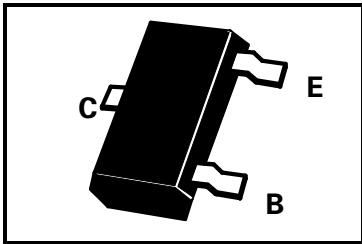


# SOT23 PNP SILICON PLANAR MEDIUM POWER SWITCHING TRANSISTORS

ISSUE 2 – SEPTEMBER 1995

**BSS69**  
**BSS70**

PARTMARKING DETAILS — BSS69 - L2  
 BSS70 - L3  
 BSS69R - L6  
 BSS70R - L7



## ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	$V_{CBO}$	-40	V
Collector-Emitter Voltage	$V_{CEO}$	-40	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Peak Pulse Current	$I_{CM}$	-200	mA
Continuous Collector Current	$I_C$	-100	mA
Base Current	$I_B$	-50	mA
Power Dissipation at $T_{amb}=25^\circ\text{C}$	$P_{TOT}$	330	mW
Operating and Storage Temperature Range	$t_j:t_{stg}$	-55 to +150	$^\circ\text{C}$

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

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	CONDITIONS.
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-40		V	$I_C=-1\text{mA}$
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-40		V	$I_C=-10\mu\text{A}$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5		V	$I_E=-10\mu\text{A}$
Collector- Emitter Cut-off Current	$I_{CES}$		-50	nA	$V_{CES}=-30\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		-0.25 -0.40	V V	$I_C=-10\text{mA}, I_B=-1\text{mA}$ $I_C=-50\text{mA}, I_B=-5\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	-0.65	-0.85 -0.95	V V	$I_C=-10\text{mA}, I_B=-1\text{mA}$ $I_C=-50\text{mA}, I_B=-5\text{mA}^*$
Static Forward Current Transfer Ratio	BSS69 $h_{FE}$	30 40 50 30 15	150		$I_C=-100\mu\text{A}, I_C=-1\text{mA}, I_C=-10\text{mA}, V_{CE}=-1\text{V}$ $I_C=-50\text{mA}^*, I_C=-100\text{mA}^*,$
Static Forward Current Transfer Ratio	BSS70 $h_{FE}$	60 80 100 60 30	300		$I_C=-100\mu\text{A}, I_C=-1\text{mA}, I_C=-10\text{mA}, V_{CE}=-1\text{V}$ $I_C=-50\text{mA}^*, I_C=-100\text{mA}^*,$
Transition Frequency	BSS69 BSS70 $f_T$	200 250		MHz MHz	$I_C=-10\text{mA}, V_{CE}=-20\text{V}$ $f=100\text{MHz}$
Collector-Base Capacitance	$C_{obo}$		4.5	pF	$V_{CB}=-5\text{V}, f=100\text{kHz}$
Emitter-Base Capacitance	$C_{ibo}$		10	pF	$V_{EB}=-0.5\text{V}, f=100\text{kHz}$
Noise Figure	N	Typ. 5		dB	$I_C=-100\mu\text{A}, V_{CE}=-5\text{V}$ $R_S=1\text{k}\Omega, f=10\text{Hz to }15.7\text{ kHz}$
Switching times: Delay; Rise Storage Time Fall Time	$t_d; t_r$ $t_s$ $t_f$		35 225 70	ns ns ns	$V_{CC}=-3\text{V}, I_C=-10\text{mA}$ $I_{B1}= I_{B2} =-1\text{mA}$

\*Measured under pulsed conditions. Pulse width=300 $\mu\text{s}$ . Duty cycle  $\leq 2\%$