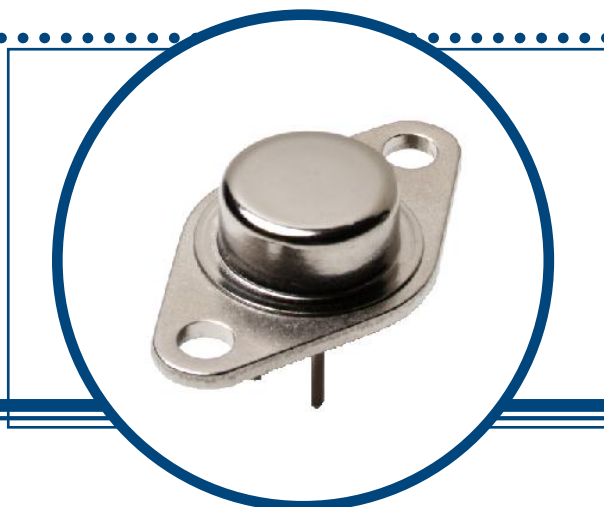


# SILICON NPN POWER TRANSISTOR

## 2N6235R

- Hermetic TO66 Metal Package
- Designed For Driver Circuits, Switching and Amplifier Applications
- Screening Options Available



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

$V_{CBO}$	Collector - Base Voltage	350V
$V_{CEO}$	Collector - Emitter Voltage	275V
$V_{EBO}$	Emitter – Base Voltage	6V
$I_C$	Continuous Collector Current	5A
$I_B$	Base Current	2A
$P_D$	Total Power Dissipation at $T_C = 25^\circ\text{C}$ Derate Above $25^\circ\text{C}$	50W 0.286W/ $^\circ\text{C}$
$T_J$	Junction Temperature Range	-65 to +200 $^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-65 to +200 $^\circ\text{C}$

### THERMAL PROPERTIES

Symbols	Parameters	Min.	Typ.	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case			3.5	$^\circ\text{C}/\text{W}$

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.

# SILICON NPN POWER TRANSISTOR 2N6235R

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

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
$I_{CEO}$	Collector-Emitter Cut-Off Current	$V_{CE} = 275\text{V}$ $I_B = 0$			1.0	mA
$I_{CEX}$	Collector-Emitter Cut-Off Current	$V_{CE} = 275\text{V}$ $V_{BE} = -1.5\text{V}$ $T_C = 150^\circ\text{C}$			1.0	
$I_{EBO}$	Emitter-Base Cut-Off Current	$V_{EB} = 6\text{V}$ $I_C = 0$			0.1	
$I_{CBO}$	Collector-Base Cut-Off Current	$V_{CB} = 350\text{V}$ $I_E = 0$			0.1	
$V_{BE(on)}^1$	Base-Emitter Voltage	$I_C = 1.0\text{A}$ $V_{CE} = 5\text{V}$			1.0	V
$V_{CE(sat)}^1$	Collector-Emitter Saturation Voltage	$I_C = 1.0\text{A}$ $I_B = 100\text{mA}$			0.5	
		$I_C = 5\text{A}$ $I_B = 1.0\text{A}$			2.5	
$V_{BE(sat)}^1$	Base-Emitter Saturated Voltage	$I_C = 1.0\text{A}$ $I_B = 100\text{mA}$			1.0	
		$I_C = 5\text{A}$ $I_B = 1.0\text{A}$			2	
$h_{FE}^1$	Forward-current transfer ratio	$I_C = 0.1\text{A}$ $V_{CE} = 5\text{V}$	25			
		$I_C = 1.0\text{A}$ $V_{CE} = 5\text{V}$	25		125	
		$I_C = 3\text{A}$ $V_{CE} = 5\text{V}$	10			

## DYNAMIC CHARACTERISTICS

$f_T^2$	Current-Gain Bandwidth Product	$I_C = 250\text{mA}$ $V_{CE} = 10\text{V}$ $f = 10\text{MHz}$	20			MHz
$C_{obo}$	Output Capacitance	$I_E = 0$ $V_{CB} = 10\text{V}$ $f = 1.0\text{MHz}$			250	pF

## SWITCHING CHARACTERISTICS

$t_r$	Rise Time	$I_C = 1.0\text{A}$ $V_{CC} = 200\text{V}$ $I_B = 0.1\text{A}$		0.5		$\mu\text{s}$
$t_s$	Storage Time	$I_C = 1.0\text{A}$ $V_{CC} = 200\text{V}$		3.5		
$t_f$	Fall Time	$I_{B1} = I_{B2} = 0.1\text{A}$		0.5		

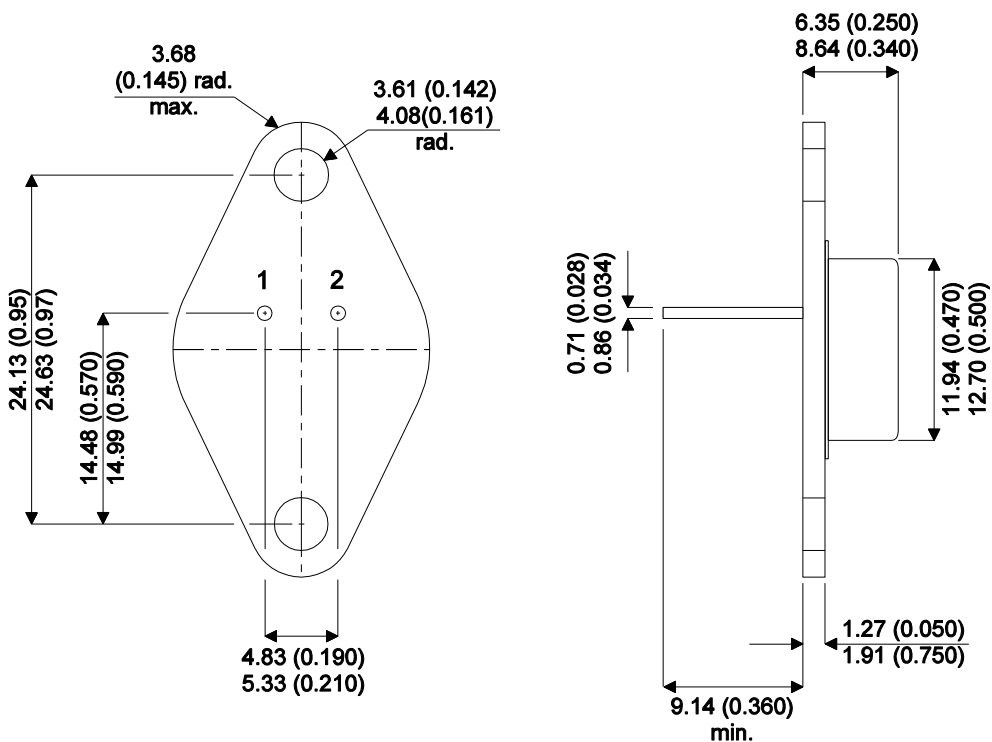
<sup>1</sup> Pulse Test:  $t_p = 300\mu\text{s}$ ,  $\delta \leq 2\%$

<sup>2</sup>  $f_T = |h_{fe}| \times f_{rest}$

# SILICON NPN POWER TRANSISTOR 2N6235R

## Mechanical Data

Dimensions in mm (inches)



## TO66 (TO-213AA)

Pin 1 - Base

Pin 2 - Emitter

Case - Collector