARY 1996

FEATURES

* Fast Switching
* High h_{FE}

PARTMAKING DETAIL — AS2



SOT89

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	10	V
Pea Pulse Current	I_{CM}	1.5	A
Continuous Collector Current	I_C	500	mA
Base Current	I_B	100	mA
Power Dissipation at T_{amb}=25°C	P_{tot}	1	W
Operating and Storage Temperature Range	T_j:T_{stg}	-65 to +150	°C

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

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	80		V	I_C=10μA, I_E=0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	60		V	I_C=10mA, I_B=0*
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	10		V	I_E=10μA, I_C=0
Emitter Cut-Off Current	I_{EBO}		10	μA	V_{EB}=8V, I_E=0
Collector-Emitter Cut-Off Current	I_{CES}		10	μA	V_{CE}=60V, I_C=0
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		1.3 1.3	V V	I_C=500mA, I_B=0.5mA I_C=500mA, I_B=0.5mA T_j=150°C
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		1.9	V	I_C=500mA, I_B=0.5mA
Static Forward Current Transfer Ratio	h_{FE}	1K 2K			I_C=150mA, V_{CE}=10V* I_C=-500mA, V_{CE}=-10V*
Turn On Time	t_{on}	400 Typical		ns	I_C=500mA I_{Bon}=I_{Boff}=0.5mA
Turn Off Time	t_{off}	1.5K Typical		ns	

* Measured under pulsed conditions. Pulse width=300μs. Duty cycle ≤ 2%
Spice parameter data is available upon request for this device
For typical graphs see FMMT38A datasheet