

**isc Silicon PNP Power Transistor**
**2SB904**
**DESCRIPTION**

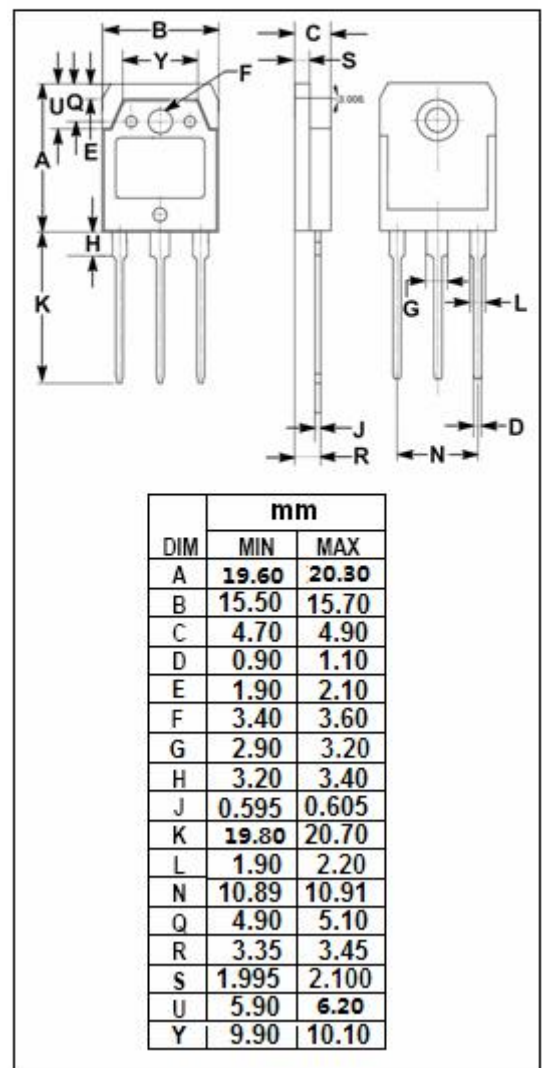
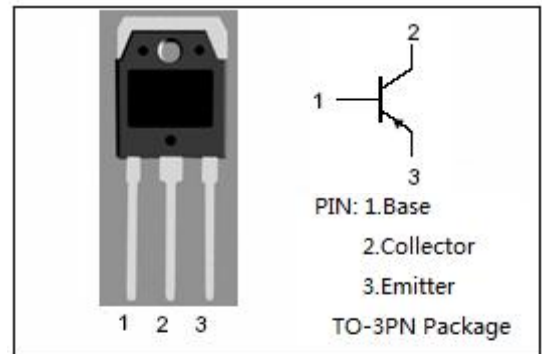
- High Collector Current:  $I_C = -20A$
- Low Collector Saturation Voltage  
:  $V_{CE(sat)} = -0.5V(\text{Max}) @ I_C = 8A$
- Complement to Type 2SD1213
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

- Designed for large current switching of relay drivers, high-speed inverters, converters applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	-60	V
$V_{CEO}$	Collector-Emitter Voltage	-30	V
$V_{EBO}$	Emitter-Base Voltage	-6	V
$I_C$	Collector Current-Continuous	-20	A
$I_{CM}$	Collector Current-Peak	-30	A
$P_C$	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	60	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



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**ELECTRICAL CHARACTERISTICS**

 T<sub>c</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> = -1mA ; I <sub>B</sub> = 0	-30			V
V <sub>(BR)CBO</sub>	Collector-Base breakdown voltage	I <sub>C</sub> =-1mA; I <sub>E</sub> = 0	-60			V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> = -1mA; I <sub>C</sub> = 0	-6			V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = -8.0A; I <sub>B</sub> = -0.4A			-0.5	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = -60V ; I <sub>E</sub> = 0			-100	μ A
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = -6V; I <sub>C</sub> = 0			-100	μ A
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = -1A ; V <sub>CE</sub> = -2V	70		280	
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = -10A ; V <sub>CE</sub> = -2V	30			
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>C</sub> =-1A ; V <sub>CE</sub> = -5V		120		MHz

**Switching Times**

t <sub>on</sub>	Turn-on Time	I <sub>C</sub> = -10A; I <sub>B1</sub> = -I <sub>B2</sub> = -2A,		300		ns
t <sub>stg</sub>	Storage Time			300		ns
t <sub>f</sub>	Fall Time			20		ns

**◆ h<sub>FE-1</sub> Classifications**

Q	R	S
70-140	100-200	140-280

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