

SPTECH Silicon NPN Power Transistor**2N3446****DESCRIPTION**

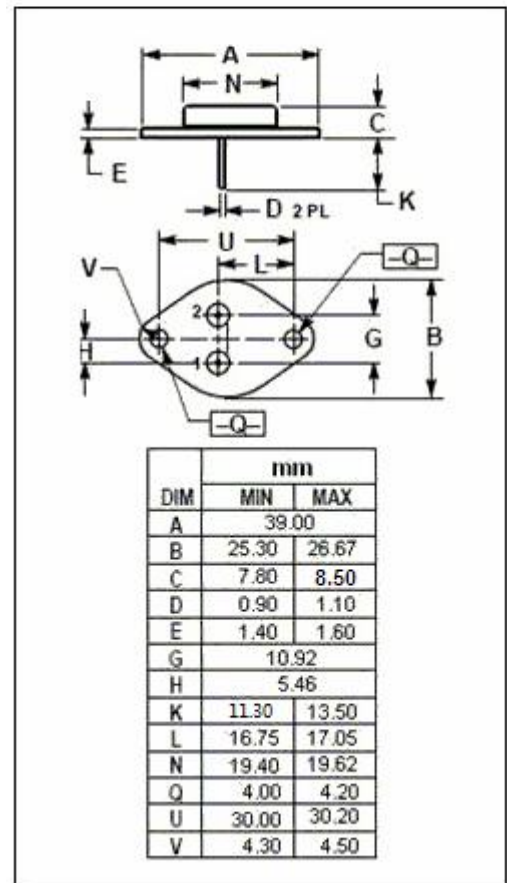
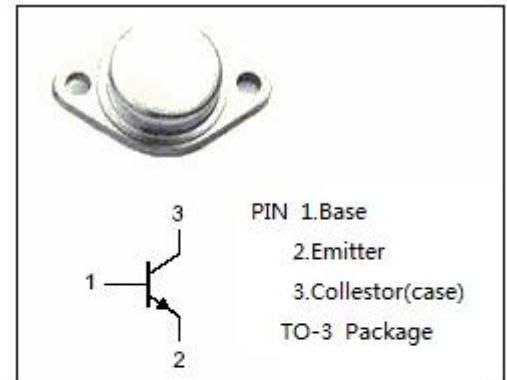
- Excellent Safe Operating Area
- DC Current Gain- h_{FE} = 20-60@ I_C = 3A
- Collector-Emitter Saturation Voltage-
: $V_{CE(sat)}$ = 1.5V(Max)@ I_C = 3A
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)}$ = 80V(Min)

APPLICATIONS

- Designed for switching and 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	10	V
I_C	Collector Current-Continuous	7.5	A
I_B	Base Current-Continuous	4	A
P_C	Collector Power Dissipation@ $T_C=25^\circ\text{C}$	115	W
T_J	Junction Temperature	200	$^\circ\text{C}$
T_{stg}	Storage Temperature	-65~200	$^\circ\text{C}$



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2N3446

ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=50\text{mA}; I_B=0$	80		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=1\text{mA}; I_E=0$	100		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=3\text{A}; I_B=0.3\text{A}$		1.5	V
$V_{BE(sat)}$	Base -Emitter Saturation Voltage	$I_C=3\text{A}; I_B=0.3\text{A}$		1.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=3\text{A}; V_{CE}=5\text{V}$		1.5	V
I_{CEO}	Collector Cutoff Current	$V_{CE}=60\text{V}; I_B=0$		1.0	mA
I_{CEX}	Collector Cutoff Current	$V_{CE}=80\text{V}; V_{BE}=-1\text{V}$ $V_{CE}=80\text{V}; V_{BE}=-1\text{V}; T_C=150^{\circ}\text{C}$		0.1 1.0	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=10\text{V}; I_C=0$		0.25	mA
h_{FE-1}	DC Current Gain	$I_C=0.5\text{A}; V_{CE}=5\text{V}$	20		
h_{FE-2}	DC Current Gain	$I_C=3\text{A}; V_{CE}=5\text{V}$	20	60	
C_{OB}	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f=0.1\text{MHz}$		400	pF

Switching Times

t_{on}	Turn-On Time	$I_C=5\text{A}; I_{B1}=-I_{B2}=0.5\text{A};$ $V_{CC}=25\text{V}; R_L=5\Omega;$		0.35	μs
t_{stg}	Storage Time			2.0	μs
t_f	Fall Time			0.35	μs