

isc Silicon NPN Power Transistor
2SD1816
DESCRIPTION

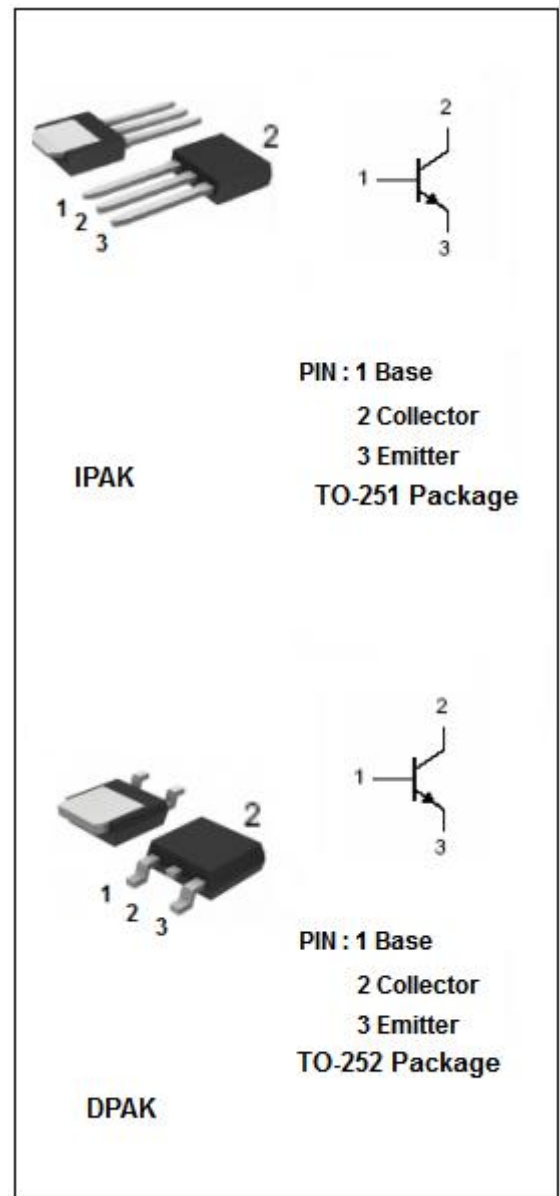
- Excellent linearity of h_{FE}
- Small and slim package facilitating compactness of sets
- Low collector-to-emitter saturation voltage
- High f_T
- Fast switching speed
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

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	4	A
I_{CP}	Collector Current-Pulse	8	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	$^\circ\text{C}$



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ELECTRICAL CHARACTERISTICS

 T_c=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 2A; I _B = 200mA			0.4	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 2A; I _B = 200mA			1.2	V
V _{(BR)CBO}	Collector-Base Breakdown Voltage	I _C = 10uA; I _B = 0	120			V
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _C = 1mA; I _B = 0	100			V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	I _E = 10uA; I _C = 0	5			V
I _{CBO}	Collector Cutoff Current	V _{CB} = 100V; I _E = 0			1	uA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 4V; I _C = 0			1	uA
h _{FE1}	DC Current Gain	I _C = 0.5A; V _{CE} = 5V	70		400	
h _{FE2}	DC Current Gain	I _C = 3A; V _{CE} = 5V	40			
C _{OB}	Output Capacitance	I _E = 0; V _{CB} = 10V; f= 1.0MHz		40		pF
f _T	Current-Gain—Bandwidth Product	I _C = 0.5A; V _{CE} = 10V		180		MHz

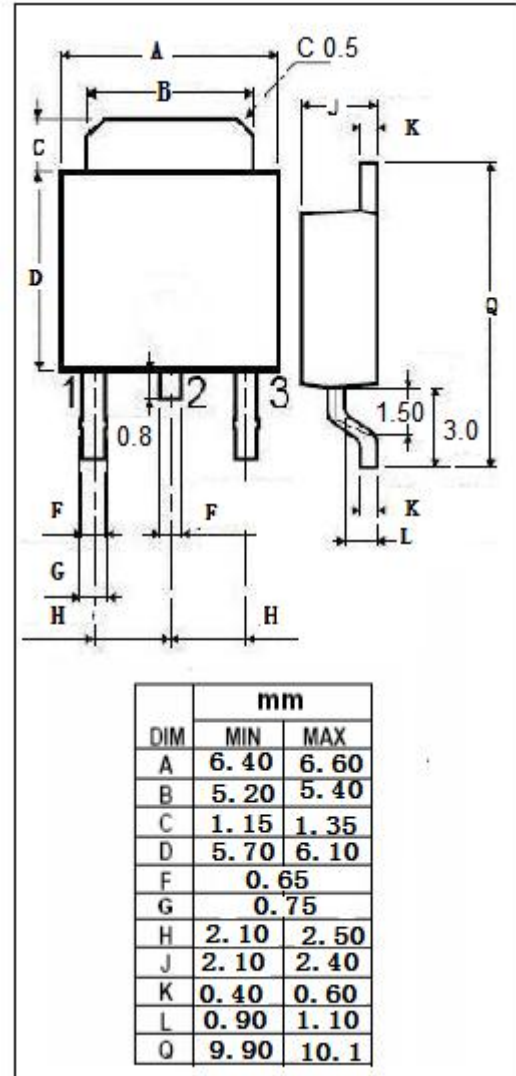
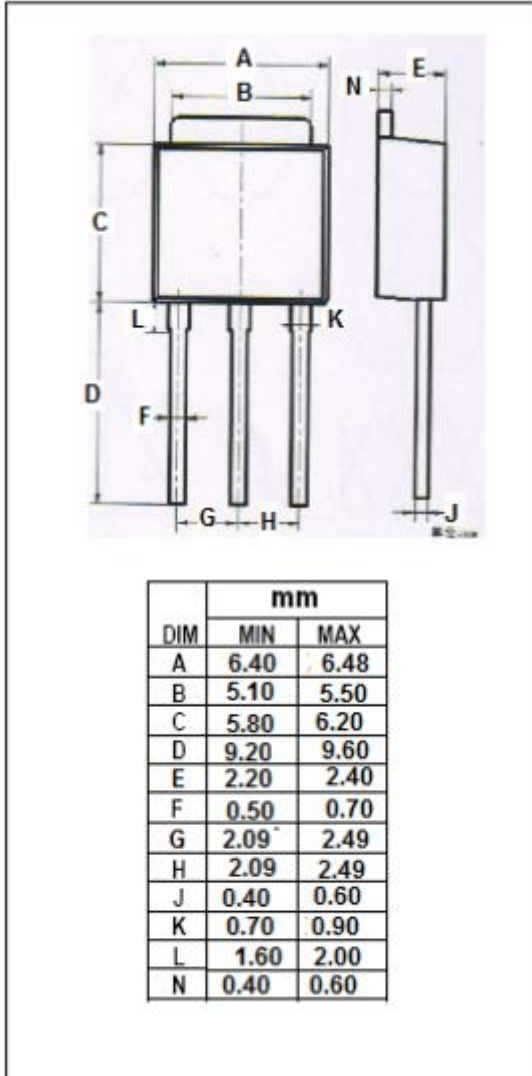
◆ h_{FE1} Classifications

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

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Outline Drawing



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