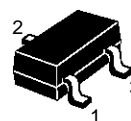


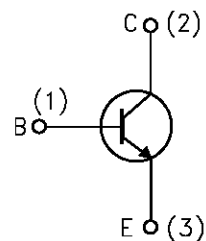
SMALL SIGNAL NPN TRANSISTORS

Type	Marking
BCW66F	EF
BCW66G	EG
BCW66H	EH

- SILICON EPITAXIAL PLANAR NPN TRANSISTORS
- MINIATURE PLASTIC PACKAGE FOR APPLICATION IN SURFACE MOUNTING CIRCUITS
- MEDIUM CURRENT AF AMPLIFICATION AND SWITCHING
- PNP COMPLEMENT IS BCW68


SOT-23

INTERNAL SCHEMATIC DIAGRAM



SC08960

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CES}	Collector-Emitter Voltage ($V_{BE} = 0$)	75	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	45	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	5	V
I_C	Collector Current	0.8	A
I_{CM}	Collector Peak Current	1	A
I_B	Base Current	0.1	A
P_{tot}	Total Dissipation at $T_C = 25\text{ }^\circ\text{C}$	360	mW
T_{stg}	Storage Temperature	-65 to 150	$^\circ\text{C}$
T_j	Max. Operating Junction Temperature	150	$^\circ\text{C}$

THERMAL DATA

$R_{thj-amb}$	Thermal Resistance Junction-Ambient	Max	375	$^{\circ}\text{C}/\text{W}$
R_{thj-SR}	Thermal Resistance Junction-Substrate	Max	278	$^{\circ}\text{C}/\text{W}$

• Mounted on a ceramic substrate area = 0.7 mm x 2.5 cm²

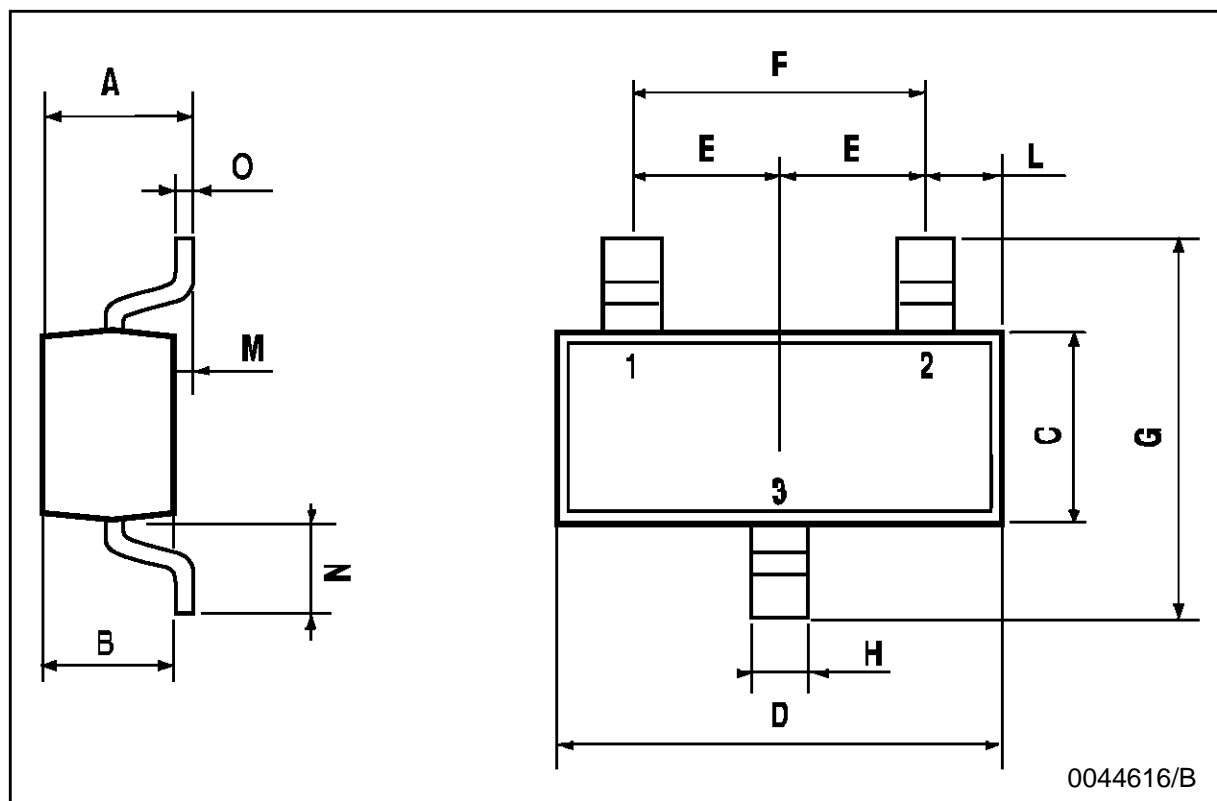
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cut-off Current ($V_{BE} = 0$)	$V_{CE} = \text{Rated } V_{CES}$ $V_{CE} = \text{Rated } V_{CES}$ $T_{amb} = 150^{\circ}\text{C}$			20 20	nA μA
I_{EBO}	Collector Cut-off Current ($I_E = 0$)	$V_{EB} = 4\text{ V}$			20	nA
$V_{(BR)CEO}^*$	Collector-Emitter Breakdown Voltage ($I_B = 0$)	$I_C = 10\text{ mA}$	45			V V
$V_{(BR)CES}^*$	Collector-Emitter Breakdown Voltage ($V_{EB} = 0$)	$I_C = 10\ \mu\text{A}$	75			V V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_C = 0$)	$I_C = 10\ \mu\text{A}$	5			V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 100\text{ mA}$ $I_B = 10\text{ mA}$ $I_C = 500\text{ mA}$ $I_B = 50\text{ mA}$			0.3 0.7	V V
$V_{BE(sat)}^*$	Collector-Base Saturation Voltage	$I_C = 100\text{ mA}$ $I_B = 10\text{ mA}$ $I_C = 500\text{ mA}$ $I_B = 50\text{ mA}$			1.25 2	V V
h_{FE}^*	DC Current Gain	$I_C = 0.1\text{ mA}$ $V_{CE} = 10\text{ V}$ for group F $I_C = 10\text{ mA}$ $V_{CE} = 1\text{ V}$ for group F $I_C = 100\text{ mA}$ $V_{CE} = 1\text{ V}$ for group F $I_C = 500\text{ mA}$ $V_{CE} = 2\text{ V}$ for group G for group H	35 50 80	75 110 180	250 400 630	
f_T	Transition Frequency	$I_C = 20\text{ mA}$ $V_{CE} = 10\text{ V}$ $f = 100\text{ MHz}$	100			MHz
C_{CB}	Collector Base Capacitance	$I_E = 0$ $V_{CB} = 10\text{ V}$ $f = 1\text{ MHz}$			12	pF
C_{EB}	Emitter Base Capacitance	$I_C = 0$ $V_{CE} = 0.5\text{ V}$ $f = 1\text{ MHz}$			80	pF
NF	Noise Figure	$V_{CE} = 5\text{ V}$ $I_C = 0.2\text{ mA}$ $f = 1\text{ KHz}$ $\Delta f = 200\text{ Hz}$ $R_G = 2\text{ K}\Omega$		2	10	dB
t_{on}	Switching On Time	$I_C = 150\text{ mA}$ $I_{B1} = -I_{B2} = 15\text{ mA}$ $R_L = 150\ \Omega$			100	ns

* Pulsed: Pulse duration = 300 μs , duty cycle $\leq 2\%$

SOT-23 MECHANICAL DATA

DIM.	mm			mils		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	0.85		1.1	33.4		43.3
B	0.65		0.95	25.6		37.4
C	1.20		1.4	47.2		55.1
D	2.80		3	110.2		118
E	0.95		1.05	37.4		41.3
F	1.9		2.05	74.8		80.7
G	2.1		2.5	82.6		98.4
H	0.38		0.48	14.9		18.8
L	0.3		0.6	11.8		23.6
M	0		0.1	0		3.9
N	0.3		0.65	11.8		25.6
O	0.09		0.17	3.5		6.7



Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics 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 SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1997 SGS-THOMSON Microelectronics - Printed in Italy - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands - Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A