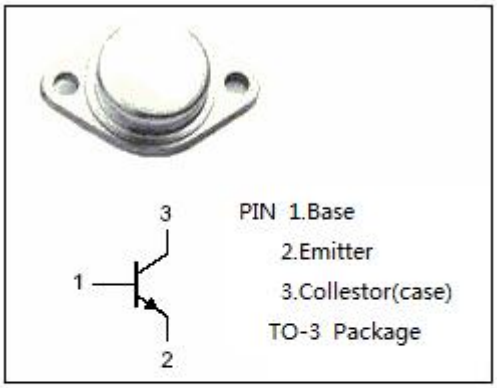
SPTECH Silicon NPN Power Transistor

DESCRIPTION

- Excellent Safe Operating Area
- DC Current Gain-h_{FE}=20-70@I_C = 4A
- Collector-Emitter Saturation Voltage-
  : $V_{CE(sat)}$= 1.1 V(Max)@ I_C = 4A
- Complement to Type MJ2955A



APPLICATIONS

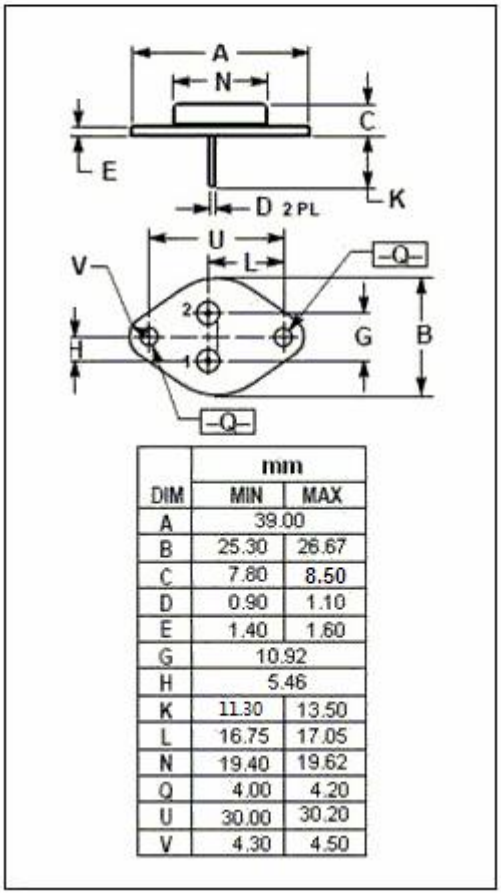
- Designed for high power audio, stepping motor and other linear applications. It can also be used in power switching circuits such as relay or solenoid drivers,DC-DC converters, inverters, or for inductive loads.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	100	V
V_{CEV}	Collector-Emitter Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	15	A
I_B	Base Current	7	A
P_C	Collector Power Dissipation@T_C=25℃	115	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	1.52	℃/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 Transistors

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
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	I_C= 4A; I_B= 0.4A		1.1	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	I_C= 10A; I_B= 3.3A		3.0	V
$V_{CE(sat)-3}$	Collector-Emitter Saturation Voltage	I_C= 15A; I_B= 7A		5.0	V
$V_{BE(on)}$	Base-Emitter On Voltage	I_C= 4A ; V_{CE}= 4V		1.8	V
I_{CEO}	Collector Cutoff Current	V_{CE}= 30V; I_B= 0		0.7	mA
I_{CEX}	Collector Cutoff Current	V_{CE}= 100V; $V_{BE(off)}$= 1.5V V_{CE}= 100V; $V_{BE(off)}$= 1.5V,T_C=150℃		5.0 30	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 7.0V; I_C= 0		5.0	mA
h_{FE-1}	DC Current Gain	I_C= 4A; V_{CE}= 2V	10	70	
h_{FE-2}	DC Current Gain	I_C= 4A; V_{CE}= 4V	20	70	
h_{FE-3}	DC Current Gain	I_C= 10A; V_{CE}= 4V	5		
$I_{s/b}$	Second Breakdown Collector Current with Base Forward Biased	V_{CE}= 60V; t= 0.5s,Nonrepetitive	1.95		A
C_{OB}	Output Capacitance	I_E= 0; V_{CB}= 10V; f= 1.0MHz		600	pF
f_T	Current Gain-Bandwidth Product	I_C= 1A; V_{CE}= 4V; f= 1.0MHz	0.8		MHz

Switching Times

t_d	Delay Time	I_C= 4A; V_{CC}= 30V; I_{B1}= -I_{B2}= 0.4A, t_p= 25 μs; Duty Cycle≤ 2%		0.5	μs
t_r	Rise Time			4.0	μs
t_{stg}	Storage Time			3.0	μs
t_f	Fall Time			6.0	μs