



SMALL SIGNAL NPN TRANSISTORS

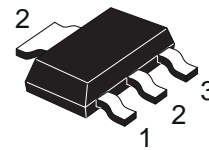
PRELIMINARY DATA

Type	Marking
BCP55-16	BCP5516
BCP56-16	BCP5616

- SILICON EPITAXIAL PLANAR PNP MEDIUM VOLTAGE TRANSISTORS
- SOT-223 PLASTIC PACKAGE FOR SURFACE MOUNTING CIRCUITS
- TAPE AND REEL PACKING
- THE PNP COMPLEMENTARY TYPES ARE BCP52-16 AND BCP53-16 RESPECTIVELY

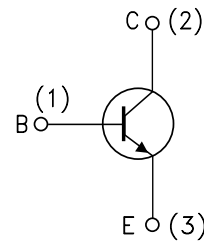
APPLICATIONS

- MEDIUM VOLTAGE LOAD SWITCH TRANSISTORS
- OUTPUT STAGE FOR AUDIO AMPLIFIERS CIRCUITS
- AUTOMOTIVE POST-VOLTAGE REGULATION



SOT-223

INTERNAL SCHEMATIC DIAGRAM



SC06960

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		BCP55-16	BCP56-16	
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	60	100	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	60	80	V
V_{CER}	Collector-Emitter Voltage ($R_{BE} = 1K\Omega$)	60	100	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	5		V
I_C	Collector Current	1		A
I_{CM}	Collector Peak Current ($t_p < 5$ ms)	1.5		A
I_B	Base Current	0.1		A
I_{BM}	Base Peak Current ($t_p <$ ms)	0.2		A
P_{tot}	Total Dissipation at $T_C = 25$ °C	1.4		W
T_{stg}	Storage Temperature	-65 to 150		°C
T_j	Max. Operating Junction Temperature	150		°C

BCP55-16 / BCP56-16

THERMAL DATA

$R_{thj-amb}$	Thermal Resistance Junction-Ambient	Max	89.3	$^{\circ}\text{C}/\text{W}$
---------------	-------------------------------------	-----	------	-----------------------------

• Device mounted on a PCB area of 1 cm^2

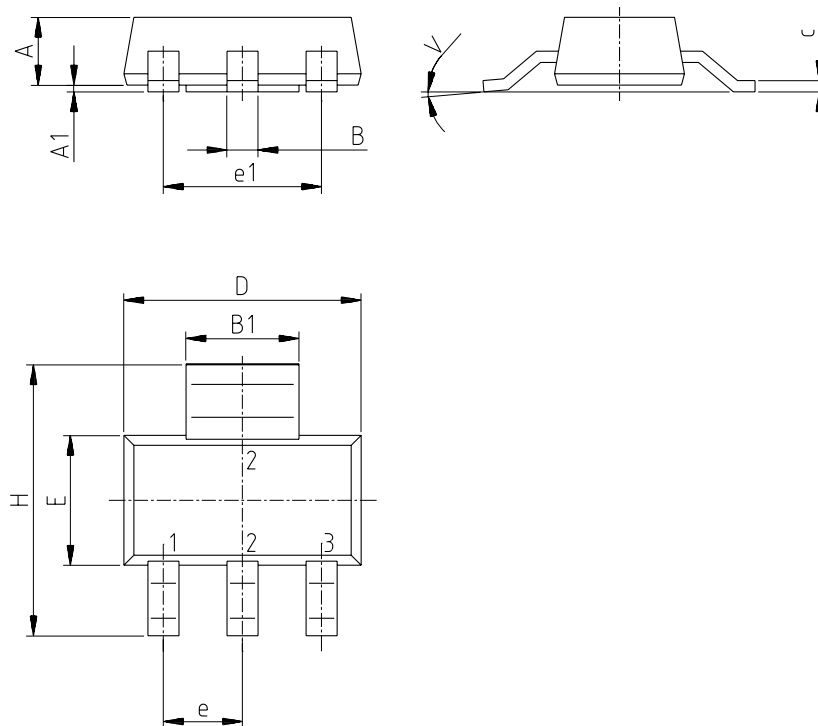
ELECTRICAL CHARACTERISTICS ($T_{case} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CB} = 30\text{ V}$ $V_{CB} = 30\text{ V}$ $T_C = 125\text{ }^{\circ}\text{C}$			100 10	nA μA
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_E = 0$)	$I_C = 100\text{ }\mu\text{A}$ for BCP55-16 for BCP56-16	60 100			V V
$V_{(BR)CEO}^*$	Collector-Emitter Breakdown Voltage ($I_B = 0$)	$I_C = 20\text{ mA}$ for BCP55-16 for BCP56-16	60 80			V V
$V_{(BR)CER}$	Collector-Emitter Breakdown Voltage ($R_{BE} = 1\text{ K}\Omega$)	$I_C = 100\text{ }\mu\text{A}$ for BCP55-16 for BCP56-16	60 100			V V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_C = 0$)	$I_E = 10\text{ }\mu\text{A}$	5			V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 500\text{ mA}$ $I_B = 50\text{ mA}$			0.5	V
$V_{BE(on)}^*$	Base-Emitter On Voltage	$I_C = 500\text{ mA}$ $V_{CE} = 2\text{ V}$			1	V
h_{FE}^*	DC Current Gain	$I_C = 5\text{ mA}$ $V_{CE} = 2\text{ V}$ $I_C = 150\text{ mA}$ $V_{CE} = 2\text{ V}$ $I_C = 500\text{ mA}$ $V_{CE} = 2\text{ V}$	40 100 25		250	
f_T	Transition Frequency	$I_C = 10\text{ mA}$ $V_{CE} = 5\text{ V}$ $f = 20\text{ MHz}$		120		MHz

* Pulsed: Pulse duration = $300\text{ }\mu\text{s}$, duty cycle $\leq 1.5\%$

SOT-223 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			1.80			0.071
B	0.60	0.70	0.80	0.024	0.027	0.031
B1	2.90	3.00	3.10	0.114	0.118	0.122
c	0.24	0.26	0.32	0.009	0.010	0.013
D	6.30	6.50	6.70	0.248	0.256	0.264
e		2.30			0.090	
e1		4.60			0.181	
E	3.30	3.50	3.70	0.130	0.138	0.146
H	6.70	7.00	7.30	0.264	0.276	0.287
V			10°			10°
A1		0.02				



P008B

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specification mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a trademark of STMicroelectronics

© 2002 STMicroelectronics – Printed in Italy – All Rights Reserved

STMicroelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States.

<http://www.st.com>