

PNP SILICON POWER TRANSISTOR

2SB1217

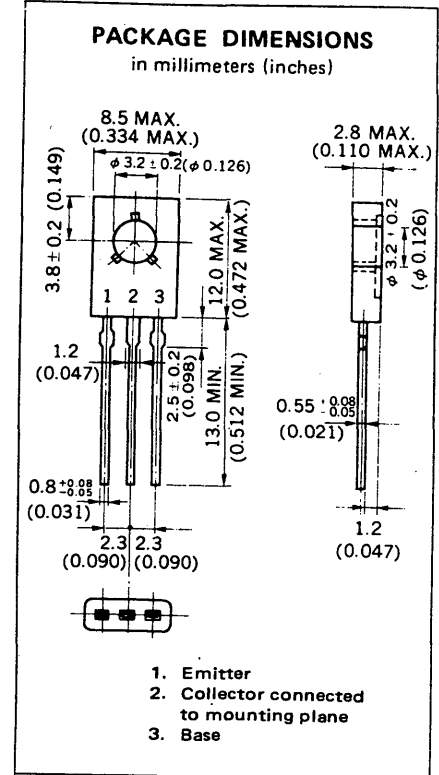
DESCRIPTION The 2SB1217 is a Low $V_{CE(sat)}$ transistor which has a large current capability and wide SOA. It is suitable for DC-DC converter, or driver of solenoid or motor.

- FEATURES**
- Low Collector Saturation Voltage.
 $V_{CE(sat)} = -0.3 \text{ V MAX. (@ } I_C/I_B = -1.5 \text{ A/-0.15 A)}$
 - Large Current
 $I_{C(DC)} = -3.0 \text{ A}$, $I_{C(pulse)} = -5.0 \text{ A}$
 - High Total Power Dissipation: $P_T = 1.3 \text{ W}$
 - Complementary to 2SD1818

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures		
Storage Temperature		-55 to +150 °C
Junction Temperature		+150 °C Maximum
Maximum Power Dissipations		
Total Power Dissipation ($T_a = 25 \text{ °C}$)	...	1.3 W
Total Power Dissipation ($T_c = 25 \text{ °C}$)	...	10 W
Maximum Voltages and Currents ($T_a = 25 \text{ °C}$)		
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	 -3.0 A
$I_{C(pulse)}$	Collector Current	 -5.0 A
$I_{B(DC)}$	Base Current	 -0.5 A

* $PW \leq 10 \mu\text{s}$, Duty Cycle $\leq 50 \%$



ELECTRICAL CHARACTERISTICS ($T_a = 25 \text{ °C}$)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
$V_{CE(sat)}^{**}$	Collector Saturation Voltage		-0.2	-0.3	V	$I_C = -1.5 \text{ A}$, $I_B = -0.15 \text{ A}$
$V_{BE(sat)}^{**}$	Base Saturation Voltage		-0.9	-1.2	V	$I_C = -1.5 \text{ A}$, $I_B = -0.15 \text{ A}$
h_{FE1}^{**}	DC Current Gain	60			—	$V_{CE} = -2.0 \text{ V}$, $I_C = -0.2 \text{ A}$
h_{FE2}^{**}	DC Current Gain	100		400	—	$V_{CE} = -2.0 \text{ V}$, $I_C = -0.6 \text{ A}$
h_{FE3}^{**}	DC Current Gain	50			—	$V_{CE} = -2.0 \text{ V}$, $I_C = -2.0 \text{ A}$
I_{CBO}	Collector Cutoff Current			-10	μA	$V_{CB} = -60 \text{ V}$, $I_E = 0$
I_{EBO}	Emitter Cutoff Current			-10	μA	$V_{EB} = -7.0 \text{ V}$, $I_C = 0$
t_{on}	Turn-On Time		0.15	0.5	μs	$I_C = -1.0 \text{ A}$, $I_{B1} = -I_{B2} = -0.1 \text{ A}$ $R_L = 10 \Omega$, $V_{CC} \approx -10 \text{ V}$
t_{stg}	Storage Time		0.5	2.0	μs	
t_f	Fall Time		0.1	0.5	μs	

** $PW \leq 350 \mu\text{s}$, Duty Cycle $\leq 2 \%$

Classification of h_{FE2}

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

Test Conditions $V_{CE} = -2.0 \text{ V}$, $I_C = -0.6 \text{ A}$

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