

## PNP SILICON POWER TRANSISTOR

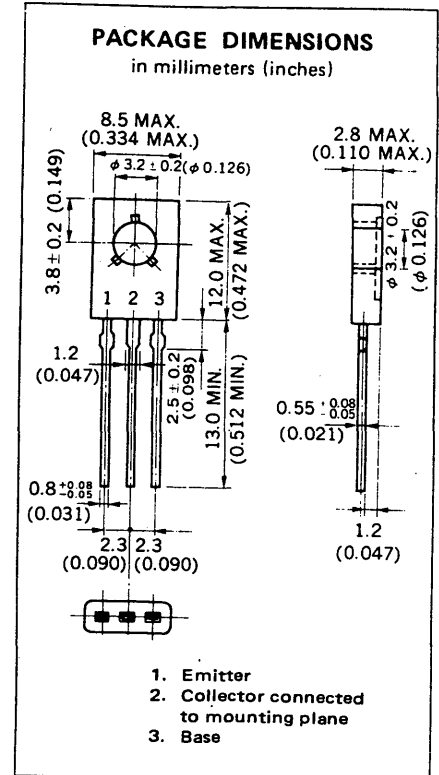
# 2SB1217

**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 ≤ 10 μs, Duty Cycle ≤ 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	$I_C = -1.0 \text{ A}$ , $I_{B1} = -I_{B2} = -0.1 \text{ A}$ $R_L = 10 \text{ } \Omega$ , $V_{CC} \approx -10 \text{ V}$
$t_{stg}$	Storage Time		0.5	2.0	μs	
$t_f$	Fall Time		0.1	0.5	μs	

\*\*PW ≤ 350 μs, Duty Cycle ≤ 2 %

### Classification of $h_{FE2}$

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

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

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