



## BCP68

## NPN SILICON TRANSISTOR

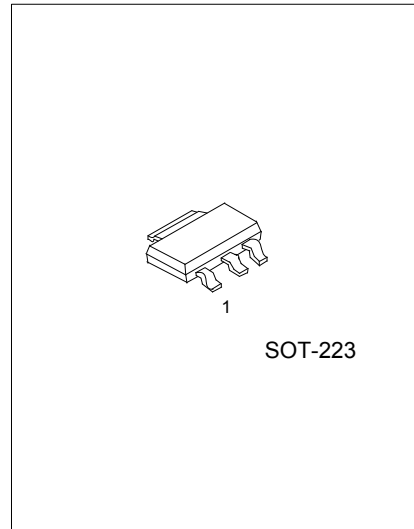
### NPN MEDIUM POWER TRANSISTOR

#### FEATURES

- \* High current (max. 1 A)
- \* Low voltage (max. 20 V).
- \* Complementary to UTC BCP69

#### APPLICATIONS

- \* General purpose switching and amplification under high current conditions.



Lead-free: BCP68L  
Halogen-free: BCP68G

#### ORDERING INFORMATION

Ordering Number			Package	Pin Assignment			Packing
Normal	Lead Free Plating	Halogen Free		1	2	3	
BCP68-xx-AA3-R	BCP68L-xx-AA3-R	BCP68G-xx-AA3-R	SOT-223	B	C	E	Tape Reel

<p>BCP68L-xx-AA3-R</p> <p>(1)Packing Type (2)Package Type (3)Rank (4)Lead Plating</p>	<p>(1) R: Tape Reel (2) AA3: SOT-223 (3) xx: refer to Classification of h<sub>FE</sub> (4) L: Lead Free Plating, Blank: Pb/Sn</p>
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### ■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT	
Collector-Base Voltage (Open Emitter)	V <sub>CBO</sub>	32	V	
Collector-Emitter Voltage (Open Base)	V <sub>CEO</sub>	20	V	
Emitter-Base Voltage (Open Collector)	V <sub>EBO</sub>	5	V	
Collector Current	DC	I <sub>C</sub>	1	A
	Peak	I <sub>CM</sub>	2	A
Peak Base Current	I <sub>BM</sub>	200	mA	
Total Power Dissipation (Ta ≤ 25°C)	P <sub>D</sub>	1.35	W	
Junction Temperature	T <sub>J</sub>	150	°C	
Operating Temperature	T <sub>OPR</sub>	-45 ~ +150	°C	
Storage Temperature	T <sub>STG</sub>	-65 ~ +150	°C	

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

### ■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Thermal Resistance From Junction To Ambient	θ <sub>JA</sub>	91	°C/W

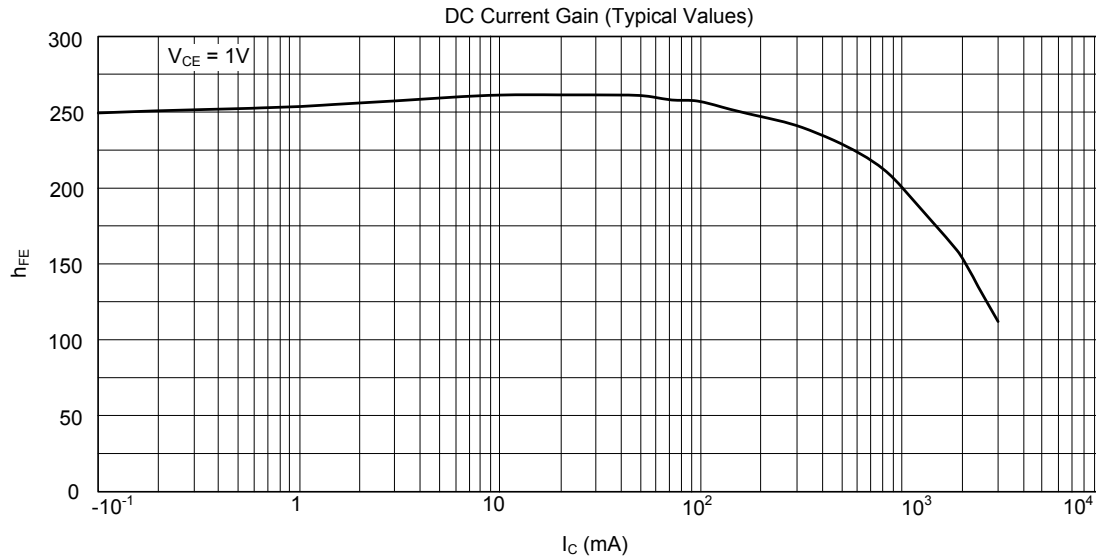
### ■ ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25°C, unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Emitter Saturation Voltage	V <sub>CE(SAT)</sub>	I <sub>C</sub> = 1A, I <sub>B</sub> = 100mA			500	mV
Base-Emitter Voltage	V <sub>BE</sub>	I <sub>C</sub> = 5mA, V <sub>CE</sub> = 10V		620		mV
		I <sub>C</sub> = 1A, V <sub>CE</sub> = 1V			1	V
Collector Cut-off Current	I <sub>CB0</sub>	I <sub>E</sub> = 0, V <sub>CB</sub> = 25V			100	nA
		I <sub>E</sub> = 0, V <sub>CB</sub> = 25V, T <sub>J</sub> = 150°C			10	μA
Emitter Cut-off Current	I <sub>EBO</sub>	I <sub>C</sub> = 0, V <sub>EB</sub> = 5V			100	nA
DC Current Gain	h <sub>FE</sub>	I <sub>C</sub> = 5mA, V <sub>CE</sub> = 10V	50			
		I <sub>C</sub> = 500mA, V <sub>CE</sub> = 1V	85		375	
		I <sub>C</sub> = 1A, V <sub>CE</sub> = 1V	60			
Collector Capacitance	C <sub>C</sub>	I <sub>E</sub> = i <sub>e</sub> = 0, V <sub>CB</sub> = 5V, f = 1MHz		48		pF
Transition Frequency	f <sub>T</sub>	I <sub>C</sub> = -10mA, V <sub>CE</sub> = -5V, f = 100MHz	40			MHz
DC Current Gain Ratio of the Complementary Pairs	$\frac{h_{FE1}}{h_{FE2}}$	I <sub>C</sub>   = 0.5A,  V <sub>CE</sub>   = 1V			1.6	

### ■ CLASSIFICATION OF h<sub>FE</sub>

RANK	16	25
RANGE	100~250	160~375

## ■ TYPICAL CHARACTERISTIC



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