SOT-23 Formed SMD Package

BSR19
BSR19A

SILICON N–P–N HIGH–VOLTAGE TRANSISTORS

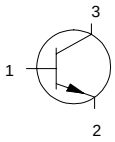
N–P–N high–voltage small–signal transistors

Marking
BSR19 = U35
BSR19A = U36

PACKAGE OUTLINE DETAILS
ALL DIMENSIONS IN mm

Pin configuration

1 = BASE
2 = EMITTER
3 = COLLECTOR



ABSOLUTE MAXIMUM RATINGS

			BSR19	***BSR19A***	
Collector–base voltage (open emitter)	V_{CB0}	*max.*	*160*	*180*	*V*
Collector–emitter voltage (open base)	V_{CE0}	*max.*	*140*	*160*	*V*
Collector current	I_C	*max.*	*600*	*600*	*mA*
Total power dissipation up to T_{amb} = 25 °C	P_{tot}	*max.*	*250*	*250*	*mW*
Junction temperature	T_j	*max.*	*150*	*150*	*° C*
Collector–emitter saturation voltage					
I_C = 50 mA; I_B = 5 mA	V_{CEsat}	*max.*	*0,25*	*0,20*	*V*
D.C. current gain					
I_C = 10 mA; V_{CE} = 5 V	h_{FE}	*min.*	*60*	*80*	

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

Limiting values				
Collector–base voltage (open emitter)	V_{CB0}	*max.*	*160 | 180*	*V*
Collector–emitter voltage (open base)	V_{CE0}	*max.*	*140 | 160*	*V*
Emitter–base voltage (open collector)	V_{EB0}	*max.*	*6*	*V*
Collector current	I_C	*max.*	*600*	*mA*
Total power dissipation up to T_{amb} = 25 °C	P_{tot}	*max.*	*250*	*mW*
Junction temperature	T_j	*max.*	*150*	*° C*
Storage temperature	*Tstg*		*–55 to +150*	*° C*

THERMAL RESISTANCE

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

CHARACTERISTICS

Tarnb = 25 °C unless otherwise specified

			BSR19	***BSR19A***	
Collector cut–off current					
I_E = 0; V_{CB} = 100 V	I_{CBO}	*max.*	*100*		*nA*
I_E = 0; V_{CB} = 120 V	I_{CBO}	*max.*		*50*	*nA*
I_E = 0; V_{CB} = 100 V; T_{amb} = 100°C	I_{CBO}	*max.*	*100*		*µA*
I_E = 0; V_{CB} = 120 V; T_{amb} = 100°C	I_{CBO}	*max.*		*50*	*µA*
Emitter cut–off current					
I_C = 0; V_{EB} = 4,0 V	I_{EBO}	*max.*	*50*	*50*	*nA*
Breakdown voltages					
I_C: 1,0 mA; I_B = 0	$V(BR)_{CEO}$	*min.*	*140*	*160*	*V*
I_C = 100 µA; I_E = 0	$V(BR)_{CBO}$	*min.*	*160*	*180*	*V*
I_C = 0; I_E = 10 µA	$V(BR)_{EBO}$	*min.*	*6,0*	*6,0*	*V*
Saturation voltages					
I_C = 10 mA; I_B = 1,0 mA	V_{CEsat}	*max.*	*0,15*	*0,15*	*V*
	V_{BEsat}	*max.*	*1,0*	*1,0*	*V*
I_C = 50mA; I_B = 5,0 mA	V_{CEsat}	*max.*	*0,25*	*0,20*	*V*
	V_{BEsat}	*max.*	*1,2*	*1,0*	*V*
D.C. current gain					
I_C = 1,0 mA; V_{CE} = 5 V	h_{FE}	*min.*	*60*	*80*	
I_C = 10 mA; V_{CE} = 5 V	h_{FE}	*min.*	*60*	*80*	
		max.	*250*	*250*	
I_C = 50 mA; V_{CE} = 5 V	h_{FE}	*min.*	*20*	*30*	
Small–signal current gain					
I_C = 1,0 mA; V_{CE} = 10 V; f = 1 kHz	h_{fe}	*min.*	*50*	*50*	
		max.	*200*	*200*	
Output capacitance at f = 1 MHz					
I_E = 0; V_{CB} = 10 V	C_o	*max.*	*6*	*6*	*pF*

			BSR19	BSR19A	
Input capacitance at f = 1 MHz					
I_C = 0; V_{EB} = 0,5 V	*Ci*	*max.*	*30*	*30*	*pF*
Transition frequency at f = 100 MHz					
I_C = 10 mA; V_{CE} = 10 V	f_T	*min.*	*100*	*100*	MHz
		max.	*300*	*300*	MHz
Noise figure at R_S = 1 kΩ					
I_C = 250 mA; V_{CE} = 5 V; f = 10Hz to 15,7 kHz	*F*	*max.*	*10*	*8*	*dB*

Disclaimer

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