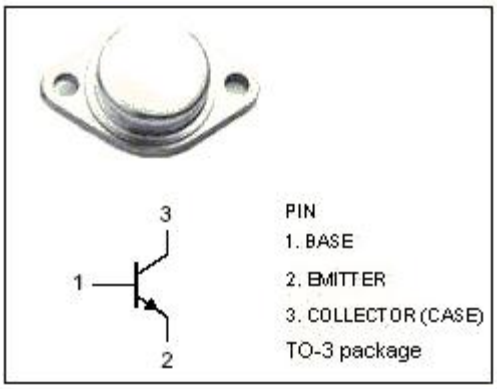
SPTECH Silicon NPN Power Transistor

DESCRIPTION

- Excellent Safe Operating Area
- DC Current Gain-
  : h_{FE}= 20-70@I_C = 4A,V_{CE}= 4V
- Collector-Emitter Saturation Voltage-
  : $V_{CE(sat)}$= 1.1 V(Max)@ I_C = 4A
- Complement to the PNP MJ15016

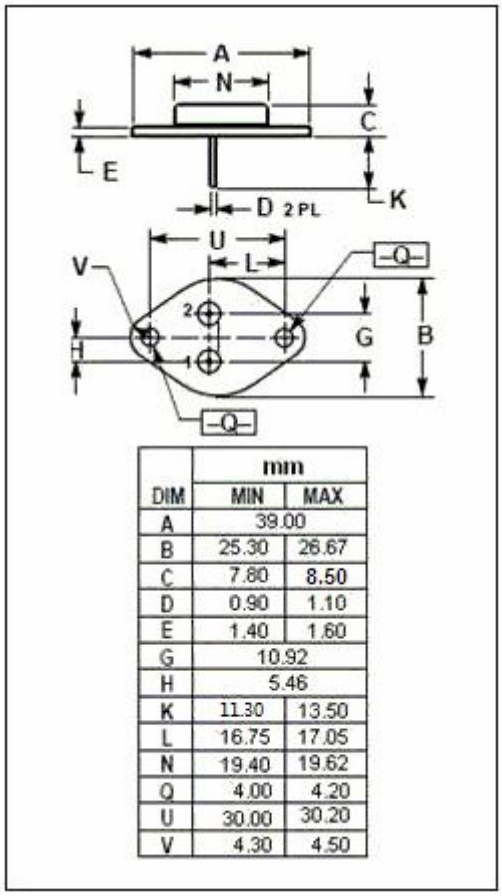


APPLICATIONS

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

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	200	V
V_{CEV}	Collector-Emitter Voltage Base Reversed Biased	200	V
V_{CEO}	Collector-Emitter Voltage	120	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	15	A
I_B	Base Current	7	A
P_D	Total Power Dissipation@T_C=25℃	180	W
T_j	Junction Temperature	200	℃
T_{stg}	Storage Temperature	-65~200	℃



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

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	0.98	℃/W

SPTECH Silicon NPN Power Transistor

ELECTRICAL CHARACTERISTICS

Tj=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 50mA ;I_B= 0	120		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= 7.0A		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}= 60V; $V_{BE(off)}$= 0		0.1	mA
I_{CBO}	Collector Cutoff Current	V_{CB}= 200;I_E= 0 V_{CB}= 200;I_E= 0V;T_C=150℃		1 5	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 7V; I_C= 0		0.2	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= 0.5 s,Nonrepetitive	3		A
C_{OB}	Output Capacitance	I_E= 0 ; V_{CB}= 10V; f_{test}= 1.0MHz	60	600	pF
f_T	Current-Gain—Bandwidth Product	I_C= 1A ; V_{CE}= 4V; f_{test}= 1.0MHz	0.8		MHz