

isc Silicon NPN Power Transistor
2SD1406
DESCRIPTION

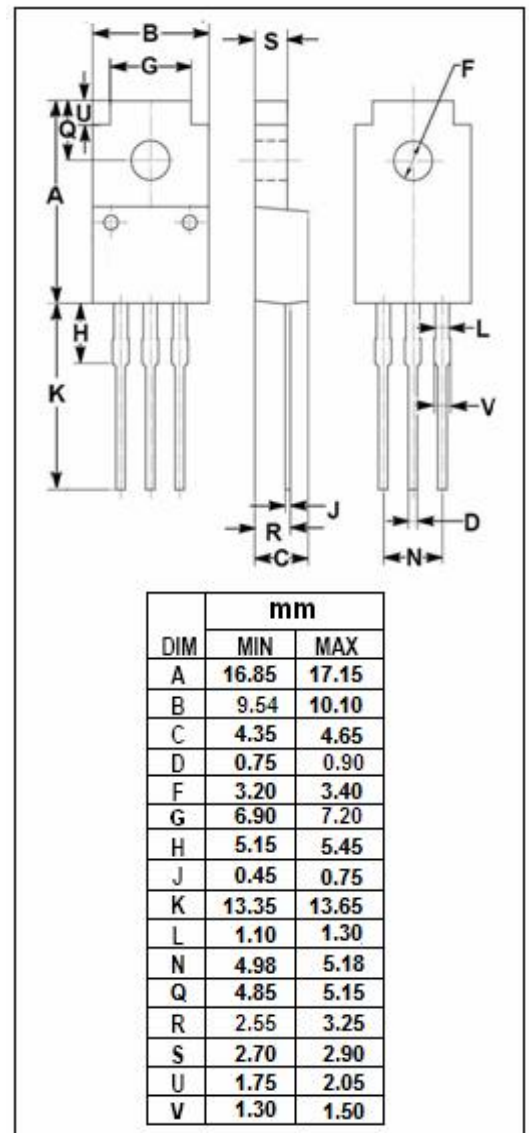
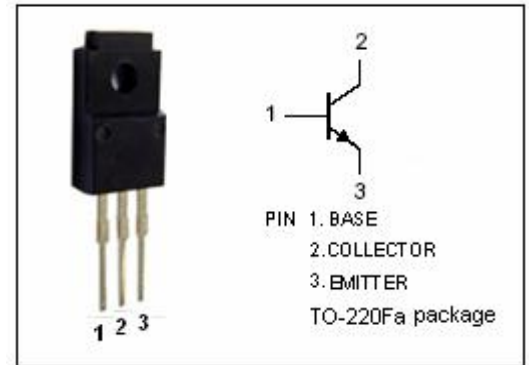
- Low Collector Saturation Voltage
: $V_{CE(sat)} = 1.0V(\text{Max}) @ I_C = 3A$
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 60V (\text{Min})$
- Complement to Type 2SB1015
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for audio frequency power amplifier applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	3	A
I_B	Base Current-Continuous	0.5	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	25	W
	Collector Power Dissipation @ $T_a = 25^\circ\text{C}$	2	
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	60			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 3A; I _B = 0.3A			1.0	V
V _{BE(on)}	Base-Emitter On Voltage	I _C = 0.5A; V _{CE} = 5V			1.0	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 60V; I _E = 0			100	μ A
I _{EBO}	Emitter Cutoff Current	V _{EB} = 7V; I _C = 0			100	μ A
h _{FE}	DC Current Gain	I _C = 0.5A; V _{CE} = 5V	60		300	
C _{OB}	Output Capacitance	I _E = 0; V _{CB} = 10V, f _{test} = 1MHz		70		pF
f _T	Current-Gain—Bandwidth Product	I _C = 0.5A ; V _{CE} = 5V		3		MHz

Switching times

t _{on}	Turn-on Time	I _{B1} = I _{B2} = 0.2A; V _{CC} = 30V; R _L = 15 Ω ; P _W = 20 μ s; Duty Cycle ≤ 1%		0.8		μ s
t _{stg}	Storage Time			1.5		μ s
t _f	Fall Time			0.8		μ s

◆ h_{FE} classifications

O	Y	GR
60-120	100-200	150-300

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