

# SOT89 NPN SILICON PLANAR DARLINGTON TRANSISTOR

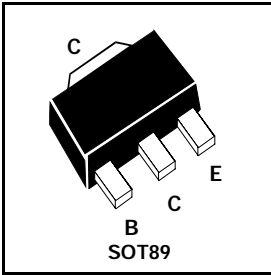
**BST51**

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## FEATURES

- \* Fast Switching
- \* High  $h_{FE}$

PARTMAKING DETAIL — AS2



## 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 $T_{amb}=25^{\circ}C$	$P_{tot}$	1	W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-65 to +150	$^{\circ}C$

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

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	80		V	$I_C=10\mu A, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	60		V	$I_C=10mA, I_B=0^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	10		V	$I_E=10\mu A, I_C=0$
Emitter Cut-Off Current	$I_{EBO}$		10	$\mu A$	$V_{EB}=8V, I_E=0$
Collector-Emitter Cut-Off Current	$I_{CES}$		10	$\mu A$	$V_{CE}=60V, I_C=0$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		1.3 1.3	V V	$I_C=500mA, I_B=0.5mA$ $I_C=500mA, I_B=0.5mA$ $T_j=150^{\circ}C$
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=300 $\mu s$ . Duty cycle  $\leq 2\%$   
Spice parameter data is available upon request for this device  
For typical graphs see FMMT38A datasheet