

**isc Silicon NPN Power Transistor**
**2SD1378**
**DESCRIPTION**

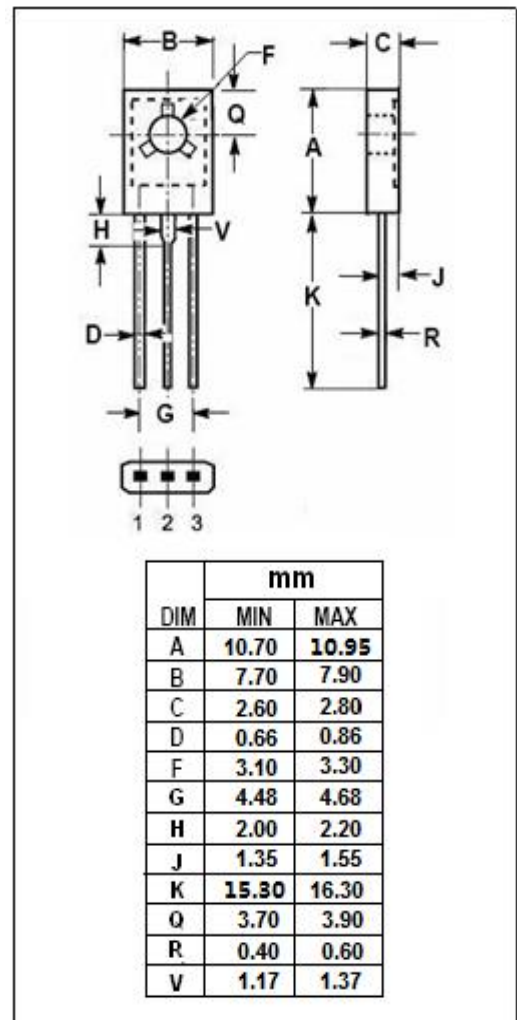
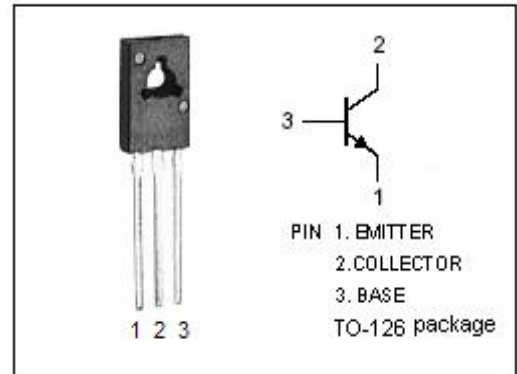
- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 80V(\text{Min})$
- Low Saturation Voltage -  
:  $V_{CE(sat)} = 0.4V(\text{Max}) @ I_C = 0.5A$
- Complement to Type 2SB1007
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

- Designed for low frequency power amplifier 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	80	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current-Continuous	0.7	A
$P_C$	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	1.2	W
	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	10	
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



## isc Silicon NPN Power Transistor

2SD1378

## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage	I <sub>C</sub> = 50 μA; I <sub>E</sub> = 0	80			V
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 2mA; I <sub>B</sub> = 0	80			V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> = 50 μA; I <sub>C</sub> = 0	5			V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 0.5A; I <sub>B</sub> = 50mA			0.4	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 50V; I <sub>E</sub> = 0			0.5	μA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 4V; I <sub>C</sub> = 0			0.5	μA
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = 0.1A; V <sub>CE</sub> = 3V	82		390	
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>E</sub> = 50mA; V <sub>CE</sub> = 10V		120		MHz
C <sub>OB</sub>	Output Capacitance	I <sub>E</sub> = 0; V <sub>CB</sub> = 10V, f <sub>test</sub> = 1MHz		10		pF

◆ h<sub>FE</sub> Classifications

P	Q	R
82-180	120-270	180-390

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