

**isc Silicon PNP Power Transistor**

**2SB688**

**DESCRIPTION**

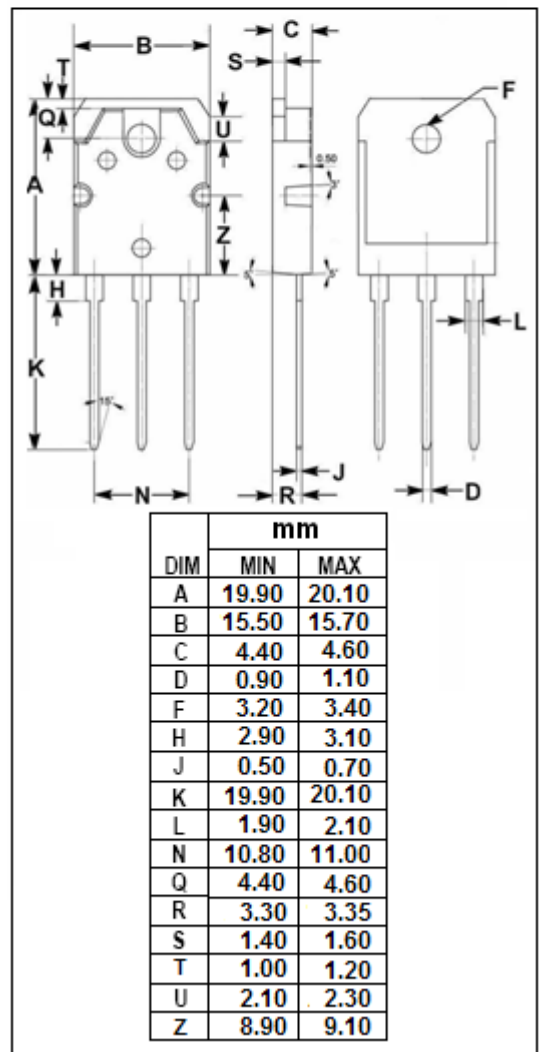
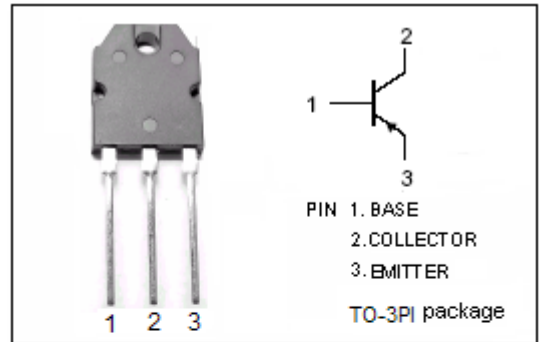
- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = -120V(\text{Min})$
- Good Linearity of  $h_{FE}$
- Complement to Type 2SD718

**APPLICATIONS**

- Audio frequency power amplifier applications
- Recommend for 45-50W audio frequency amplifier output stage applications

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	-120	V
$V_{CEO}$	Collector-Emitter Voltage	-120	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current-Continuous	-8	A
$I_B$	Base Current-Continuous	-0.8	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	80	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



**isc Silicon PNP Power Transistor****2SB688****ELECTRICAL CHARACTERISTICS** $T_C=25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = -50\text{mA}$ ; $I_B = 0$	-120			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -5.0\text{A}$ ; $I_B = -0.5\text{A}$			-2.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = -5\text{A}$ ; $V_{CE} = -5\text{V}$			-1.5	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = -120\text{V}$ ; $I_E = 0$			-10	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = -5\text{V}$ ; $I_C = 0$			-10	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$I_C = -1\text{A}$ ; $V_{CE} = -5\text{V}$	55		160	
$C_{OB}$	Output Capacitance	$I_E = 0$ ; $V_{CB} = -10\text{V}$ ; $f_{test} = 1.0\text{MHz}$		280		pF
$f_T$	Current-Gain—Bandwidth Product	$I_C = -1\text{A}$ ; $V_{CE} = -5\text{V}$		10		MHz

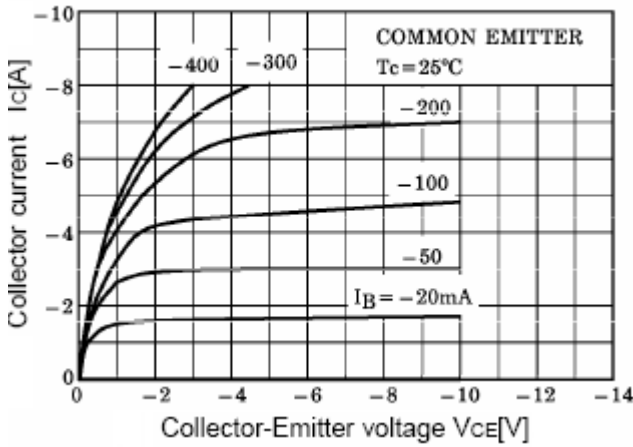
◆  **$h_{FE}$  Classifications**

R	O
55-110	80-160

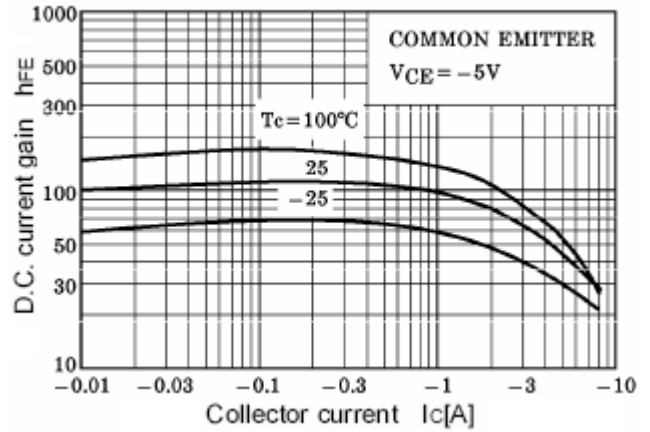
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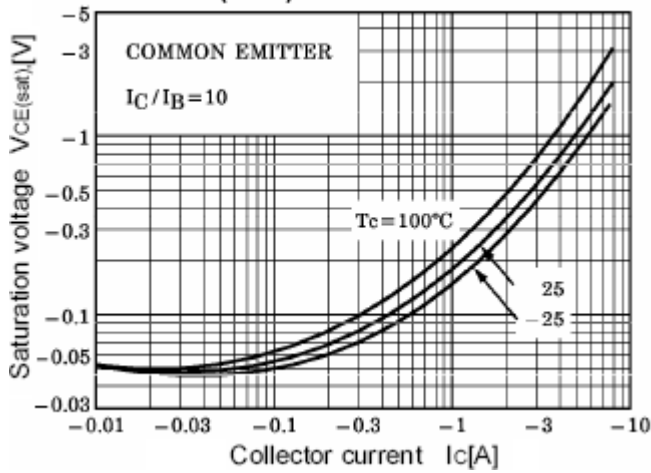
**I<sub>C</sub>-V<sub>CE</sub> Characteristics**



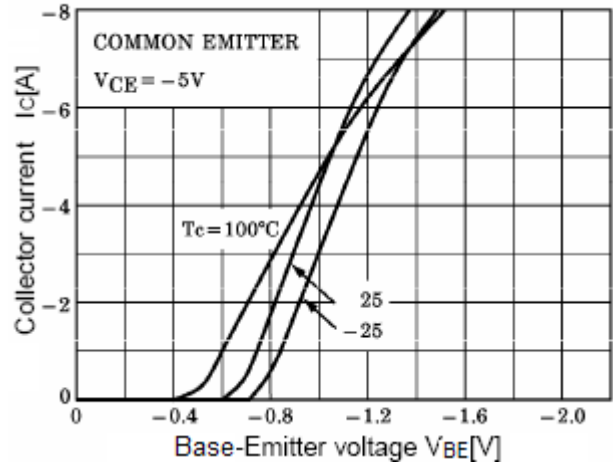
**h<sub>FE</sub>-I<sub>C</sub> Characteristics**



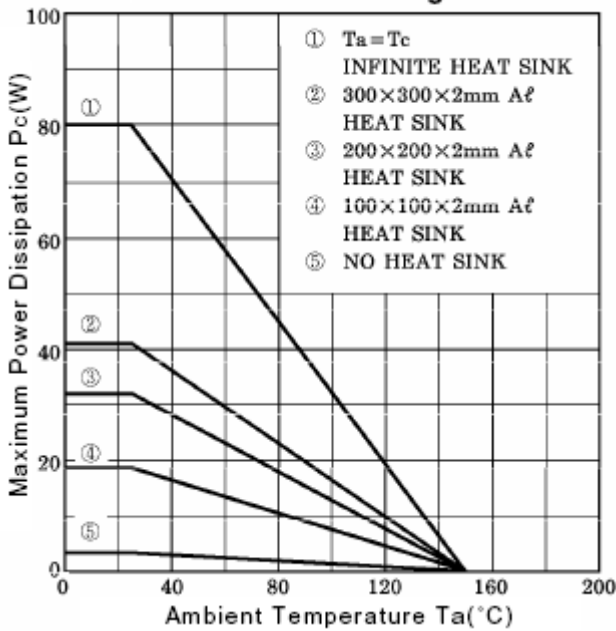
**V<sub>CE(sat)</sub>-I<sub>C</sub> Characteristics**



**I<sub>C</sub>-V<sub>BE</sub> Characteristics**



**Power Derating**



**Safe Operating Area**

