

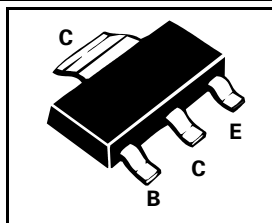
SOT223 NPN SILICON PLANAR MEDIUM POWER TRANSISTORS

ISSUE 3 – FEBRUARY 1996

BSP40 BSP42

COMPLEMENTARY TYPES – BSP40 – BSP30
BSP42 – BSP32

PARTMARKING DETAIL – Device type in full



ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	BSP40	BSP42	UNIT
Collector-Base Voltage	V_{CBO}	70	90	V
Collector-Emitter Voltage	V_{CEO}	60	80	V
Emitter-Base Voltage	V_{EBO}	5		V
Peak Pulse Current	I_{CM}	2		A
Continuous Collector Current	I_C	1		A
Base Current	I_B	100		mA
Power Dissipation at $T_{amb}=25^\circ\text{C}$	P_{tot}	2		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.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	70 90		V V	$I_C=100\mu\text{A}$ $I_C=100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	60 80		V V	$I_C=10\text{mA}$ $I_C=10\text{mA}$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5		V	$I_E=10\mu\text{A}$
Collector Cut-Off Current	I_{CBO}		100 50	nA μA	$V_{CB}=60\text{V}$ $V_{CB}=60\text{V}, T_{amb}=125^\circ\text{C}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.25 0.5	V V	$I_C=150\text{mA}, I_B=15\text{mA}$ $I_C=500\text{mA}, I_B=50\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		1.0 1.2	V V	$I_C=150\text{mA}, I_B=15\text{mA}$ $I_C=500\text{mA}, I_B=50\text{mA}$
Static Forward Current Transfer Ratio	h_{FE}	10 40 30	120		$I_C=100\mu\text{A}, V_{CE}=5\text{V}$ $I_C=100\text{mA}, V_{CE}=5\text{V}$ $I_C=500\text{mA}, V_{CE}=5\text{V}$
Collector Capacitance	C_c		12	pF	$V_{CB}=10\text{V}, f=1\text{MHz}$
Emitter Capacitance	C_e		90	pF	$V_{EB}=0.5\text{V}, f=1\text{MHz}$
Transition Frequency	f_T	100		MHz	$I_C=50\text{mA}, V_{CE}=10\text{V}$ $f=35\text{MHz}$
Turn-On Time	T_{on}		250	ns	$V_{CC}=20\text{V}, I_C=100\text{mA}$
Turn-Off Time	T_{off}		1000	ns	$I_{B1}=-I_{B2}=-5\text{mA}$

*Measured under pulsed conditions. Pulse width=300 μs . Duty cycle $\leq 2\%$
For typical characteristics graphs see FMMT493 datasheet.