

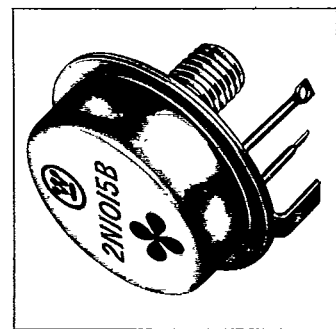
TD 54-561 Page 1

Westinghouse



Silicon Power Transistors
JEDEC Types 2N1015,
2N1016

7.5 Amperes, 150 Watts
Collector-to-Emitter Voltage 30 to 300
Volts



Application

The Westinghouse 2N1015 and 2N1016 series are NPN fused silicon power transistors. These transistors are rated at a maximum collector current of 7.5 amperes, the 2N1015 series having a minimum d-c gain of 10 at 2 amperes and the 2N1016 having a minimum d-c gain of 10 at 5 amperes. Exhibiting extremely low saturation resistance and characterized by excellent operating capabilities at True Voltage Ratings and high temperatures, these transistors provide a new degree of flexibility for circuit design. The silicon power transistor is hermetically sealed in a welded case and features an all-welded internal construction, thus assuring maximum reliability and long life. The mounting stud of the single-ended case style is designed for good thermal contact to an external heat sink as well as ease of installation. Specifically designed for high-power switching, voltage and current regulators, and amplifier application in industrial and military equipments, each transistor is 100

percent tested for electrical characteristics, and in addition, each production lot is further subjected to rigid environmental testing.

All of these transistors carry the Westinghouse Lifetime Guarantee.

Guarantee

Westinghouse warrants to the original purchaser that it will correct any defect or defects in workmanship, by repair or replacement f.o.b. factory, for any silicon power semiconductor bearing this symbol $\star$ TM during the life of the equipment in which it is originally installed, provided said device is used within manufacturer's published ratings and applied in accordance with good engineering practice. This warranty shall constitute a fulfillment of all Westinghouse liabilities in respect to said products. This warranty is exclusive and in lieu of all other warranties of quality, whether written, oral, or implied (including any warranty of merchantability or fitness for purpose). Westinghouse shall not be liable for any consequential damages.

Thermal Characteristics

- *Thermal resistance, θ_{JC} , $^{\circ}\text{C}/\text{watt}$, max. .07
- *Derating factor, $\text{Watts}/^{\circ}\text{C}$ 1.43
- *Typical thermal drop, case to heat sink, $^{\circ}\text{C}/\text{watt}$ 0.3



Maximum Ratings

Voltage

*Collector to emitter, V_{CE} , V_{CE} , V_{CE}

2N1016 + 2N1016A + 2N1015 + 2N1015A + 2N1015B + 2N1015C + 2N1015D + 2N1015E + 2N1015F + 2N1016F + 30

60

100

150

200

250

300

equal to rated V_{CE}

25

7.5

5.0

7.5

150

+150

- 65

+150

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Electrical Characteristics

$T_C = 25^\circ\text{C}$ unless otherwise specified

2N1015/2N1016

Collector current at $V_{CE} = V_{CE}$ (from max. ratings), $T_J = 150^\circ\text{C}$, $V_{BE} = -1.5\text{ Vdc}$, $I_{C1} = 0$, $T_J = 150^\circ\text{C}$

Emitter current at $V_{BE} = 25\text{ Vdc}$, $I_C = 0$, $T_J = 150^\circ\text{C}$

Switching time, delay plus rise time

Storage plus fall time

Saturation resistance at $I_C = 2\text{ Adc}$, $I_B = 300\text{ mAdc}$

Dc current gain at $V_{CE} = 4\text{ Vdc}$, $I_C = 2\text{ Adc}$

Base voltage at $I_C = 2\text{ Adc}$, $I_B = 300\text{ mAdc}$

Beta cut-off frequency

2N1016

Saturation resistance at $I_C = 5\text{ Adc}$, $I_B = 750\text{ mAdc}$

Dc current gain at $V_{CE} = 4\text{ Vdc}$, $I_C = 5\text{ Adc}$

Base voltage at $I_C = 5\text{ Adc}$, $I_B = 750\text{ mAdc}$

Beta cut-off frequency

*JEDC registered parameters.

② The maximum collector to emitter voltage rating is based on V_{CE} to the maximum rated power dissipation of the transistor with the base emitter forward biased.
The maximum collector to emitter voltage rating is below the various "break-down" voltages, BV_{CE0} , BV_{CEs} , BV_{CES} and the α_{max} curve in the safe operating region, V_{CE0} (sat). Each transistor is power tested within its maximum limits of V_{CE} , P_D and I_C . (see Figures 3 and 4).



Typical Characteristics

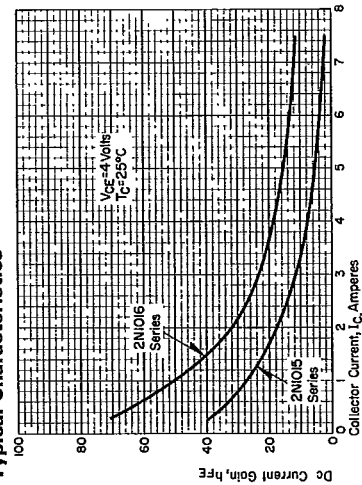


Figure 1. Dc gain versus collector current.

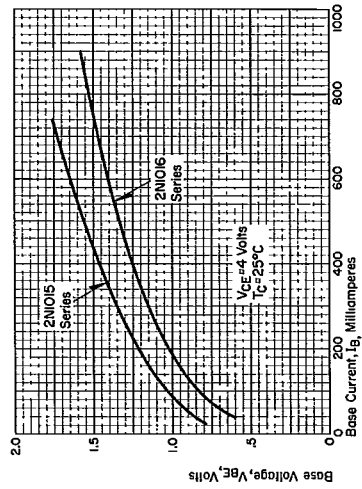


Figure 2. Input characteristics.

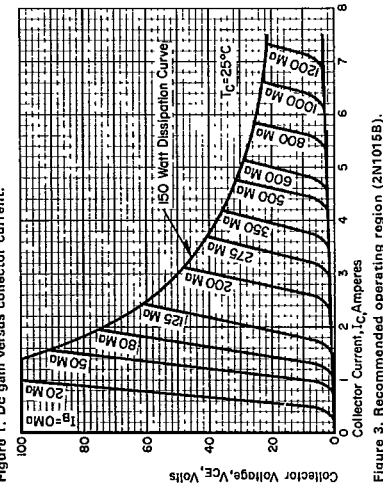


Figure 3. Recommended operating region (2N1015B).

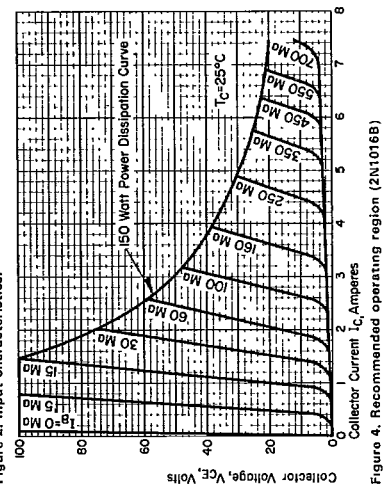
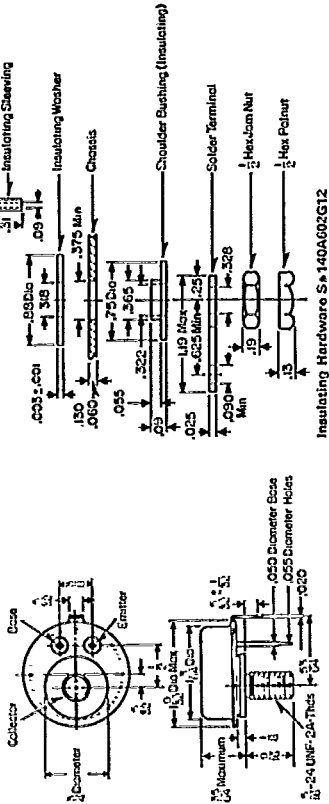


Figure 4. Recommended operating region (2N1016B).



Dimensions in Inches



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