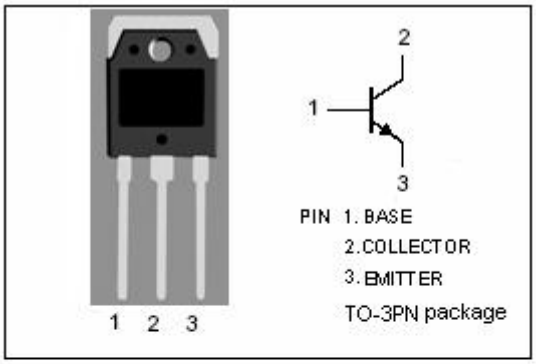
SPTECH Silicon NPN Power Transistor

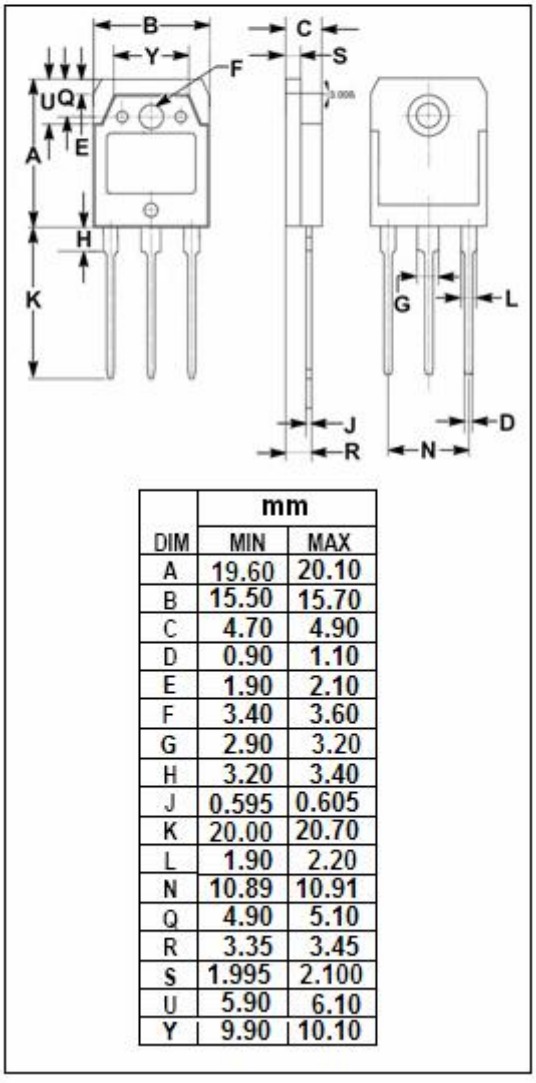


DESCRIPTION

- High Collector-Emitter Breakdown Voltage-
  : $V_{(BR)CEO}$= 450V(Min)
- High Switching Speed
- Wide Area of Safe Operation

APPLICATIONS

- Designed for switching regulator and general purpose applications.



DIM	mm MIN	MAX
A	19.60	20.10
B	15.50	15.70
C	4.70	4.90
D	0.90	1.10
E	1.90	2.10
F	3.40	3.60
G	2.90	3.20
H	3.20	3.40
J	0.595	0.605
K	20.00	20.70
L	1.90	2.20
N	10.89	10.91
Q	4.90	5.10
R	3.35	3.45
S	1.995	2.100
U	5.90	6.10
Y	9.90	10.10

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	1000	V
V_{CEO}	Collector-Emitter Voltage	450	V
V_{EBO}	Emitter-Base voltage	7	V
I_C	Collector Current-Continuous	30	A
I_{CM}	Collector Current-Peak PW≤300μs, duty cycle≤10%	60	A
I_B	Base Current-Continuous	8	A
P_C	Collector Power Dissipation @ T_C=25℃	200	W
	Collector Power Dissipation @ T_a=25℃	2.5	
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-55~150	℃

SPTECH Silicon NPN Power Transistor

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C= 1mA; I_E= 0	1000			V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C= 10mA; R_{BE}= ∞	450			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E= 1m A; I_C= 0	7			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C=20A; I_B= 3.2A			0.8	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C=20A; I_B= 3.2A			1.5	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 450V ; I_E= 0			10	μA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 5V; I_C= 0			10	μA
h_{FE-1}	DC Current Gain	I_C= 3.2A ; V_{CE}= 5V	15		50	
h_{FE-2}	DC Current Gain	I_C= 16A ; V_{CE}= 5V	10			
h_{FE-3}	DC Current Gain	I_C= 10mA ; V_{CE}= 5V	10			
f_T	Current-Gain—Bandwidth Product	I_C= 3.2A ; V_{CE}= 10V		20		MHz
C_{OB}	Output Capacitance	I_E= 0; V_{CB}= 10V; f_{test}= 1.0MHz		300		pF
Switching Times						
t_{on}	Turn-on Time	I_C= 20A, I_{B1}= 4A; I_{B2}= -8A R_L= 10Ω ; V_{CC}= 200V			0.5	μs
t_{stg}	Storage Time				2.5	μs
t_f	Fall Time				0.3	μs

◆ h_{FE-1} Classifications

L	M	N
15-30	20-40	30-50