

# SOT223 NPN SILICON PLANAR MEDIUM POWER TRANSISTOR

## BCP54

ISSUE 3 – AUGUST 1995

### FEATURES

- \* Suitable for AF drivers and output stages
- \* High collector current and Low  $V_{CE(sat)}$

COMPLEMENTARY TYPE – BCP51

PARTMARKING DETAILS – BCP54  
BCP54 – 10  
BCP54 – 16



### ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	$V_{CBO}$	45	V
Collector-Emitter Voltage	$V_{CEO}$	45	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Peak Pulse Current	$I_{CM}$	1.5	A
Continuous Collector Current	$I_C$	1	A
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.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	45			V	$I_C=100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	45			V	$I_C=10\text{mA}$ *
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	$I_E=10\mu\text{A}$
Collector Cut-Off Current	$I_{CBO}$			100 20	nA $\mu\text{A}$	$V_{CB}=30\text{V}$ $V_{CB}=30\text{V}, T_{amb}=150^\circ\text{C}$
Emitter Cut-Off Current	$I_{EBO}$			10	$\mu\text{A}$	$V_{EB}=5\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.5	V	$I_C=500\text{mA}, I_B=50\text{mA}$ *
Base-Emitter Turn-On Voltage	$V_{BE(on)}$			1.0	V	$I_C=500\text{mA}, V_{CE}=2\text{V}$ *
Static Forward Current Transfer Ratio	$h_{FE}$	40 25 63 100	100 160	250 160 250		$I_C=150\text{mA}, V_{CE}=2\text{V}$ * $I_C=500\text{mA}, V_{CE}=2\text{V}$ * $I_C=150\text{mA}, V_{CE}=2\text{V}$ * $I_C=150\text{mA}, V_{CE}=2\text{V}$ *
Transition Frequency	$f_T$		100		MHZ	$I_C=50\text{mA}, V_{CE}=10\text{V}, f=100\text{MHZ}$

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