

**isc Silicon NPN Power Transistors**

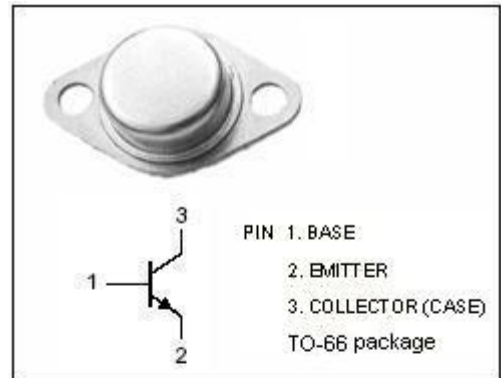
**2SD103**

**DESCRIPTION**

- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 50V(\text{Min})$
  - High Power Dissipation-  
:  $P_C = 25W(\text{Max}) @ T_C = 25^\circ\text{C}$
- Complement to Type 2SB503

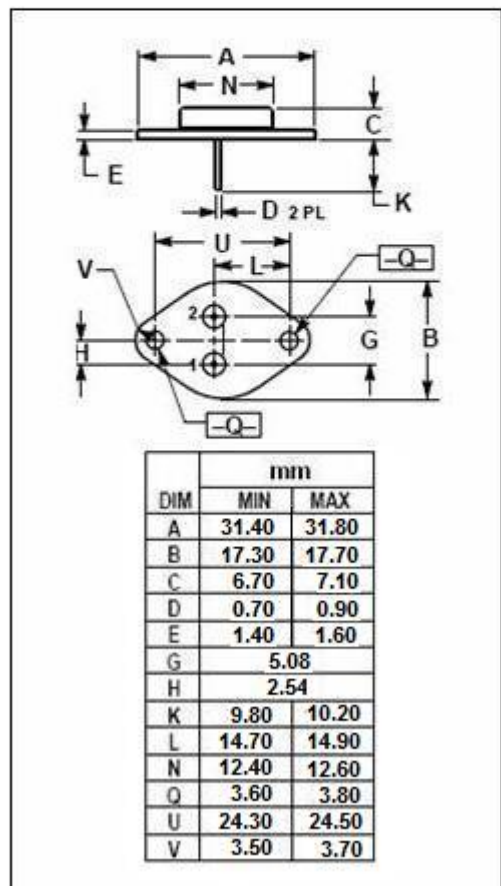
**APPLICATIONS**

- Designed for audio power amplifier, power switching, DC-DC converter and regulator applications.



**ABSOLUTE MAXIMUM RATINGS( $T_a = 25^\circ\text{C}$ )**

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	80	V
$V_{CEO}$	Collector-Emitter Voltage	50	V
$V_{EBO}$	Emitter-Base Voltage	10	V
$I_C$	Collector Current-Continuous	3	A
$I_E$	Emitter Current-Continuous	-3	A
$I_B$	Base Current-Continuous	1	A
$P_C$	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	25	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-65~150	$^\circ\text{C}$



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## 2SD103

## ELECTRICAL CHARACTERISTICS

T<sub>j</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 100mA; I <sub>B</sub> = 0	50			V
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage	I <sub>C</sub> = 10mA; I <sub>E</sub> = 0	80			V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> = 10mA; I <sub>C</sub> = 0	10			V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 3A; I <sub>B</sub> = 0.3A			1.0	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 3A; I <sub>B</sub> = 0.3A			1.5	V
V <sub>BE(on)</sub>	Base-Emitter On Voltage	I <sub>C</sub> = 0.5A; V <sub>CE</sub> = 5V			1.0	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 50V; I <sub>E</sub> = 0			20	μ A
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 10V; I <sub>C</sub> = 0			200	μ A
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 0.5A; V <sub>CE</sub> = 5V	30		300	
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 2.5A; V <sub>CE</sub> = 5V	15			
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>E</sub> = -0.5A; V <sub>CE</sub> = 10V		1		MHz
C <sub>OB</sub>	Output Capacitance	I <sub>E</sub> = 0; V <sub>CB</sub> = 10V; f= 1MHz		200		pF