

PNP SILICON POWER TRANSISTOR

2SB1151

DESCRIPTION The 2SB1151 is a Low $V_{CE(sat)}$ transistor which has a large current capability and wide SOA.

It is suitable for DC-DC converter, or driver of solenoid or motor.

FEATURES

- Low Collector Saturation Voltage.
 $V_{CE(sat)} = -0.14$ V TYP. (@ $I_C/I_B = -2.0$ A/ -0.2 A)
- Large Current.
 $I_{C(DC)} = -5.0$ A, $I_{C(pulse)} = -8.0$ A
- High Total Power Dissipation. : $P_T = 1.3$ W
- Complementary to 2SD1691.

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures

Storage Temperature -55 to $+150$ °C

Junction Temperature $+150$ °C Maximum

Maximum Power Dissipations

Total Power Dissipation ($T_a = 25$ °C) 1.3 W

Total Power Dissipation ($T_c = 25$ °C) 20 W

Maximum Voltages and Currents ($T_a = 25$ °C)

V_{CBO} Collector to Base Voltage -60 V

V_{CEO} Collector to Emitter Voltage -60 V

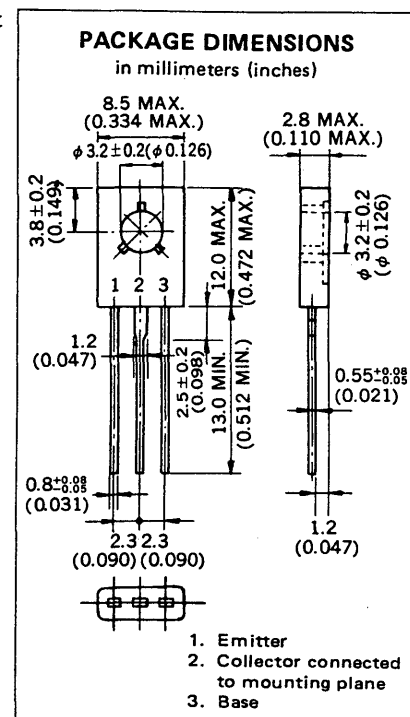
V_{EBO} Emitter to Base Voltage -7.0 V

$I_{C(DC)}$ Collector Current -5.0 A

$I_{C(pulse)}$ * Collector Current -8.0 A

$I_{B(DC)}$ Base Current -1.0 A

* $PW \leq 10$ ms, Duty Cycle ≤ 50 %



ELECTRICAL CHARACTERISTICS ($T_a = 25$ °C)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
$V_{CE(sat)}$ **	Collector Saturation Voltage		-0.14	-0.3	V	$I_C = -2.0$ A, $I_B = -0.2$ A
$V_{BE(sat)}$ **	Base Saturation Voltage		-0.9	-1.2	V	$I_C = -2.0$ A, $I_B = -0.2$ A
h_{FE1} **	DC Current Gain	60			—	$V_{CE} = -1.0$ V, $I_C = -0.1$ A
h_{FE2} **	DC Current Gain	100	200	400	—	$V_{CE} = -1.0$ V, $I_C = -2.0$ A
h_{FE3} **	DC Current Gain	50			—	$V_{CE} = -2.0$ V, $I_C = -5.0$ A
I_{CBO}	Collector Cutoff Current			-10	μ A	$V_{CB} = -50$ V, $I_E = 0$
I_{EBO}	Emitter Cutoff Current			-10	μ A	$V_{EB} = -7.0$ V, $I_C = 0$
t_{on}	Turn On Time		0.15	1.0	μ s	$I_C = -2.0$ A, $I_{B1} = -I_{B2} = 0.2$ A $R_L = 5.0$ Ω , $V_{CC} = -10$ V
t_{stg}	Storage Time		0.78	2.5	μ s	
t_f	Fall Time		0.18	1.0	μ s	

** $PW \leq 350$ μ s, Duty Cycle ≤ 2 %

Classification of h_{FE2}

Rank	M	L	K
Range	100 to 200	160 to 320	200 to 400

Test Conditions: $V_{CE} = -1.0$ V, $I_C = -2.0$ A

TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)