

isc Silicon NPN Power Transistors
2SD103
DESCRIPTION

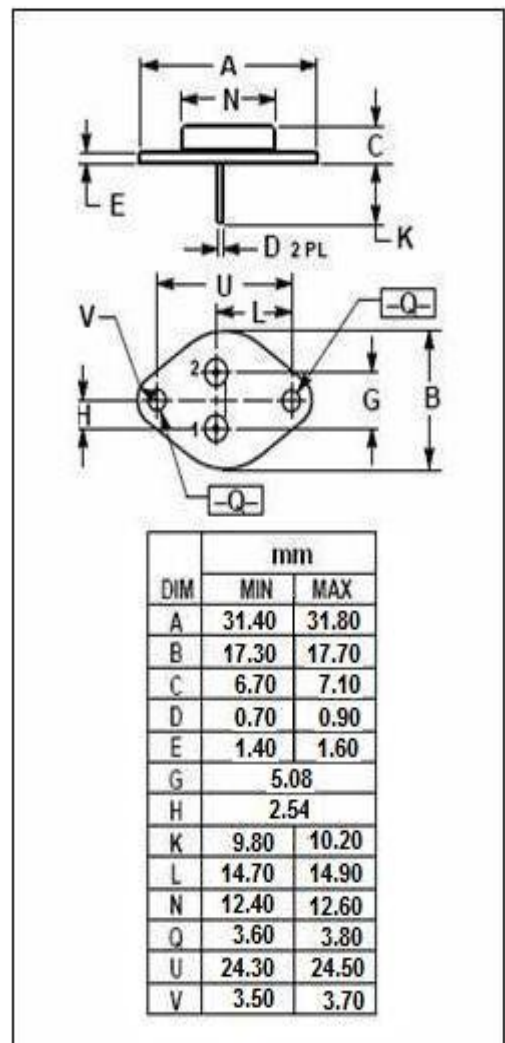
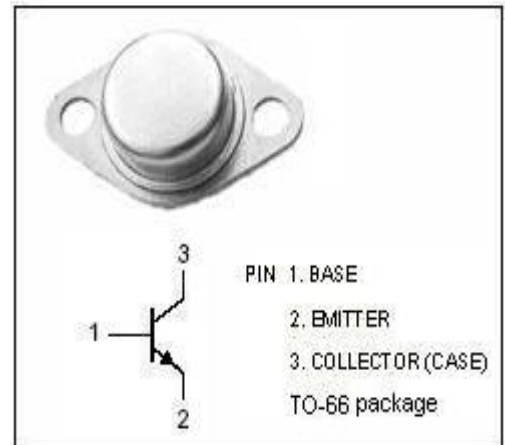
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 50V(\text{Min})$
- High Power Dissipation-
: $P_C = 25W(\text{Max})@T_C = 25^\circ\text{C}$
- Complement to Type 2SB503
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

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	$^\circ\text{C}$



isc Silicon NPN Power Transistors**2SD103****ELECTRICAL CHARACTERISTICS**T_j=25°C unless otherwise specified

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

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