

**isc Silicon NPN Power Transistor**
**2SD1815**
**DESCRIPTION**

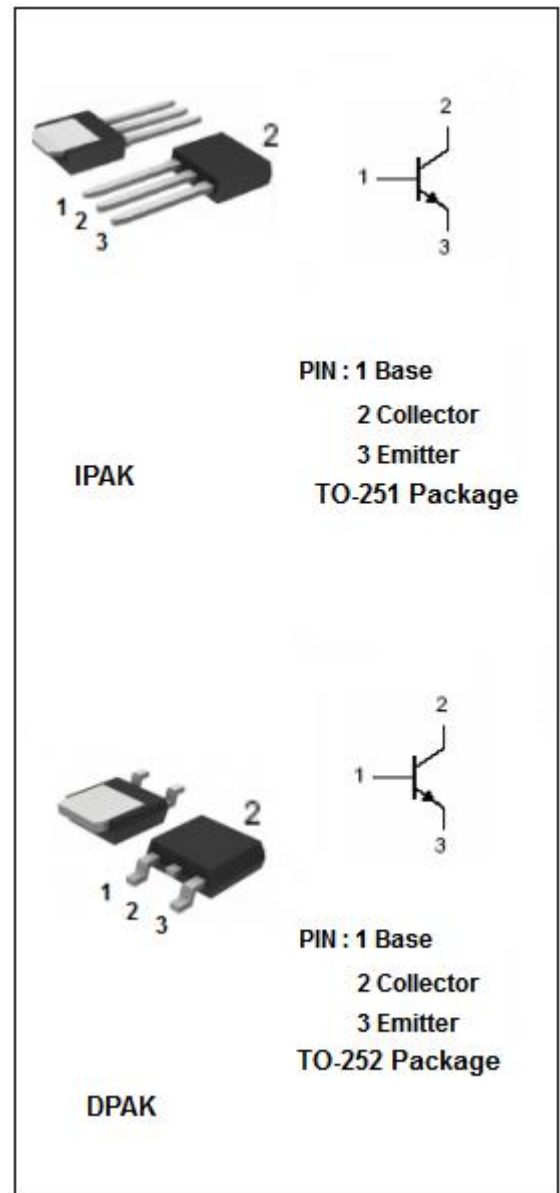
- Excellent linearity of  $h_{FE}$
- Small and slim package making it easy to make 2SD1815/2SB1215-used set smaller
- Low collector-to-emitter saturation voltage
- High  $f_T$
- Fast switching speed
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

- Relay drivers, High speed inverters, converters and other general high-current switching 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	100	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current-Continuous	3	A
$I_{CP}$	Collector Current-Pulse	6	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	20	W
	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	1.0	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



## isc Silicon NPN Power Transistor

## 2SD1815

## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 1.5A; I <sub>B</sub> = 150mA			0.4	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 1.5A; I <sub>B</sub> = 150mA			1.2	V
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage	I <sub>C</sub> = 10uA; I <sub>B</sub> = 0	120			V
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 1mA; I <sub>B</sub> = 0	100			V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> = 10uA; I <sub>C</sub> = 0	5			V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 100V; I <sub>E</sub> = 0			1	uA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 4V; I <sub>C</sub> = 0			1	uA
h <sub>FE1</sub>	DC Current Gain	I <sub>C</sub> = 0.5A; V <sub>CE</sub> = 5V	70		400	
h <sub>FE2</sub>	DC Current Gain	I <sub>C</sub> = 2A; V <sub>CE</sub> = 5V	40			
C <sub>OB</sub>	Output Capacitance	I <sub>E</sub> = 0; V <sub>CB</sub> = 10V; f= 1.0MHz		25		pF
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>C</sub> = 0.5A; V <sub>CE</sub> = 10V		180		MHz

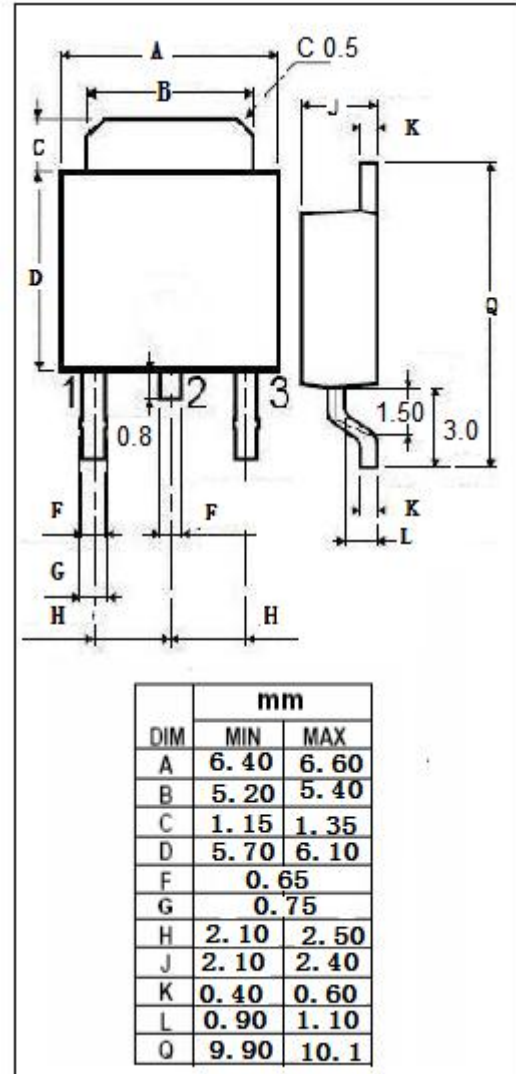
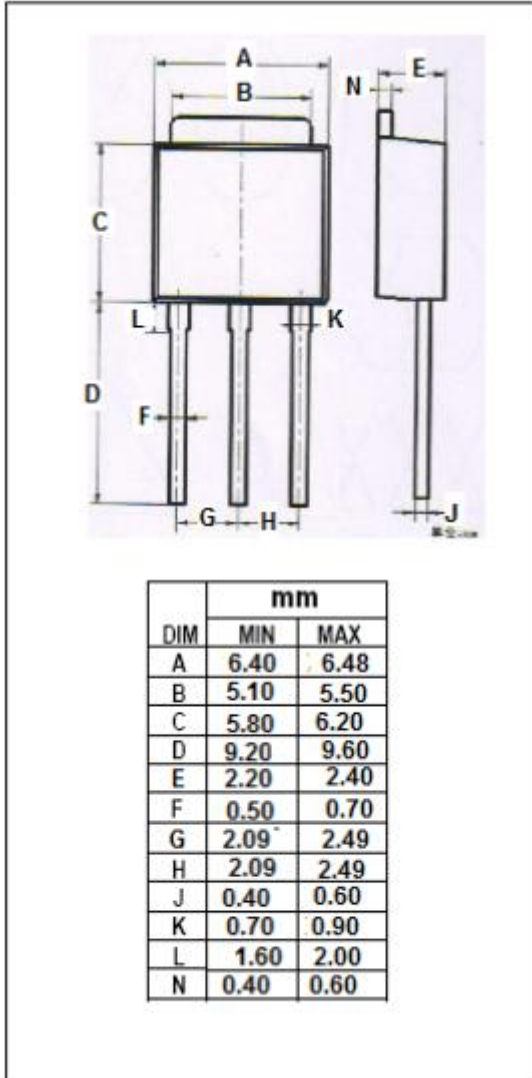
◆ h<sub>FE1</sub> Classifications

Q	R	S	T
70-140	100-200	140-280	200-400

isc Silicon NPN Power Transistor

2SD1815

Outline Drawing



**NOTICE:**

ISC reserves the rights to make changes of the content herein the datasheet at any time without notification. The information contained herein is presented only as a guide for the applications of our products.

ISC products are intended for usage in general electronic equipment. The products are not designed for use in equipment which require specialized quality and/or reliability, or in equipment which could have applications in hazardous environments, aerospace industry, or medical field. Please contact us if you intend our products to be used in these special applications.

ISC makes no warranty or guarantee regarding the suitability of its products for any particular purpose, nor does ISC assume any liability arising from the application or use of any products, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages.