SOT-23 Formed SMD Package

BCW31 BCW32 BCW33

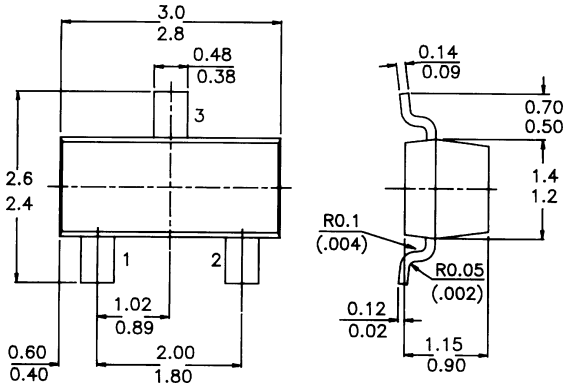
SILICON PLANAR EPITAXIAL TRANSISTORS

N–P–N transistors

Marking

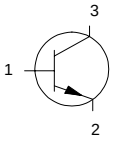
BCW31 = Dl
BCW32 = D2
BCW33 = D3

PACKAGE OUTLINE DETAILS
ALL DIMENSIONS IN mm



Pin configuration

1 = BASE
2 = EMITTER
3 = COLLECTOR



ABSOLUTE MAXIMUM RATINGS

			BCW31	BCW32	BCW33	
D.C. current gain at T_j = 25 °C		>	110	200	420	
I_C = 2 mA; V_{CE} = 5 V	h_{FE}	<	220	450	800	
Collector–base voltage (open emitter)	V_{CB0}	max.		32		V
Collector–emitter voltage (open base)	V_{CE0}	max.		32		V
Collector current (peak value)	I_{CM}	max.		200		mA
Total power dissipation up to						
T_{amb} = 25 °C	P_{tot}	max.		250		mW
Junction temperature	T_j	max.		150		° C
Transition frequency at f = 35 MHz						
I_C = 2 mA; V_{CE} = 5 V	f_T	typ.		300		MHz
Noise figure at R_S = 2 kW						
I_C = 200 mA; V_{CE} = 5 V;						
f = 1 kHz; B = 200 Hz	F	<		10		dB

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

Limiting values

Collector–base voltage (open emitter)	V_{CB0}	*max.*	*32*	*V*
Collector–emitter voltage (open base)				
I_C = 2 mA	V_{CE0}	*max.*	*32*	*V*
Emitter–base voltage (open collector)	V_{EB0}	*max.*	*5*	*V*
Collector current (d.c.)	I_C	*max.*	*100*	*mA*
Collector current (peak value)	I_{CM}	*max.*	*200*	*mA*
Total power dissipation up to T_{amb} = 25 °C	P_{tot}	*max.*	*250*	mW
Storage temperature	T_{stg}		*–55 to +150*	*°C*
Junction temperature	T_j	*max.*	*150*	*°C*

THERMAL RESISTANCE

*From junction to ambient**	$R_{th\ j-a}$	=	*500*	KW

CHARACTERISTICS

T_j = 25 °C unless otherwise specified

Collector cut–off current				
I_E = 0; V_{CB} = 32 V	I_{CB0}	<	*100*	*nA*
I_E = 0; V_{CB} = 32 V; T_j = 100 °C	I_{CB0}	<	*10*	mA
Base–emitter voltage				
I_C = 2 mA; V_{CE} = 5 V	V_{BE}		*550 to 700*	*mV*
Saturation voltages				
I_C = 10 mA; I_B = 0,5 mA		*typ.*	*120*	*mV*
	V_{CEsat}	<	*250*	*mV*
	V_{BEsat}	*typ.*	*750*	*mV*
I_C: 50 mA; I_B: 2,5 mA	V_{CEsat}	*typ.*	*210*	*mV*
	V_{BEsat}	*typ.*	*850*	*mV*

D.C. current gain			***BCW31***	***BCW32***	***BCW33***
I_C = 10 mA, V_{CE} = 5 V	h_{FE}	*typ.*	*90*	*150*	*270*
I_C = 2 mA; V_{CE} = 5 V	h_{FE}	>	*110*	*200*	*420*
		<	*220*	*450*	*800*

Collector capacitance at f = 1 MHz				
$I_E = I_e$ = 0; V_{CB} = 10 V	C_c	*typ.*	*2,5*	*pF*
Transition frequency at f = 35 MHz				
I_C = 10 mA; V_{CE} = 5 V	f_T	*typ.*	*300*	*MHz*
Noise figure at R_S = 2 kW				
I_C = 200mA; V_{CE} = 5 V				
f = 1 kHz; B = 200 Hz	*F*	<	*10*	*dB*

Notes

Disclaimer

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