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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.

FAIRCHILD
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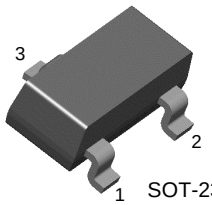
BCW60A/B/C/D

General Purpose Transistor



SOT-23

1. Base 2. Emitter 3. Collector

NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings T_a=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	32	V
V_{CEO}	Collector-Emitter Voltage	32	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	100	mA
P_C	Collector Power Dissipation	350	mW
T_{STG}	Storage Temperature	150	°C

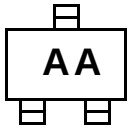
Electrical Characteristics T_a=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C=2mA, I_B=0	32		V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E=1μA, I_C=0	5		V
I_{CES}	Collector Cut-off Current	V_{CE}=32V, V_{BE}=0		20	nA
I_{EBO}	Emitter Cut-off Current	V_{EB}=4V, I_C=0		20	nA
h_{FE}	DC Current Gain				
	: BCW60B	V_{CE}=5V, I_C=10μA	20		
	: BCW60C		40		
	: BCW60D		100		
	: BCW60A	V_{CE}=5V, I_C=2mA	120	220	
	: BCW60B		180	310	
	: BCW60C		250	460	
	: BCW60D		380	630	
	: BCW60A	V_{CE}=1V, I_C=50mA	60		
	: BCW60B		70		
	: BCW60C		90		
	: BCW60D		100		
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C=50mA, I_B=1.25mA		0.55	V
		I_C=10mA, I_B=0.25mA		0.35	V
V_{BE}(sat)	Base-Emitter Saturation Voltage	I_C=50mA, I_B=1.25mA	0.7	1.05	V
		I_C=10mA, I_B=0.25mA	0.6	0.85	V
V_{BE}(on)	Base-Emitter On Voltage	V_{CE}=5V, I_C=2mA	0.55	0.75	V
C_{ob}	Output Capacitance	V_{CB}=10V, I_E=0, f=1MHz		4.5	pF
f_T	Current Gain Bandwidth Product	I_C=10mA, V_{CE}=5V, f=100MHz	125		MHz
NF	Noise Figure	I_C=0.2mA, V_{CE}=5V R_G=2KΩ, f=1KHz		6	dB
t_{ON}	Turn On Time	I_C=10mA, I_{B1}=1mA		150	ns
t_{OFF}	Turn Off Time	V_{BB}=3.6V, I_{B2}=1mA R1=R2=5KΩ,R_L=990Ω		800	ns

Marking Code

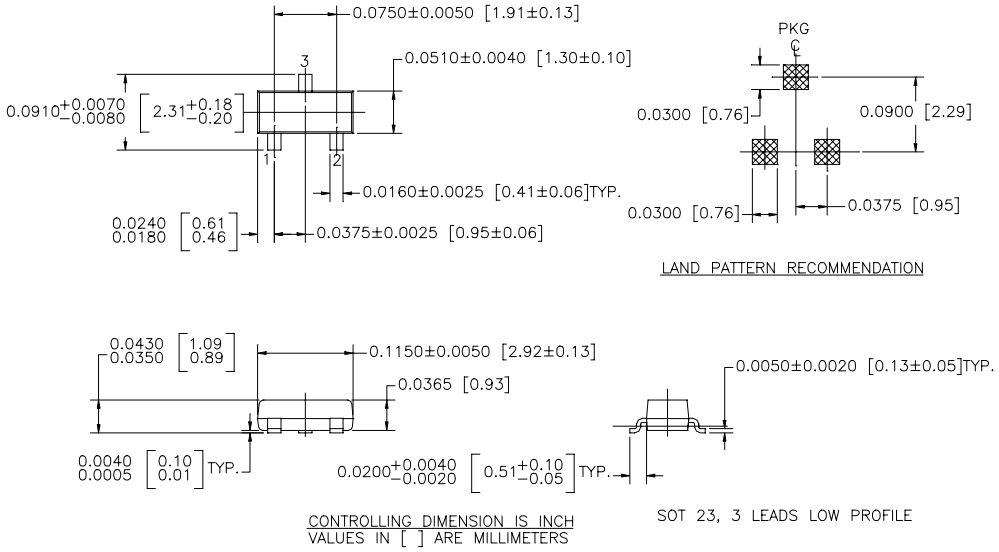
Type	BCW60A	BCW60B	BCW60C	BCW60D
Mark.	AA	AB	AC	AD

Marking



Package Dimensions

SOT-23



NOTE : UNLESS OTHERWISE SPECIFIED

1. STANDARD LEAD FINISH 150 MICROINCHES / 3.81 MICROMETERS MINIMUM TIN / LEAD (SOLDER) ON ALLOY 42
2. REFERENCE JEDEC REGISTRATION TO−236, VARIATION AB, ISSUE G, DATED JUL 1993

Dimensions in Millimeters

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