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Westinghouse



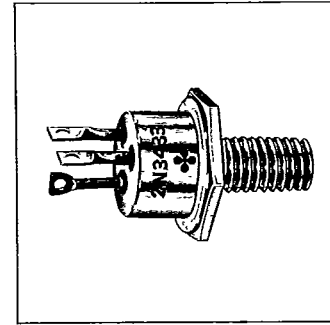
Silicon Power Transistors JEDEC Types 2N3429-33

7.5 Amperes, 150 Watts
Collector-to-Emitter Voltage 50 to 250
Volts

Application

The Westinghouse 2N3429 series are NPN fused silicon power transistors specifically designed for high power switching, amplifier and regulator applications. Exhibiting extremely low saturation resistance, low thermal resistance, and unequaled operating capabilities at true voltage ratings coupled with high temperature capabilities, these transistors result in new flexibility in circuit applications.

Like all Westinghouse silicon power transistors, these devices are free from second breakdown within the complete range of maximum current-voltage ratings. Hard solder construction assures freedom from thermal fatigue. These devices also feature Westinghouse exclusive quality assurance with 100 per cent power testing for the ultimate in application reliability. In addition, each production lot is further subjected to rigid environmental testing.



Typical Applications

- | | |
|---------------------|------------------|
| Amplifiers | Inverters |
| Switching Circuits | Ignition Systems |
| Industrial Controls | Modulators |
| Regulators | Servo Systems |
| Power Supplies | Sweep Circuits |
| Pulse Generators | Logic Circuits |
| Oscillators | Active Filters |

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 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.



Maximum Ratings

① The maximum collector to emitter voltage rating is guaranteed up to the maximum rated power dissipation of the transistor with the base emitter forward biased.

The maximum collector to emitter voltage rating is shown in the "load-down" voltage, BV_{CEO} , BV_{CEX} , and the $\alpha_{FE}=1$ curve in the safe operating region, V_{CE} (sat). Each transistor is power tested within its maximum limits of V_{CE} , P_D and I_C .

Voltage	2N3425*	2N3430*	2N3431*	2N3432*	2N3433*
*Collector to emitter, V_{CE} †	50	100	150	200	250
*Emitter to base, V_{EBO}	25	50	75	100	125
*Collector to base, V_{CB}	equal to rated V_{CE}				
Current					
*Collector current, I_C	7.5	15	20	25	30
*Base current, I_B	3.0	6.0	8.0	10.0	12.0
*Emitter current, I_E	7.5	15	20	25	30
Power					
*Power dissipation, P_T at $T_C=60^\circ\text{C}$, watts, max.	150	300	400	500	600
*Typical thermal drop, case to heat sink, $^\circ\text{C}/\text{watt}$	75	150	200	250	300
*Linear derating factor from 60°C , Watts/ $^\circ\text{C}$	1.33	2.67	3.56	4.44	5.33
Temperature					
*Case temperature, T_C , $^\circ\text{C}$	+175	+175	+175	+175	+175
*Storage temperature, T_{STG} , $^\circ\text{C}$ min. max.	-65	-65	-65	-65	-65

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

Symbol	Minimum	Typical	Max.	Units
Collector cut-off current at $V_{CEX}=\text{max. rating}$, $V_{BE}=-1.5\text{ Vdc}$	..	..	* 2	mAdc
Collector cut-off current at $V_{CEX}=\text{max. rating}$, $T_C=175^\circ\text{C}$, $V_{BE}=-1.5\text{ Vdc}$	..	..	*10	mAdc
Emitter cut-off current at $V_{EB}=25\text{ Vdc}$, $I_C=0$, $T_C=175^\circ\text{C}$	..	..	*10	mAdc
Turn-on time	..	3	5	μsec
Turn-off time	..	6	*12	μsec
Collector-emitter sustaining voltage at $I_C=500\text{ mAdc}$	See Maximum Rating	..	..	Vdc
Collector-emitter saturation voltage at $I_C=5\text{ Adc}$, $I_B=750\text{ mAdc}$	..	0.5	* 1.0	Vdc
Base-emitter voltage at $I_C=5\text{ Adc}$, $I_B=750\text{ mAdc}$	..	1.3	* 2.0	Vdc
Dc current gain at $V_{CE}=2\text{ Vdc}$, $I_C=5\text{ Adc}$	*10	16	..	..
Gain bandwidth product at $I_C=5\text{ Adc}$	..	200	..	kHz
*JEDEC registered parameters				

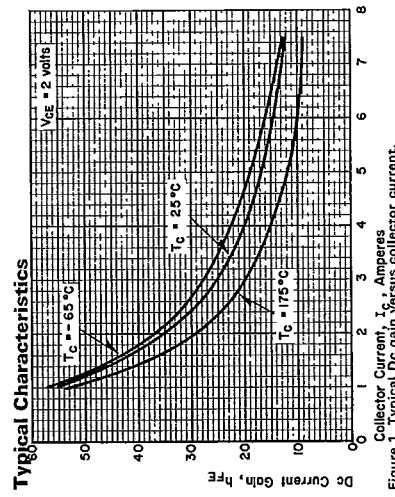


Figure 1. Typical DC gain versus collector current.

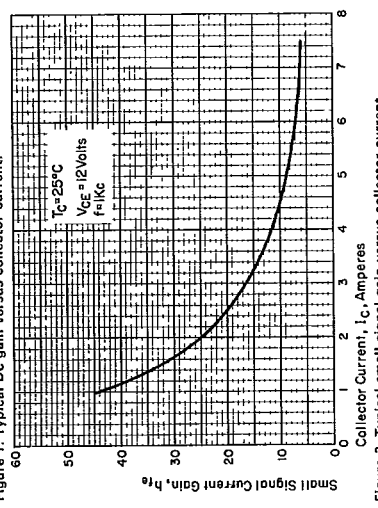


Figure 3. Typical small signal gain versus collector current.

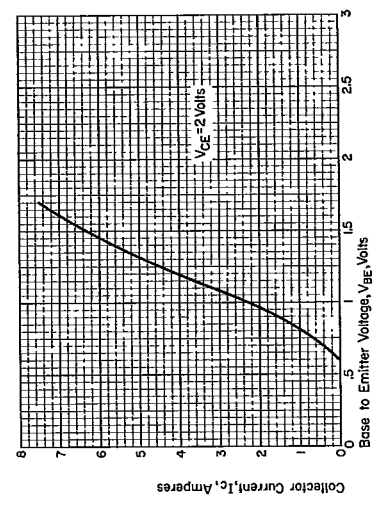


Figure 2. Typical saturation characteristics at $T_C = 25^\circ\text{C}$.

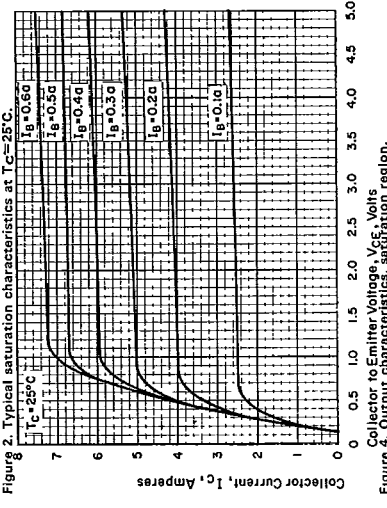


Figure 4. Output characteristics, saturation region.

Typical Characteristics

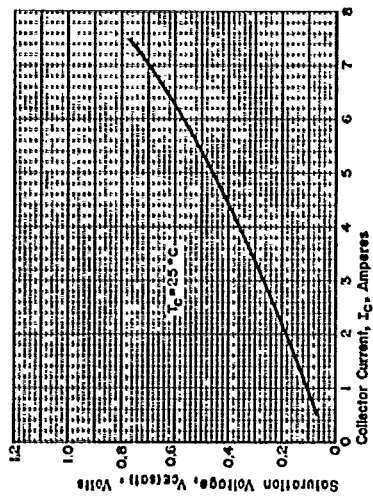
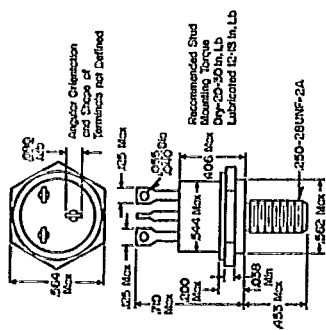


Figure 5. Typical output saturation characteristics.

Dimensions in Inches



Insulating Hardware Supplied, Sx140AG01G23

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