

SPTECH Silicon NPN Power Transistor

2SD1406

DESCRIPTION

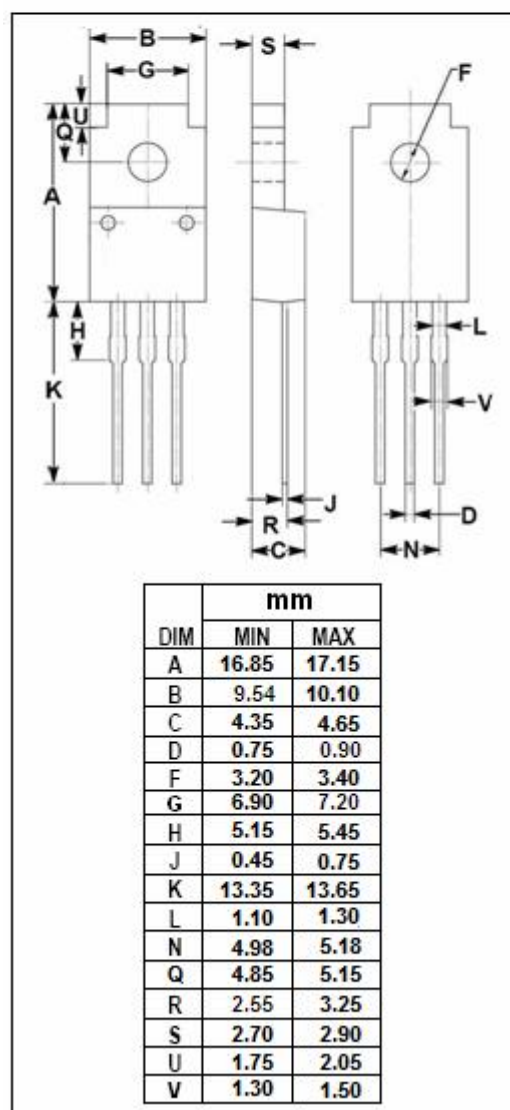
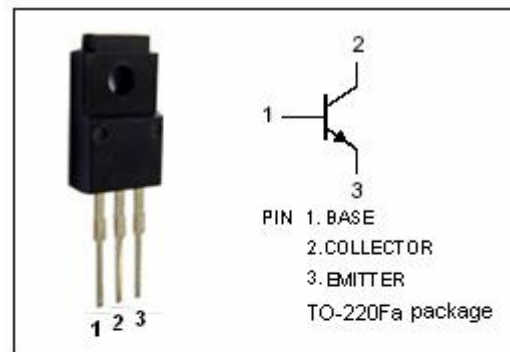
- Low Collector Saturation Voltage
: $V_{CE(sat)} = 1.0V(\text{Max}) @ I_C = 3A$
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 60V (\text{Min})$
- Complement to Type 2SB1015

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

 $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=30\text{mA}$; $I_B=0$	60			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=3\text{A}$; $I_B=0.3\text{A}$			1.0	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=0.5\text{A}$; $V_{CE}=5\text{V}$			1.0	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=60\text{V}$; $I_E=0$			100	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=7\text{V}$; $I_C=0$			100	μA
h_{FE}	DC Current Gain	$I_C=0.5\text{A}$; $V_{CE}=5\text{V}$	60		300	
C_{OB}	Output Capacitance	$I_E=0$; $V_{CB}=10\text{V}$, $f_{test}=1\text{MHz}$		70		pF
f_T	Current-Gain—Bandwidth Product	$I_C=0.5\text{A}$; $V_{CE}=5\text{V}$		3		MHz

Switching times

t_{on}	Turn-on Time	$I_{B1}=I_{B2}=0.2\text{A}$; $V_{CC}=30\text{V}$; $R_L=15\Omega$; $P_W=20\mu\text{s}$; Duty Cycle $\leq 1\%$		0.8		μs
t_{stg}	Storage Time			1.5		μs
t_f	Fall Time			0.8		μs

◆ h_{FE} classifications

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