

isc Silicon NPN Power Transistor

2SD1411

DESCRIPTION

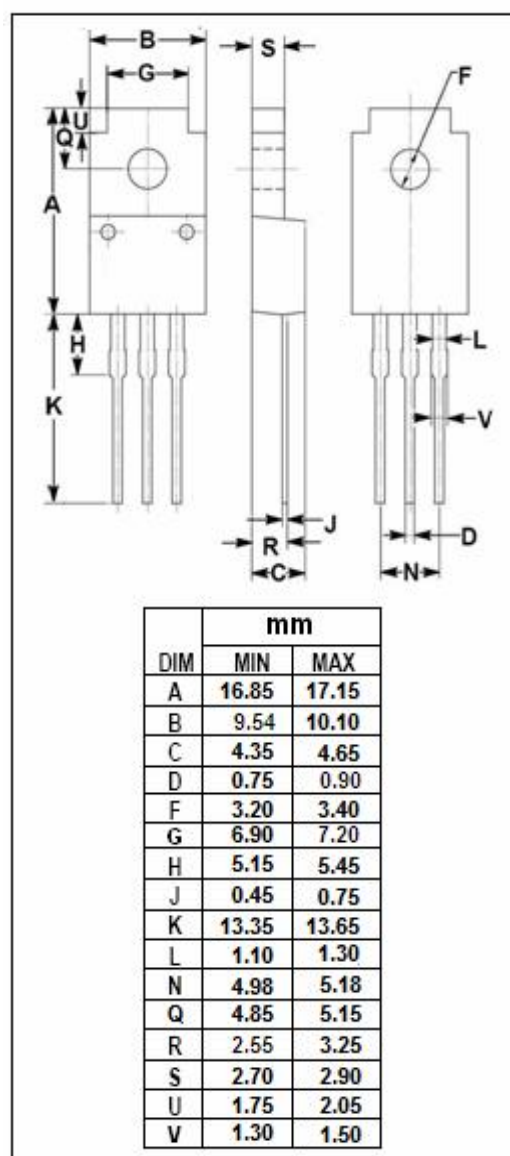
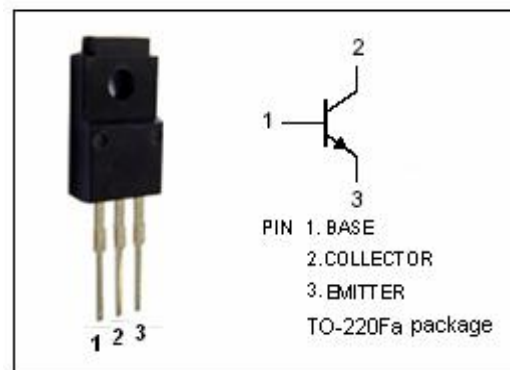
- Low Collector Saturation Voltage
: $V_{CE(sat)} = 0.5V(\text{Max}) @ I_C = 4A$
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 80V (\text{Min})$
- Complement to Type 2SB1018
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- High current switching applications.
- Power amplifier applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	7	A
I_B	Base Current-Continuous	1	A
P_C	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	2	W
	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	30	
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 _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _C = 30mA; I _B = 0	80			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 4A; I _B = 0.4A			0.5	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 4A; I _B = 0.4A			1.4	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 100V; I _E = 0			5	μA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C = 0			5	μA
h _{FE-1}	DC Current Gain	I _C = 1A; V _{CE} = 1V	70		240	
h _{FE-2}	DC Current Gain	I _C = 4A; V _{CE} = 1V	30			
C _{OB}	Output Capacitance	I _E = 0; V _{CB} = 10V, f _{test} = 1MHz		250		pF
f _T	Current-Gain—Bandwidth Product	I _C = 1A; V _{CE} = 4V		10		MHz

Switching Times

t _{on}	Turn-on Time	I _{B1} = I _{B2} = 0.3A; R _L = 10 Ω; V _{CC} = 30V		0.4		μs
t _{stg}	Storage Time			2.5		μs
t _f	Fall Time			0.5		μs

◆ h_{FE} classifications

O	Y
70-140	120-240

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