NPN SILICON POWER TRANSISTORS
RADIATION RESISTANT

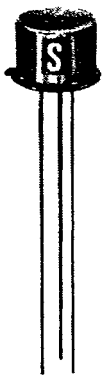
5 AMPERES

FEATURES

MEDIUM POWER
RADIATION EXPOSURE LEVEL TO $3 \times 10^{14} n/Cm^2$
TOTAL NEUTRON FLUX EQUIVALENT TO 1 MEV

APPLICATIONS

POWER AMPLIFIER
RADIATION ENVIRONMENTS
ULTRA HIGH FREQUENCY



TO-5

ABSOLUTE MAXIMUM RATINGS

		BR100A	BR101A
V_{CBO}	COLLECTOR-BASE VOLTAGE	75 V	90 V
V_{CEO}	COLLECTOR-EMITTER VOLTAGE	60 V	80 V
V_{EBO}	EMITTER-BASE VOLTAGE	5 V	5 V
I_C	CONTINUOUS COLLECTOR CURRENT	5 A	5 A
I_B	CONTINUOUS BASE CURRENT	1 A	1 A
T_J	OPERATING JUNCTION TEMPERATURE	−65°C to +200°C	
T_{stg}	STORAGE TEMPERATURE	−65°C to +200°C	
$R_{\theta JC}$	THERMAL RESISTANCE, JUNCTION TO CASE	35°C/W	
P_D	POWER DISSIPATION (25°C)	5W	

1-85-2R

RADIATION RESISTANT NPN SILICON POWER TRANSISTORS

BR100A BR101A

ELECTRICAL CHARACTERISTICS (T_C = 25°C UNLESS OTHERWISE NOTED)

CHARACTERISTICS		SYMBOL	MIN.	MAX.	UNITS
COLLECTOR-BASE BREAKDOWN VOLTAGE		V_{CBO}			
(I_{CBO} = 1.0mA)	BR100A		75		V
(I_{CBO} = 1.0mA)	BR101A		90		V
(I_{CBO} = 1.0mA, Note 2)	BR100A		75		V
(I_{CBO} = 1.0mA, Note 2)	BR101A		90		V
COLLECTOR-EMITTER SUSTAINING VOLTAGE(1)		V_{CEO}			
(I_{CEO} = 50mA)	BR100A		60		V
(I_{CEO} = 50mA)	BR101A		80		V
(I_{CEO} = 50mA, Note 2)	BR100A		80		V
(I_{CEO} = 50mA, Note 2)	BR101A		100		V
EMITER-BASE VOLTAGE		V_{EBO}			
(I_{EBO} = 1.0mA)			5.0		V
(I_{EBO} = 1.0mA, Note 2)			5.0		V
COLLECTOR CUTOFF CURRENT		I_{CBO}			
(V_{CB} = 50V)				0.1	mA
(V_{CB} = 50V, Note 2)				0.1	mA
EMITTER CUTOFF CURRENT		I_{EBO}			
(V_{EB} = 3.0V)				0.1	mA
(V_{EB} = 3.0V, Note 2)				0.1	mA
DC CURRENT GAIN (1)		h_{FE}			
(V_{CE} = 5.0V, I_C = 0.5A)	BR100A		60		
(V_{CE} = 5.0V, I_C = 2.0A)	BR100A		75		
(V_{CE} = 5.0V, I_C = 5.0A)	BR100A		25		
(V_{CE} = 5.0V, I_C = 0.5A)	BR101A		45		
(V_{CE} = 5.0V, I_C = 2.0A)	BR101A		70		
(V_{CE} = 5.0V, I_C = 5.0A)	BR101A		12		
(V_{CE} = 5.0V, I_C = 0.5A, Note 2)	BR100A		15		
(V_{CE} = 5.0V, I_C = 2.0A, Note 2)	BR100A		15		
(V_{CE} = 5.0V, I_C = 5.0A, Note 2)	BR100A		5		
(V_{CE} = 5.0V, I_C = 0.5A, Note 2)	BR101A		20		
(V_{CE} = 5.0V, I_C = 2.0A, Note 2)	BR101A		15		
(V_{CE} = 5.0V, I_C = 5.0A, Note 2)	BR101A		5		
COLLECTOR-EMITTER SATURATION VOLTAGE(1)		$V_{CE(sat)}$			
(I_C = 2.0A, I_B = 0.4A)				0.3	V
(I_C = 3.0A, I_B = 0.3A)				1.5	V
(I_C = 2.0A, I_B = 0.4A, Note 2)	BR100A			2.0	V
(I_C = 2.0A, I_B = 0.4A, Note 2)	BR101A			3.0	V
OUTPUT CAPACITANCE		C_{obo}			
(V_{CB} = 30V, f= 1.0 MHZ)				50	pF
MAGNITUDE OF SMALL SIGNAL GAIN		$\|h_{FE}\|$			
(V_{CE}= 5.0V, I_C= 1.0A, f= 10MHZ)			15		
For typical curves, soar, pulsed operation, Etc. see 2N5527 2N5531.					

(1): Pulsed 300μsec; 2% Duty Cycle

Note 2: After exposure, 1×10^{14}n/Cm^2, Flux 1MEV