

SMALL SIGNAL NPN TRANSISTOR

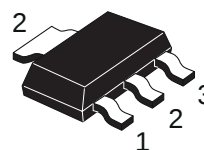
PRELIMINARY DATA

Ordering Code	Marking
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 TYPE IS BCP53-16

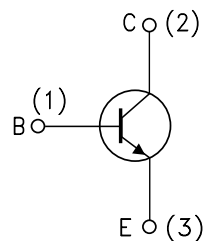
APPLICATIONS

- 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
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	100	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	80	V
V_{CER}	Collector-Emitter Voltage ($R_{BE} = 1K\Omega$)	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 ($t_p < 5$ ms)	0.2	A
P_{tot}	Total Dissipation at $T_{amb} = 25$ °C	1.6	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	78	$^{\circ}\text{C}/\text{W}$
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• Device mounted on a PCB area of 1 cm^2

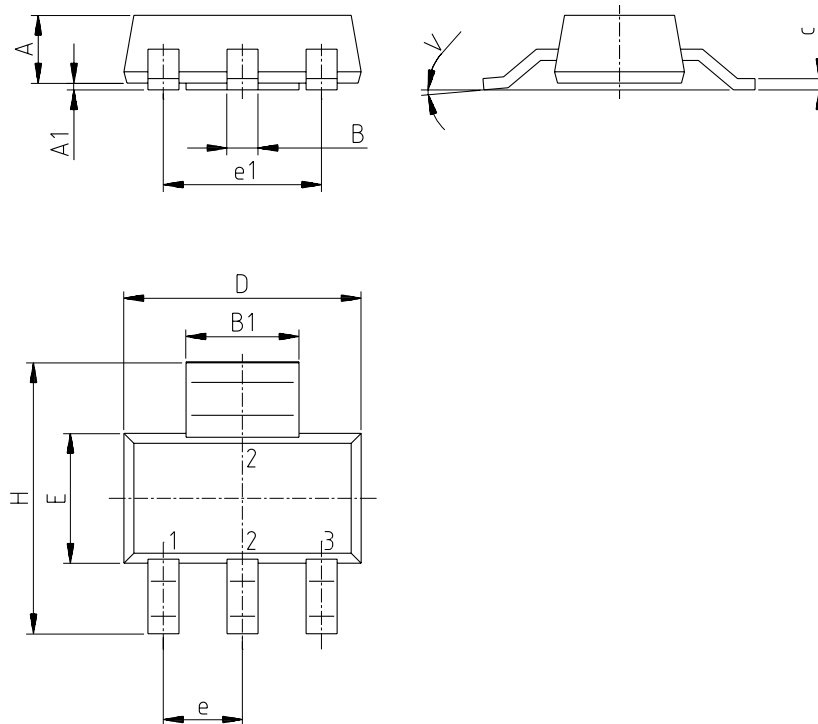
ELECTRICAL CHARACTERISTICS ($T_{\text{case}} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CB} = 30\text{ V}$ $V_{CB} = 30\text{ V}$ $T_j = 125\text{ }^{\circ}\text{C}$			100 10	nA μA
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_E = 0$)	$I_C = 100\text{ }\mu\text{A}$	100			V
$V_{(BR)CEO}^*$	Collector-Emitter Breakdown Voltage ($I_B = 0$)	$I_C = 20\text{ mA}$	80			V
$V_{(BR)CER}$	Collector-Emitter Breakdown Voltage ($R_{BE} = 1\text{ K}\Omega$)	$I_C = 100\text{ }\mu\text{A}$	100			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

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