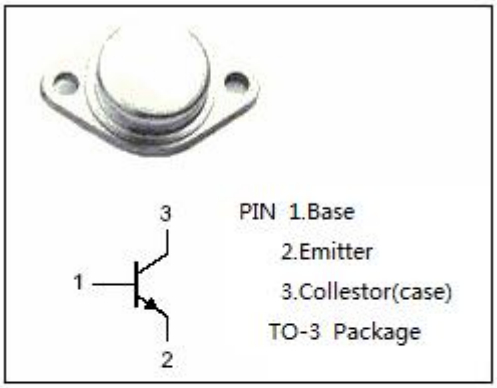
SPTECH Silicon NPN Power Transistor

DESCRIPTION

- Excellent Safe Operating Area
- High DC Current Gain-h_{FE}=15(Min)@I_C = 10A
- Low Saturation Voltage-
  : $V_{CE(sat)}$= 1.4V(Max)@ I_C = 10A



APPLICATIONS

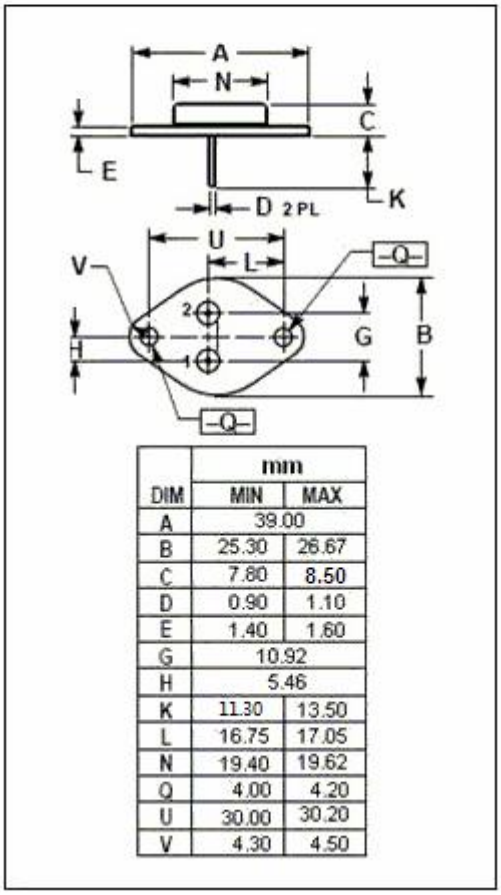
- Designed for linear amplifiers, series pass regulators, and inductive switching applications.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	100	V
V_{CEX}	Collector-Emitter Voltage	80	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	20	A
I_{CM}	Collector Current-Peak	30	A
I_B	Base Current-Continuous	5	A
I_{BM}	Base Current-Peak	15	A
P_C	Collector Power Dissipation @T_C=25℃	150	W
T_J	Junction Temperature	200	℃
T_{stg}	Storage Temperature	-65~200	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	1.17	℃/W



DIM	mm MIN	MAX
A	39.00	
B	25.30	26.67
C	7.80	8.50
D	0.90	1.10
E	1.40	1.60
G	10.92	
H	5.46	
K	11.30	13.50
L	16.75	17.05
N	19.40	19.62
Q	4.00	4.20
U	30.00	30.20
V	4.30	4.50

SPTECH Silicon NPN Power Transistor

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 50mA ; I_B= 0	60		V
$V_{CEX(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 200mA ; $V_{BE(off)}$= 1.5V; R_{BE}=100Ω	80		V
$V_{CER(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 200mA ; R_{BE}= 100Ω	70		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	I_C= 10A; I_B= 1A		1.4	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	I_C= 20A; I_B= 4A		4.0	V
$V_{BE(on)}$	Base-Emitter On Voltage	I_C= 10A ; V_{CE}= 4V		2.2	V
I_{CEO}	Collector Cutoff Current	V_{CE}= 50V; I_B= 0		10	mA
I_{CEV}	Collector Cutoff Current	V_{CE}= 100V; $V_{BE(off)}$= 1.5V V_{CE}= 45V; $V_{BE(off)}$= 1.5V,T_C=150℃		5.0 10	mA
I_{CBO}	Collector Cutoff Current	V_{CB}= 100V; I_E= 0		5.0	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 7V; I_C=0		5.0	mA
h_{FE-1}	DC Current Gain	I_C= 10A ; V_{CE}= 4V	15	60	
h_{FE-2}	DC Current Gain	I_C= 20A ; V_{CE}= 4V	5		
f_T	Current-Gain—Bandwidth Product	I_C= 1A ; V_{CE}= 4V ;f_{test}= 50kHz	0.2		MHz
$I_{s/b}$	Second Breakdown Collector Current with Base Forward Biased	V_{CE}= 60V,t= 1.0s,Nonrepetitive	2.5		A