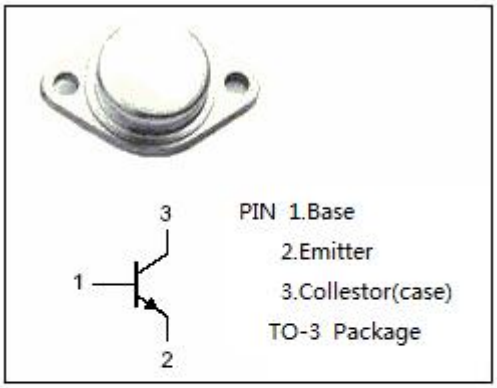
SPTECH Silicon NPN Power Transistor

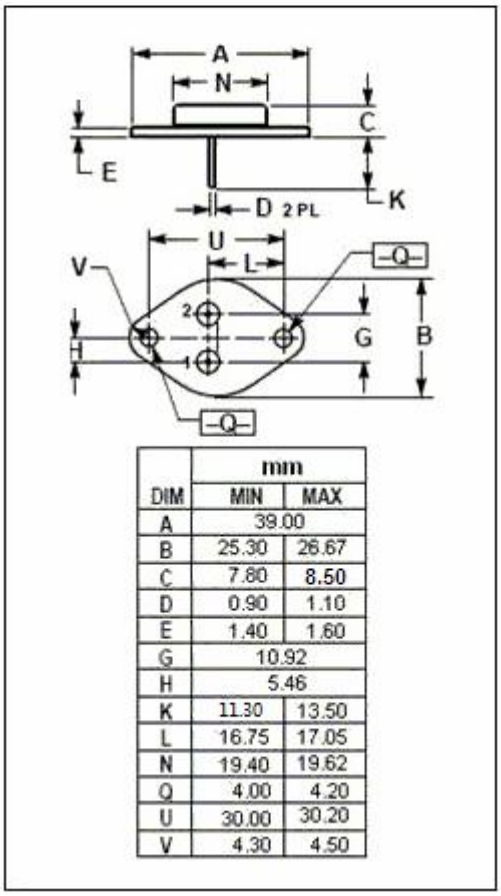
DESCRIPTION

- Excellent Safe Operating Area
- High Voltage,High Speed
- Low Saturation Voltage



APPLICATIONS

- Designed for high-voltage ,high-speed, power switching in inductive circuits where fall time is critical. They are particularly suited for 115 and 220 volt line operated switch-mode applications such as:
- Switching regulators
- PWM inverters and motor controls
- Solenoid and relay drivers
- Deflection circuits



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_{CEV}	Collector-Emitter Voltage	850	V
$V_{CEO(SUS)}$	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	9	V
I_C	Collector Current-Continuous	8	A
I_{CM}	Collector Current-Peak	16	A
P_C	Collector Power Dissipation@T_C=25℃	125	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-65~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	1.4	℃/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
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	I_C= 5A; I_B= 1.0A		1.5	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	I_C= 8A; I_B= 2.0A		5.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 5A; I_B= 1.0A		1.6	V
I_{EBO}	Emitter Cutoff Current	V_{EB}= 9V; I_C= 0		1.0	mA
h_{FE-1}	DC Current Gain	I_C= 2.5A; V_{CE}= 3V	12	60	
h_{FE-2}	DC Current Gain	I_C= 5A; V_{CE}= 3V	7	35	
f_T	Current Gain-Bandwidth Product	I_C= 0.3A ; V_{CE}= 10V; f_{test}=1.0MHz	6.0	35	MHz
Switching times-Resistive Load					
t_d	Delay Time	I_C= 5A , V_{CC}= 250V, I_{B1}= -I_{B2}= 1A, t_p= 0.1ms Duty Cycle≤2.0%		0.05	μs
t_r	Rise Time			1.0	μs
t_s	Storage Time			4.0	μs
t_f	Fall Time			1.0	μs