

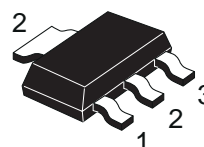
## LOW POWER NPN TRANSISTOR

Ordering Code	Marking
BCP55-16	BCP5516

- SILICON EPITAXIAL PLANAR NPN MEDIUM VOLTAGE TRANSISTOR
- SOT-223 PLASTIC PACKAGE FOR SURFACE MOUNTING CIRCUITS
- TAPE AND REEL PACKING
- THE PNP COMPLEMENTARY TYPE IS BCP52-16

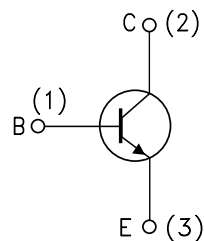
### APPLICATIONS

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



**SOT-223**

### INTERNAL SCHEMATIC DIAGRAM



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage ( $I_E = 0$ )	60	V
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )	60	V
$V_{CER}$	Collector-Emitter Voltage ( $R_{BE} = 1K\Omega$ )	60	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 ( $t_p < 5$ ms)	0.2	A
$P_{tot}$	Total Dissipation at $T_{amb} = 25$ °C	1.4	W
$T_{stg}$	Storage Temperature	-65 to 150	°C
$T_j$	Max. Operating Junction Temperature	150	°C

## THERMAL DATA

$R_{thj-amb}$ •	Thermal Resistance Junction-Ambient	Max	89.3	°C/W
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• Device mounted on a PCB area of 1 cm<sup>2</sup>

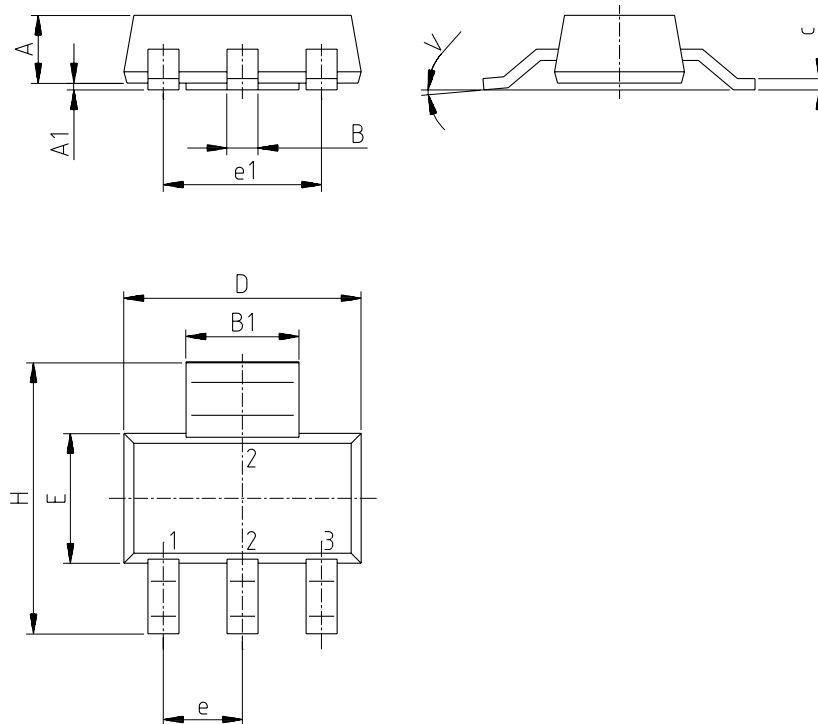
ELECTRICAL CHARACTERISTICS ( $T_{case} = 25\text{ °C}$  unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	Collector Cut-off Current ( $I_E = 0$ )	$V_{CB} = 30\text{ V}$ $V_{CB} = 30\text{ V}$ $T_j = 125\text{ °C}$			100 10	nA μA
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ( $I_E = 0$ )	$I_C = 100\text{ μA}$	60			V
$V_{(BR)CEO}^*$	Collector-Emitter Breakdown Voltage ( $I_B = 0$ )	$I_C = 20\text{ mA}$	60			V
$V_{(BR)CER}$	Collector-Emitter Breakdown Voltage ( $R_{BE} = 1\text{ K}\Omega$ )	$I_C = 100\text{ μA}$	60			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ( $I_C = 0$ )	$I_E = 10\text{ μA}$	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 μs, duty cycle ≤ 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				



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