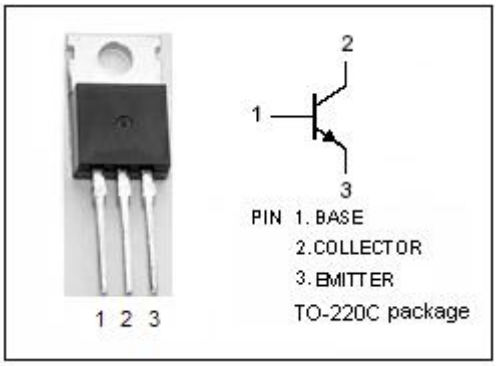
SPTECH Silicon NPN Power Transistor

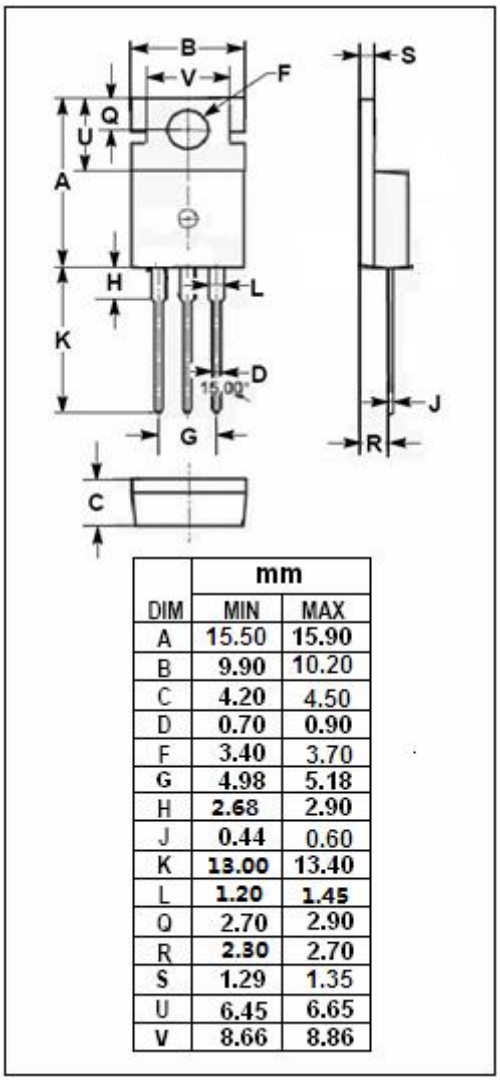
DESCRIPTION

- Collector-Emitter Sustaining Voltage-
  : $V_{CEO(SUS)}$= 400V(Min)
- Collector-Emitter Saturation Voltage-
  : $V_{CE(sat)}$= 1.0V(Max)@ I_C= 3A, I_B= 0.6A
- Fast Switching Speed



APPLICATIONS

- Designed for use in high-voltage, high-speed switching in Inductive circuit , they are particularly suited for 115 and 220V switchmode applications such as switching regulators, inverters,DC-DC and converter.



DIM	mm MIN	MAX
A	15.50	15.90
B	9.90	10.20
C	4.20	4.50
D	0.70	0.90
F	3.40	3.70
G	4.98	5.18
H	2.68	2.90
J	0.44	0.60
K	13.00	13.40
L	1.20	1.45
Q	2.70	2.90
R	2.30	2.70
S	1.29	1.35
U	6.45	6.65
V	8.66	8.86

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	500	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	7.0	V
I_C	Collector Current-Continuous	7.0	A
I_{CM}	Collector Current-Peak	15	A
I_B	Base Current-Continuous	3.5	A
P_C	Total Power Dissipation @ T_C=25℃	40	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-55~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance, Junction to Case	3.125	℃/W

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	400		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 3A; I_B= 0.6A		1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 3A; I_B= 0.6A		1.2	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 400V ; I_E=0		10	μA
I_{CEX}	Collector Cutoff Current	V_{CE}= 400V; $V_{BE(off)}$= -1.5V V_{CE}= 400V; $V_{BE(off)}$= -1.5V,T_a=125℃		10 5.0	μA mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 5V; I_C= 0		10	μA
h_{FE-1}	DC Current Gain	I_C= 0.1A ; V_{CE}= 5V	20	80	
h_{FE-2}	DC Current Gain	I_C= 1A ; V_{CE}= 5V	20	80	
h_{FE-3}	DC Current Gain	I_C= 3A ; V_{CE}= 5V	10		
Switching times					
t_{on}	Turn-on Time	I_C= 3A ,R_L= 50Ω , I_{B1}= -I_{B2}= 0.6A,V_{CC}≈ 150V		1.0	μs
t_{stg}	Storage Time			2.5	μs
t_f	Fall Time			1.0	μs

◆ **h_{FE-2} Classifications**

M	L	K
20-40	30-60	40-80