

7294621 POWEREX INC

40C 00604 D T-33-15

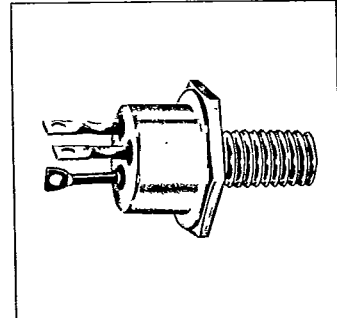
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**"O.E.M. Line"  
Silicon Power Transistors  
Westinghouse Type 153  
Type 154**

7.5 Amperes, 200 Watts  
Collector Voltages 40 to 300 Volts

**Application**  
Westinghouse types 153 and 154 NPN silicon power transistors are a series of low-cost units designed expressly to meet the needs of Original Equipment Manufacturers of commercial electronic and control apparatus. Their low saturation resistance, high collector voltage and high temperature characteristics make them ideally suited for use in regulator, amplifier and switching circuits. In many applications, one of these units can replace two or more germanium power transistors.



Westinghouse



**Maximum Ratings**

Voltage Type	V <sub>CEO</sub>	V <sub>CE</sub>	V <sub>EB0</sub>
153-04	65	40	25
154-04	65	40	25
153-06	85	60	25
154-06	85	60	25
153-08	105	80	25
154-08	105	80	25
153-10	125	100	25
154-10	125	100	25
153-12	145	120	25
154-12	145	120	25
153-14	165	140	25
154-14	165	140	25
153-16	185	160	25
154-16	185	160	25
153-18	205	180	25
154-18	205	180	25
153-20	225	200	25
154-20	225	200	25
153-22	245	220	25
154-22	245	220	25
153-24	265	240	25
154-24	265	240	25
153-26	285	260	25
154-26	285	260	25
153-28	305	280	25
154-28	305	280	25
153-30	325	300	25
154-30	325	300	25

**Current**

Collector current, I<sub>c</sub>, A dc.....7.5  
Base current, I<sub>b</sub>, A dc.....3.0

**Power**

Power dissipation, P<sub>T</sub> @ T<sub>c</sub> = 25°C,  
watts, max.....200  
Linear derating factor from 25°C...1.33W/°C

**Temperature**

Storage and operating temperature,  
T<sub>avg</sub>, T<sub>j</sub>.....-65 to +175°C

**Typical Applications**

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

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

Symbol	Type 153		Type 154	
	Min.	Typ.	Max.	Typ.
Collector cut-off current at $V_{CE} = \text{max. rating}$ , $V_{BE} = -1.5 \text{ Vdc}$ , $m\text{Ade}$ .....			10	10
Collector cut-off current at $V_{CE} = \text{max. rating}$ , $T_c = 175^\circ\text{C}$ , $V_{BE} = -1.5 \text{ Vdc}$ , $m\text{Ade}$ .....			20	20
Emitter cut-off current at $V_{BE} = 25 \text{ Vdc}$ , $I_c = 0$ , $T_c = 175^\circ\text{C}$ , $m\text{Ade}$ .....			20	20
Turn-on time at $V_{CE} = 12 \text{ Vdc}$ , $I_c = 1.5\text{A}$ , $I_b = 3\text{A}$ , microseconds.....		3		3
Turn-off time at $V_{CE} = 12 \text{ Vdc}$ , $V_{BE} = -15 \text{ Vdc}$ , $I_c = 1.5\text{A}$ , $I_b = -3\text{A}$ , microseconds.....		6		6
Collector-emitter saturation voltage at $I_c = 1.5 \text{ Adc}$ , $I_b = 0.25 \text{ Adc}$ , $V_{dc}$ .....			1.30	1.25
Base-emitter voltage at $I_c = 1.5 \text{ Adc}$ , $I_b = 0.25 \text{ Adc}$ , $V_{dc}$ .....			2.5	2.0
Base-emitter voltage at $I_c = 1.5 \text{ Adc}$ , $V_{CE} = 4 \text{ Vdc}$ , $V_{dc}$ .....			2.2	1.8
Dc current gain at $V_{CE} = 4 \text{ Vdc}$ , $I_c = 1.5 \text{ Adc}$ .....	15			25

**Typical Characteristics**

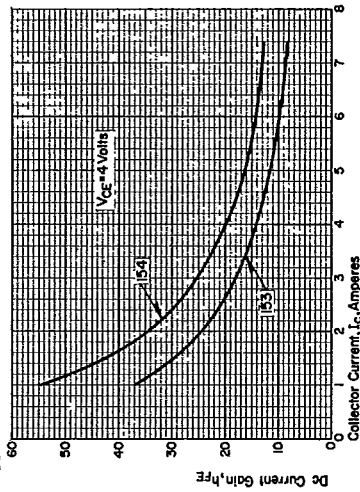


Figure 1. Typical dc gain versus collector current at  $T_c = 25^\circ\text{C}$ .

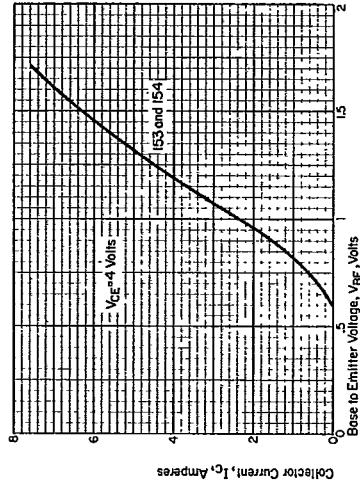


Figure 2. Typical transconductance characteristics at  $T_c = 25^\circ\text{C}$ .

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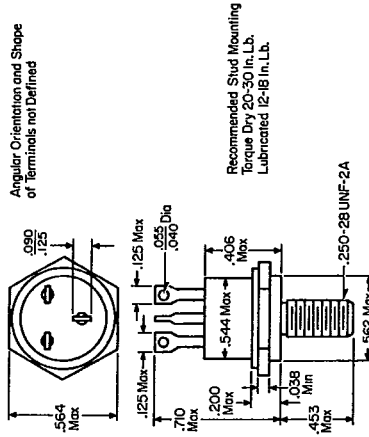
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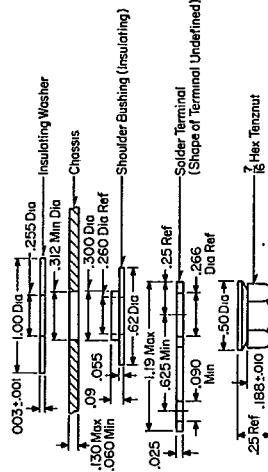
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Dimensions in Inches



Angular Orientation and Shape of Terminals not Defined

Recommended Stud Mounting Torque Dry 20-30 In. Lb. Lubricated 12-18 In. Lb.



Insulating hardware supplied, S#140A601G23.

April, 1987  
Supersedes TD 54-672, pages 3 and 4, dated December, 1963  
E. D. C/2116/DB; E. D. C/2117

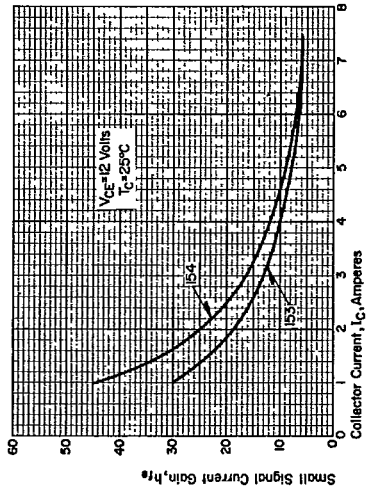


Figure 3. Typical small signal gain versus collector current.

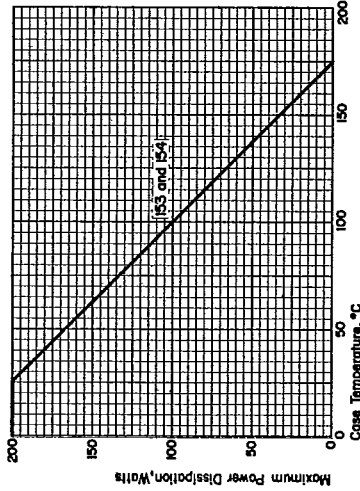


Figure 4. Derating curve.

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