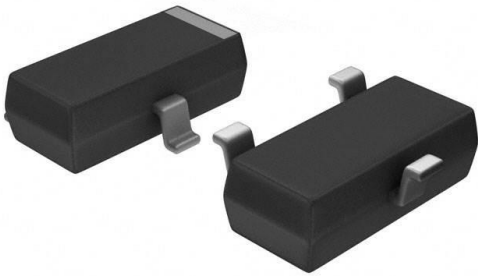


BCW66G_D87Z Datasheet

www.digi-electronics.com



<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	BCW66G_D87Z-DG
Manufacturer	onsemi
Manufacturer Product Number	BCW66G_D87Z
Description	TRANS NPN 45V 1A SOT23-3
Detailed Description	Bipolar (BJT) Transistor NPN 45 V 1 A 100MHz 350 mW Surface Mount SOT-23-3



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

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Purchase and inquiry

Manufacturer Product Number:

BCW66G_D87Z

Series:

-

Transistor Type:

NPN

Voltage - Collector Emitter Breakdown (Max):

45 V

Current - Collector Cutoff (Max):

20nA

Power - Max:

350 mW

Operating Temperature:

-55°C ~ 150°C (TJ)

Package / Case:

TO-236-3, SC-59, SOT-23-3

Base Product Number:

BCW66

Manufacturer:

onsemi

Product Status:

Obsolete

Current - Collector (Ic) (Max):

1 A

Vce Saturation (Max) @ Ib, Ic:

700mV @ 50mA, 500mA

DC Current Gain (hFE) (Min) @ Ic, Vce:

160 @ 100mA, 1V

Frequency - Transition:

100MHz

Mounting Type:

Surface Mount

Supplier Device Package:

SOT-23-3

Environmental & Export classification

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

REACH Status:

REACH Unaffected

HTSUS:

8541.21.0075



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Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

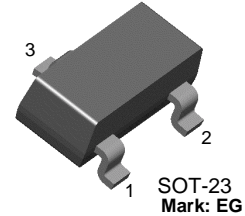
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FAIRCHILD
SEMICONDUCTOR®

BCW66G

NPN General Purpose Amplifier

- This device is designed for general purpose amplifier applications at collector currents to 500mA.
- Sourced from process 13.



1. Base 2. Emitter 3. Collector

Absolute Maximum Ratings * $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	45	V
V_{CBO}	Collector-Base Voltage	75	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current - Continuous	1	A
T_J, T_{STG}	Operating and Storage Junction Temperature Range	- 55 ~ +150	$^\circ\text{C}$

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

NOTES:

- These ratings are based on a maximum junction temperature of 150degrees C.
- These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

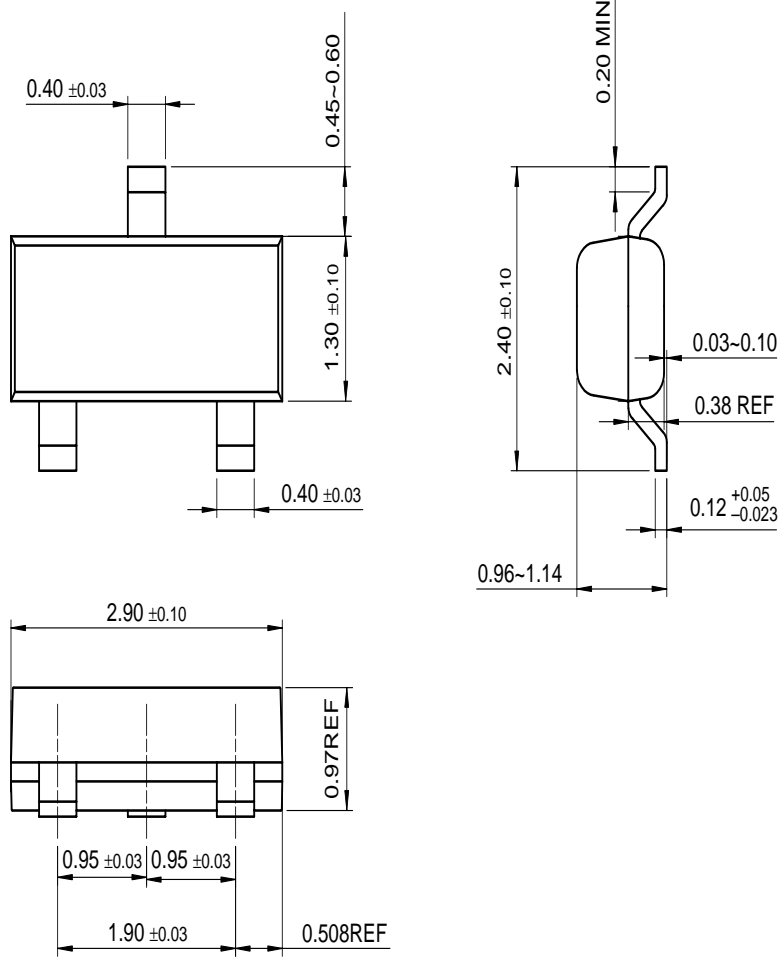
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = 10\mu\text{A}$	75			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}$	45			V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = 10\mu\text{A}$	5			V
I_{CES}	Collector Cut-off Current	$V_{CB} = 45\text{V}, I_E = 0$			20	nA
		$V_{CB} = 45\text{V}, I_E = 0$ $T_A = 150^\circ\text{C}$			20	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 4\text{V}$			20	nA
h_{FE}	DC Current Gain	$V_{CE} = 10\text{V}, I_C = 100\mu\text{A}$	50			
		$V_{CE} = 1\text{V}, I_C = 10\text{mA}$	110			
		$V_{CE} = 1\text{V}, I_C = 100\text{mA}$	160		400	
		$V_{CE} = 2\text{V}, I_C = 500\text{mA}$	60			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 100\text{mA}, I_B = 10\text{mA}$			0.3	V
		$I_C = 500\text{mA}, I_B = 50\text{mA}$			0.7	
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 500\text{mA}, I_B = 50\text{mA}$			2	V
C_{obo}	Output Capacitance	$V_{CB} = 10\text{V}, f = 1\text{MHz}$			12	pF
C_{ibo}	Input Capacitance	$V_{EB} = 0.5\text{V}, f = 1\text{MHz}$			80	pF
f_T	Current gain Bandwidth Product	$V_{CE} = 10\text{V}, I_C = 20\text{mA},$ $f = 100\text{MHz}$	100			MHz
NF	Noise Figure	$V_{CE} = 5\text{V}, I_C = 0.2\text{mA}, R_S = 1\text{k}\Omega,$ $f = 1\text{KHz}, BW = 200\text{Hz}$			10	dB
t_{on}	Turn-On Time	$I_{B1} = I_{B2} = 15\text{mA}$ $I_C = 150\text{mA}, R_L = 150\Omega$			100	ns
t_{off}	Turn-Off Time				400	

Thermal Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Units
P_D	Total Device Dissipation Derate above 25°C			350 2.8	mW mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient			357	°C/W

Package Dimensions

SOT-23



Dimensions in Millimeters

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