SOT-23 Formed SMD Package

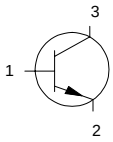
BCW65A, BCW65B
BCW65C

GENERAL PURPOSE TRANSISTOR

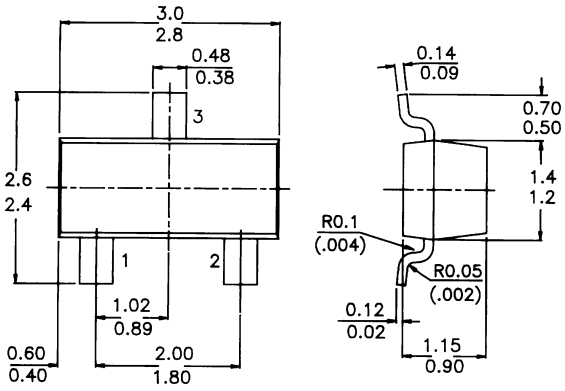
N–P–N transistor

Marking
BCW65A = EA
BCW65B = EB
BCW65C = EC

Pin configuration
1 = BASE
2 = EMITTER
3 = COLLECTOR



PACKAGE OUTLINE DETAILS
ALL DIMENSIONS IN mm



ABSOLUTE MAXIMUM RATINGS

			BCW65A	65B	65C	
Collector–base voltage (open emitter)	$-V_{CBO}$	*max.*	*60*	*60*	*60*	*V*
Collector–emitter voltage (open base)	$-V_{CEO}$	*max.*	*32*	*32*	*32*	*V*
Emitter–base voltage (open collector)	$-V_{EBO}$	*max.*	*5*	*5*	*5*	*V*
Collector current (d.c.)	$-I_C$	*max.*	*800*	*800*	*800*	*mA*
Total power dissipation at T_{amb} = 25°C	P_{tot}	*max*	*225*	*225*	*225*	*mW*
D.C. current gain						
$-I_C$ = 100 mA; $-V_{CE}$ = 10 V	h_{FE}	*min.*	*35*	*50*	*80*	
I_C = 10 mA; V_{CE} = 1 V		*min.*	*75*	*110*	*180*	
		max.	*220*			
I_C = 100 mA; V_{CE} = 1 V		*min.*	*100*	*160*	*250*	
		max.	*250*	*400*	*630*	
I_C = 500 mA; V_{CE} = 2 V		*min.*	*35*	*60*	*100*	

RATINGS *(at T_A = 25°C unless otherwise specified)*

Limiting values						
Collector–base voltage (open emitter)	$-V_{CBO}$	*max.*	*60*	*60*	*60*	*V*
Collector–emitter voltage (open base)	$-V_{CEO}$	*max.*	*32*	*32*	*32*	*V*
Emitter–base voltage (open collector)	$-V_{EBO}$	*max.*	*5*	*5*	*5*	*V*
Collector current (d.c.)	$-I_C$	*max.*	*800*	*800*	*800*	*mA*
Total power dissipation at T_{amb} = 25°C	P_{tot}	*max*	*225*	*225*	*225*	*mW*
Storage temperature	T_{stg}		*–55 to +150*			*° C*

THERMAL CHARACTERISTICS

$T_j = P\ (R_{th\ j-t} + R_{th\ s-a}) + T_{amb}$

Thermal resistance						
from junction to ambient	$R_{th\ j-a}$	*556*	*556*	*556*		°C/mW

CHARACTERISTICS *(at T_A = 25°C unless otherwise specified)*

Collector–emitter breakdown voltage						
$-I_C$ = 10 mA; I_B = 0	$-V_{(BR)CEO}$	*min.*	*32*	*32*	*32*	*V*
Collector–base breakdown voltage						
$-I_C$ = 10 mA; V_{EB} = 0	$-V_{(BR)CES}$	*min.*	*60*	*60*	*60*	*V*
Emitter–base breakdown voltage						
$-I_E$ = 10 mA; I_C = 0	$-V_{(BR)EBO}$	*min.*	*5*	*5*	*5*	*V*
Collector cut–off current						
$-V_{CE}$ = 32 V; I_E = 0	$-I_{CES}$	*max.*	*20*	*20*	*20*	*nA*
Emitter cut–off current						
V_{EB} = 4 V; I_C =0	I_{EBO}	*max.*	*20*	*20*	*20*	*nA*
Output capacitance at f = 1 MHz						
I_E = 0; $-V_{CB}$ = 10 V	C_c	*max.*	*12*	*12*	*12*	*pF*
Input capacitance at f = 100 kHz						
I_C = 0; $-V_{EB}$ = 0.5 V	C_e	*max.*	*80*	*80*	*80*	*pF*
Saturation voltages						
$-I_C$ = 500 mA; $-I_B$ = 50 mA	$-V_{CEsat}$	*max.*	*0.7*	*0.7*	*0.7*	*V*
$-I_C$ = 100 mA; $-I_B$ = 10 mA	$-V_{CEsat}$	*typ.*	*0.3*	*0.3*	*0.3*	*V*
$-I_C$ = 500 mA; $-I_B$ = 50 mA	$-V_{BEsat}$	*max.*	*2*	*2*	*2*	*V*
Noise figure at R_S = 1 kW						
$-I_C$ = 0.2 mA; $-V_{CE}$ = 5 V						
f = 1 KHz, BW = 200 Hz	*NF*	*max.*	*10*	*10*	*10*	*dB*
Current Gain-Band width Product						
I_C = 20 mA, V_{CE} = 10V, f = 100 MHz	f_T	*min*	*100*	*100*	*100*	*MHz*

Notes

Disclaimer

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