

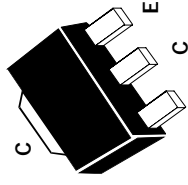
# SOT89 NPN SILICON PLANAR MEDIUM POWER TRANSISTORS

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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	$V_{CB0}$	70	90	V
Collector-Emitter Voltage	$V_{CE0}$	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	$T_j; T_{sig}$	-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	$V_{(BR)CBO}$	70		V	$I_C=100\mu A$
		90		V	$I_C=100\mu A$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	60		V	$I_C=10mA$
		80		V	$I_C=10mA$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5		V	$I_E=10\mu A$
Collector Cut-Off Current	$I_{CBO}$		100	nA	$V_{CB}=60V$
			50	$\mu A$	$V_{CB}=60V, T_{amb}=125^{\circ}C$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	0.25		V	$I_C=150mA, I_B=15mA$
		0.5		V	$I_C=500mA, I_B=50mA$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	1.0		V	$I_C=150mA, I_B=15mA$
		1.2		V	$I_C=500mA, I_B=50mA$
Static Forward Current Transfer Ratio	$h_{FE}$	10			$I_C=100\mu A, V_{CE}=5V$
		40			$I_C=100mA, V_{CE}=5V$
		30			$I_C=500mA, V_{CE}=5V$
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	$V_{CC}=20V, I_C=100mA$
Turn-Off Time	$T_{off}$		1000	ns	$I_{B1}=-I_{B2}=-5mA$

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