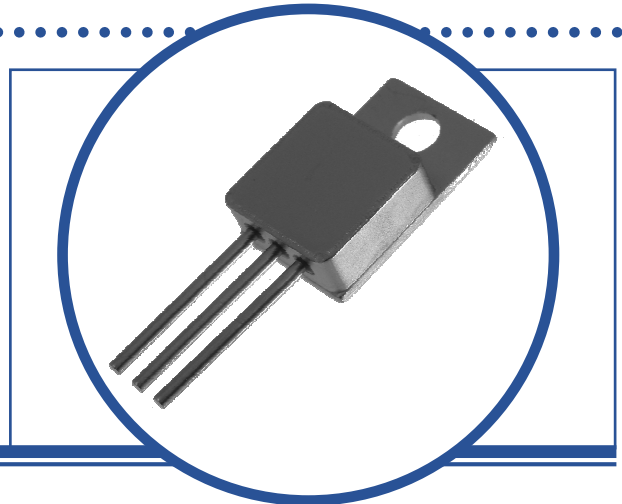


# SILICON PLANAR EPITAXIAL PNP TRANSISTOR

## BDS19

- High Voltage
- Hermetic TO220 Isolated Metal Package
- Ideally suited for Power Linear, Switching and general Purpose Applications
- Screening Options Available



### ABSOLUTE MAXIMUM RATINGS ( $T_C = 25^\circ\text{C}$ unless otherwise stated)

$V_{CBO}$	Collector – Base Voltage	-150V
$V_{CEO}$	Collector – Emitter Voltage	-150V
$V_{EBO}$	Emitter – Base Voltage	-5V
$I_C$	Continuous Collector Current	-8A
$I_B$	Base Current	-2A
$P_D$	Total Power Dissipation at $T_C \leq 75^\circ\text{C}$ Derate Above $75^\circ\text{C}$	50W 0.4W/ $^\circ\text{C}$
$T_J$	Junction Temperature Range	-65 to $+200^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-65 to $+200^\circ\text{C}$

### THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case	2.5	$^\circ\text{C/W}$

\*\* This datasheet supersedes document 3346

Semelab Limited reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.



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## ELECTRICAL CHARACTERISTICS ( $T_C = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
$V_{(BR)CEO}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = -10\text{mA}$ $I_B = 0$	-150			V
$I_{CEO}$	Collector Cut-Off Current	$V_{CE} = -75\text{V}$ $I_B = 0$			-0.1	mA
$I_{CBO}$	Collector Cut-Off Current	$V_{CB} = -150\text{V}$ $I_E = 0$			-20	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-Off Current	$V_{EB} = -5\text{V}$ $I_C = 0$			-10	
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = -0.5\text{A}$ $V_{CE} = -2\text{V}$	40		250	
		$I_C = -4\text{A}$ $V_{CE} = -2\text{V}$	15		150	
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = -0.5\text{A}$ $I_B = -0.05\text{A}$			-0.4	V
		$I_C = -4\text{A}$ $I_B = -0.4\text{A}$			-1.5	
$V_{BE(on)}^{(1)}$	Base-Emitter Voltage	$I_C = -1.0\text{A}$ $V_{CE} = -2\text{V}$			-1.4	

## DYNAMIC CHARACTERISTICS

$f_T$	Transition Frequency	$I_C = -0.5\text{A}$ $V_{CE} = -4\text{V}$ $f = 5\text{MHz}$	10			MHz
$t_{on}$	Turn-On Time	$I_C = -2\text{A}$ $V_{CC} = -80\text{V}$ $I_{B1} = -0.2\text{A}$			0.5	$\mu\text{s}$
$t_s$	Storage Time	$I_C = -2\text{A}$ $V_{CC} = -80\text{V}$			1.5	
$t_f$	Fall Time	$I_{B1} = -I_{B2} = -0.2\text{A}$			0.3	

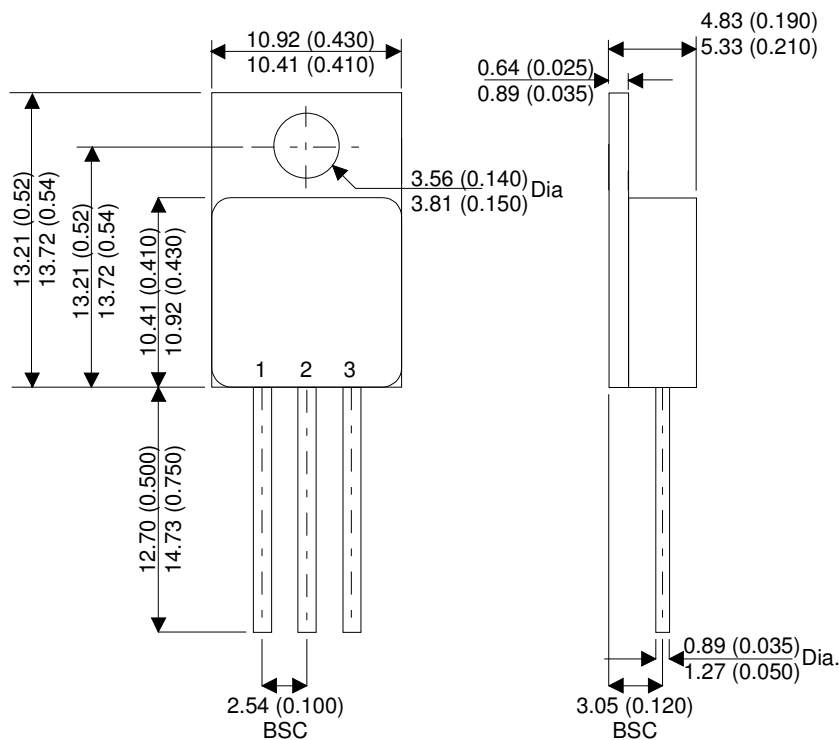
### Notes

(1) Pulse Width  $\leq 300\mu\text{s}$ ,  $\delta \leq 2\%$

# SILICON PLANAR EPITAXIAL PNP TRANSISTOR BDS19

## MECHANICAL DATA

Dimensions in mm (inches)



## TO220M (TO-257AB)

Pin 1 - Base

Pin 2 - Collector

Pin 3 - Emitter