

isc Silicon NPN Power Transistor

2SD1594

DESCRIPTION

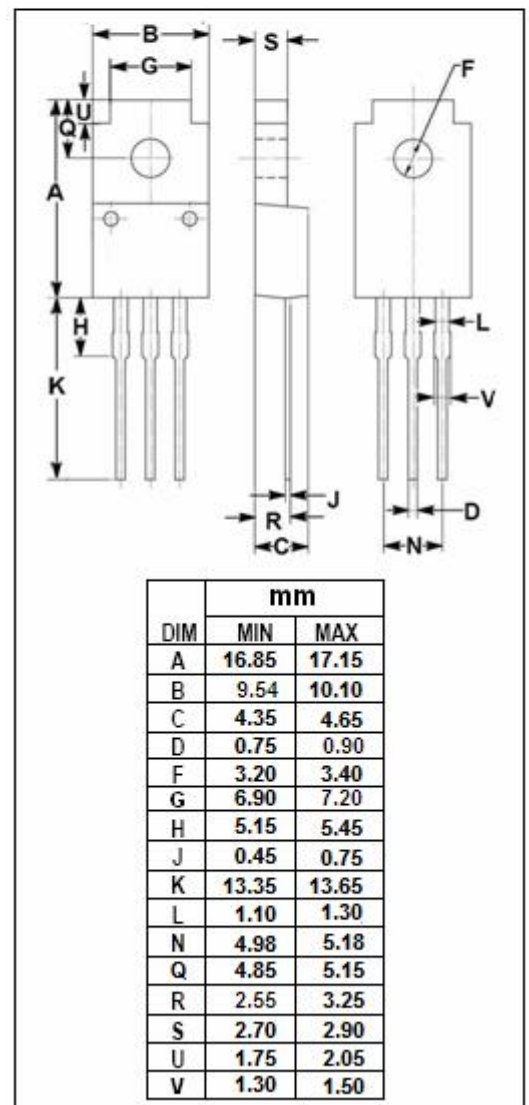
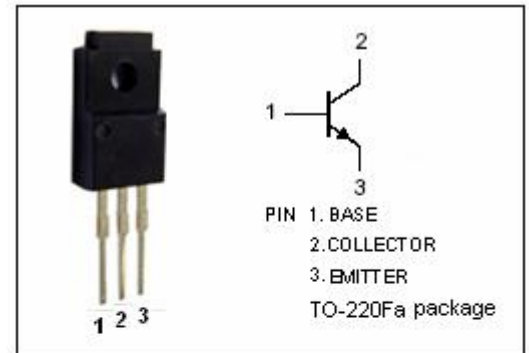
- Good Linearity of h_{FE}
- Collector-Emitter Breakdown Voltage
: $V_{(BR)CEO} = 100V(\text{Min})$
- Low Collector Saturation Voltage
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for high speed switching industrial use.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	150	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	7	A
I_{CM}	Collector Current-Peak	15	A
I_B	Base Current-Continuous	3.5	A
P_C	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	1.5	W
	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	40	
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(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 50mA; I _B = 0.5A, L= 1mH	100			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 5A; I _B = 0.5A			0.6	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 5A; I _B = 0.5A			1.5	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 100V; I _E = 0			10	μ A
I _{CER}	Collector Cutoff Current	V _{CE} = 100V; R _{BE} = 51 Ω @T _C = 125°C			1	mA
I _{CEx}	Collector Cutoff Current	V _{CE} =100V; V _{BE(off)} = 1.5V V _{CE} =100V; V _{BE(off)} =1.5V@T _C = 125°C			10 1	μ A mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C =0			10	μ A
h _{FE-1}	DC Current Gain	I _C = 0.5A ; V _{CE} = 5V	40			
h _{FE-2}	DC Current Gain	I _C = 3A ; V _{CE} = 5V	40		240	
h _{FE-3}	DC Current Gain	I _C = 5A ; V _{CE} = 5V	20			

Switching Times

t _{on}	Turn-on Time	I _C = 5A , R _L = 10 Ω , I _{B1} = I _{B2} = 0.5A, V _{CC} = 50V			0.5	μ s
t _{stg}	Storage Time				0.5	μ s
t _f	Fall Time				1.5	μ s

◆ h_{FE-2} Classifications

R	O	Y
40-80	70-140	120-240

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