

SOT89 NPN SILICON PLANAR MEDIUM POWER TRANSISTORS

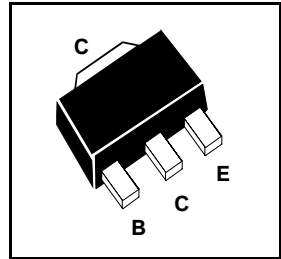
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BSR40 BSR42

COMPLEMENTARY TYPES – BSR40 – BSR30
BSR42 – BSR32

PARTMARKING DETAIL – BSR40 – AR1
BSR42 – AR3



ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	BSR40	BSR42	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 $T_{amb}=25^{\circ}C$	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 BSR40 BSR42	$V_{(BR)CBO}$	70 90		V V	$I_C=100\mu A$ $I_C=100\mu A$
Collector-Emitter Breakdown Voltage BSR40 BSR42	$V_{(BR)CEO}$	60 80		V V	$I_C=10mA$ $I_C=10mA$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5		V	$I_E=10\mu A$
Collector Cut-Off Current	I_{CBO}		100 50	nA μA	$V_{CB}=60V$ $V_{CB}=60V, T_{amb}=125^{\circ}C$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.25 0.5	V V	$I_C=150mA, I_B=15mA$ $I_C=500mA, I_B=50mA$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		1.0 1.2	V V	$I_C=150mA, I_B=15mA$ $I_C=500mA, I_B=50mA$
Static Forward Current Transfer Ratio	h_{FE}	10 40 30	120		$I_C=100\mu A, V_{CE}=5V$ $I_C=100mA, V_{CE}=5V$ $I_C=500mA, V_{CE}=5V$
Collector Capacitance	C_c		12	pF	$V_{CB}=10V, f=1MHz$
Emitter Capacitance	C_e		90	pF	$V_{EB}=0.5V, f=1MHz$
Transition Frequency	f_T	100		MHz	$I_C=50mA, V_{CE}=10V$ $f=35MHz$
Turn-On Time	T_{on}		250	ns	$V_{CC}=20V, I_C=100mA$ $I_{B1}=-I_{B2}=-5mA$
Turn-Off Time	T_{off}		1000	ns	

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