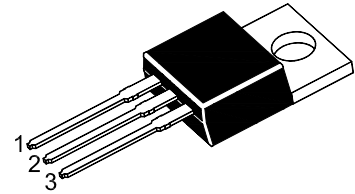


# ST BD909 / ST BD911

## NPN Complementary Silicon Power Transistors

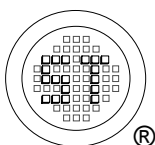


1.Base 2.Collector 3.Emitter

TO-220 Plastic Package

### Absolute Maximum Ratings ( $T_a = 25\text{ }^\circ\text{C}$ )

Parameter	Symbol	Value		Unit
		ST BD909	ST BD911	
Collector Base Voltage	$V_{CB0}$	80	100	V
Collector Emitter Voltage	$V_{CE0}$	80	100	V
Emitter Base Voltage	$V_{EB0}$	5		V
Collector Current	$I_C$	15		A
Base Current	$I_B$	5		A
Total Power Dissipation @ $T_C \leq 25\text{ }^\circ\text{C}$	$P_{tot}$	90		W
Operating Junction Temperature Range	$T_J$	150		$^\circ\text{C}$
Storage Junction Temperature Range	$T_J, T_s$	-65 to +150		$^\circ\text{C}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.4		$^\circ\text{C/W}$



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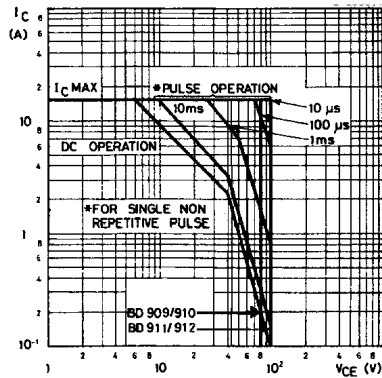
Dated : 22/03/2006

# ST BD909 / ST BD911

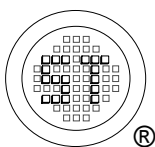
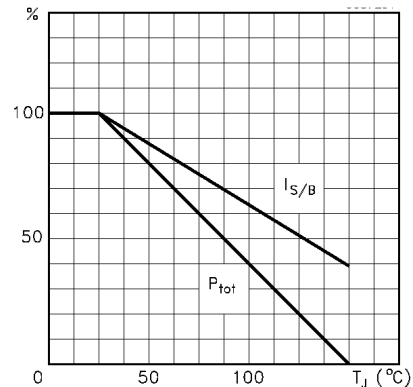
## Characteristics at $T_c = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain				
at $V_{CE} = 4\text{ V}$ , $I_C = 0.5\text{ A}$	$h_{FE}$	40	250	-
at $V_{CE} = 4\text{ V}$ , $I_C = 5\text{ A}$	$h_{FE}$	15	150	-
at $V_{CE} = 4\text{ V}$ , $I_C = 10\text{ A}$	$h_{FE}$	5	-	-
Collector Emitter Sustaining Voltage				
at $I_C = 100\text{ mA}$				
ST BD909	$V_{CEO(sus)}$	80	-	V
ST BD911		100	-	
Collector Cutoff Current				
at $V_{CB} = 80\text{ V}$	$I_{CBO}$	-	0.5	mA
at $V_{CB} = 100\text{ V}$	$I_{CBO}$	-	0.5	mA
Collector Cutoff Current				
at $V_{CE} = 40\text{ V}$	$I_{CEO}$	-	1	mA
at $V_{CE} = 50\text{ V}$	$I_{CEO}$	-	1	mA
Emitter Cutoff Current				
at $V_{EB} = 5\text{ V}$	$I_{EBO}$	-	1	mA
Collector Emitter Saturation Voltage				
at $I_C = 5\text{ A}$ , $I_B = 0.5\text{ A}$	$V_{CE(sat)}$	-	1	V
at $I_C = 10\text{ A}$ , $I_B = 2.5\text{ A}$	$V_{CE(sat)}$	-	3	V
Base Emitter Saturation Voltage				
at $I_C = 10\text{ A}$ , $I_B = 2.5\text{ A}$	$V_{BE(sat)}$	-	2.5	V
Base Emitter Voltage				
at $I_C = 5\text{ A}$ , $V_{CE} = 4\text{ V}$	$V_{BE}$	-	1.5	V
Transition Frequency				
at $V_{CE} = 4\text{ V}$ , $I_C = 0.5\text{ A}$ ,	$f_T$	3	-	MHz

Safe Operating Area



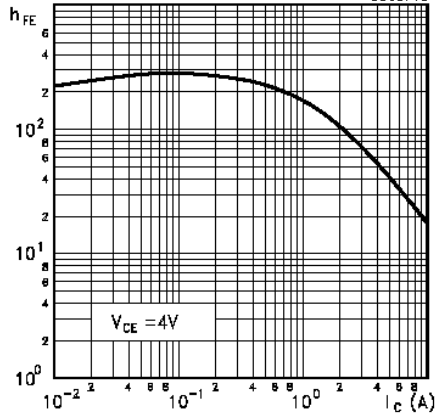
Derating Curves



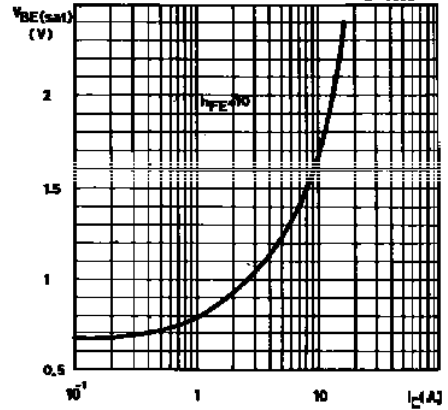
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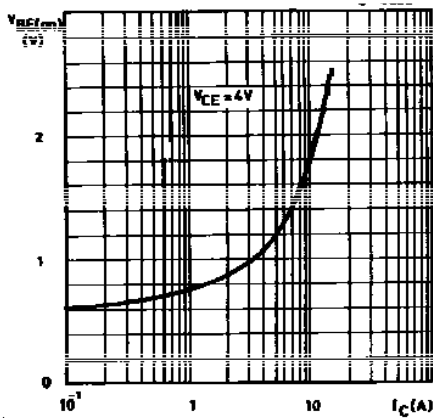
DC Current Gain



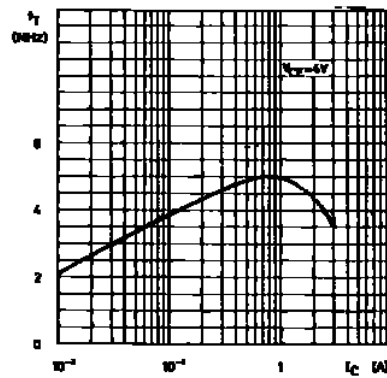
Base-Emitter Saturation Voltage



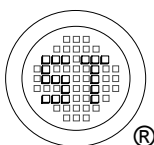
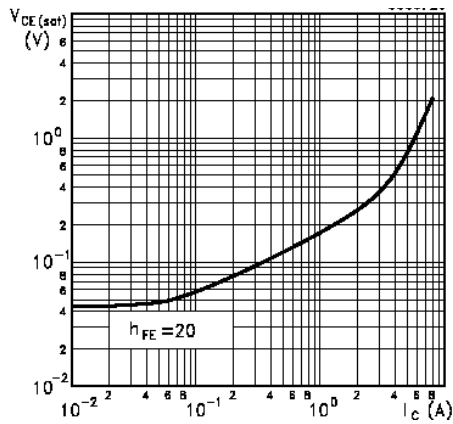
DC Transconductance



Transition Frequency



Collector-Emitter Saturation Voltage

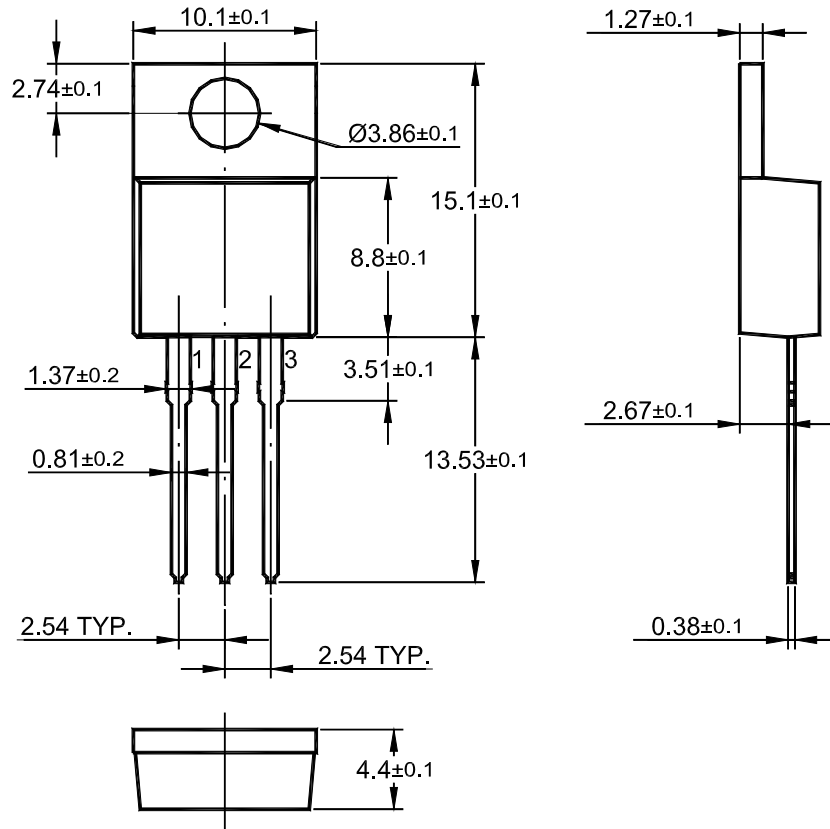


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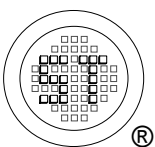


# ST BD909 / ST BD911

## TO-220 PACKAGE OUTLINE



Dimensions in mm



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Dated : 22/03/2006