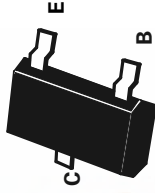


# SOT23 PNP SILICON PLANAR MEDIUM POWER SWITCHING TRANSISTORS

## BSS69 BSS70

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PARTMARKING DETAILS — BSS69 - L2  
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### ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	$V_{CB0}$	-40	V
Collector-Emitter Voltage	$V_{CE0}$	-40	V
Emitter-Base Voltage	$V_{EB0}$	-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	$V_{CE} = -30\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	-0.25		V	$I_C = -10\text{mA}, I_B = -1\text{mA}$
Saturation Voltage		-0.40		V	$I_C = -50\text{mA}, I_B = -5\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	-0.65	-0.85	V	$I_C = -10\text{mA}, I_B = -1\text{mA}$
			-0.95	V	$I_C = -50\text{mA}, I_B = -5\text{mA}^*$
Static Forward Current Transfer Ratio	$h_{FE}$	30			$I_C = -100\mu\text{A}, V_{CE} = -1\text{V}$
		40			$I_C = -1\text{mA}, V_{CE} = -1\text{V}$
		50	150		$I_C = -10\text{mA}, V_{CE} = -1\text{V}$
		30			$I_C = -50\text{mA}^*, V_{CE} = -1\text{V}$
		15			$I_C = -100\text{mA}^*, V_{CE} = -1\text{V}$
Static Forward Current Transfer Ratio	$h_{FE}$	60			$I_C = -100\mu\text{A}, V_{CE} = -20\text{V}$
		80			$I_C = -1\text{mA}, V_{CE} = -20\text{V}$
		100	300		$I_C = -10\text{mA}, V_{CE} = -20\text{V}$
		60			$I_C = -50\text{mA}^*, V_{CE} = -20\text{V}$
		30			$I_C = -100\text{mA}^*, V_{CE} = -20\text{V}$
Transition Frequency	$f_T$	200		MHz	$I_C = -10\text{mA}, V_{CE} = -20\text{V}, f = 100\text{MHz}$
		250		MHz	$f = 100\text{MHz}$
Collector-Base Capacitance	$C_{ob0}$		4.5	pF	$V_{CB} = -5\text{V}, f = 100\text{kHz}$
Emitter-Base Capacitance	$C_{ib0}$		10	pF	$V_{EB} = -0.5\text{V}, f = 100\text{kHz}$
Noise Figure	N	Typ. 5		dB	$I_C = -100\mu\text{A}, V_{CE} = -5\text{V}$
Switching times: Delay; Rise	$t_d; t_r$		35	ns	$R_S = 1\text{k}\Omega, f = 10\text{Hz to } 15.7\text{ kHz}$
Storage Time	$t_s$		225	ns	$V_{CC} = -3\text{V}, I_C = -10\text{mA}$
Fall Time	$t_f$		70	ns	$I_{B1} = -I_{B2} = -1\text{mA}$

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

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