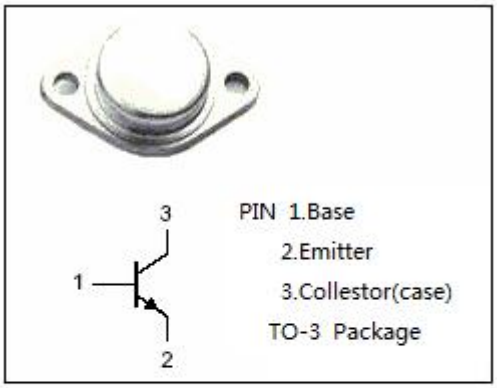
SPTECH Silicon NPN Power Transistor

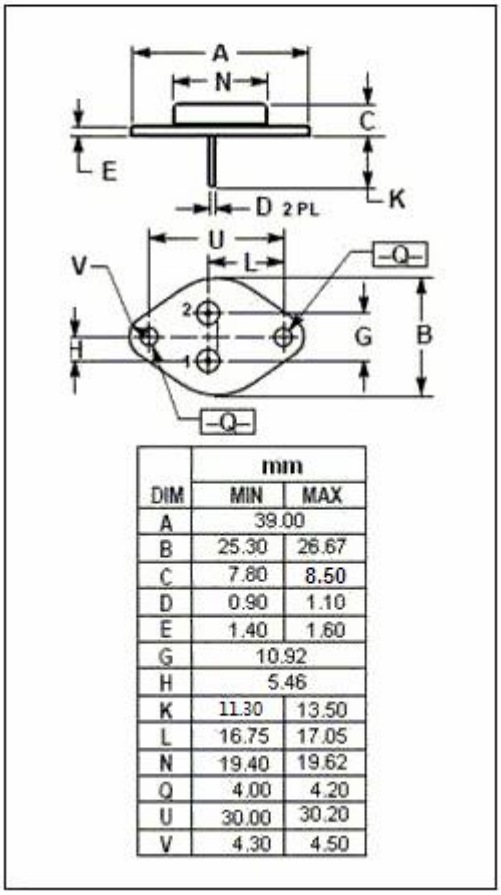
DESCRIPTION

- 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.



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

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

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℃	115	W
T_J	Junction Temperature	200	℃
T_{stg}	Storage Temperature	-65~200	℃

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

Switching Times

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