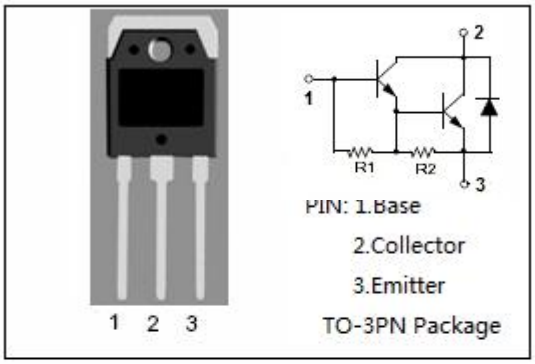
SPTECH Silicon NPN Darlington Power Transistor



DESCRIPTION

- High DC Current Gain-
  : h_{FE} = 1000(Min)@ I_C= 5A
- Collector-Emitter Sustaining Voltage-
  : $V_{CEO(SUS)}$ = 100V(Min)
- Complement to Type TIP147P

APPLICATIONS

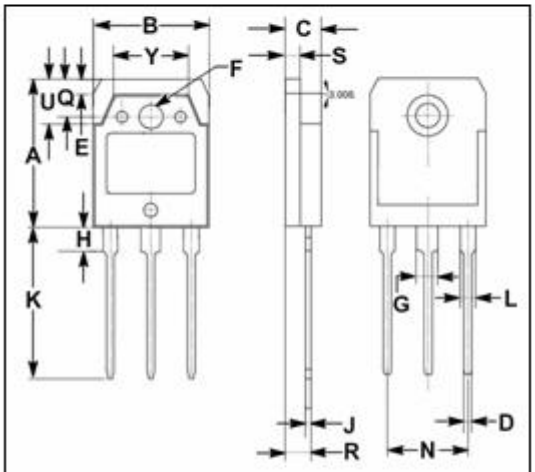
- Designed for general purpose amplifier and low frequency switching applications.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	10	A
I_{CM}	Collector Current-Peak	15	A
I_B	Base Current- Continuous	0.5	A
P_C	Collector Power Dissipation @T_C=25℃	125	W
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-65~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance, Junction to Case	1.0	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance,Junction to Ambient	35.7	℃/W



DIM	mm MIN	MAX
A	19.60	20.30
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	19.80	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	6.20
Y	9.90	10.10

SPTECH Silicon NPN Darlington Power Transistor

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 30mA, I_B= 0	100			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	I_C= 5A ,I_B= 10mA			2.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	I_C= 10A ,I_B= 40mA			3.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 10A ,I_B= 40mA			3.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	I_C= 10A ; V_{CE}= 4V			3.0	V
I_{CBO}	Collector Cutoff current	V_{CB}= 100V, I_E= 0			1	mA
I_{CEO}	Collector Cutoff current	V_{CE}= 50V, I_B= 0			2	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 5V; I_C= 0			2	mA
h_{FE-1}	DC Current Gain	I_C= 5A ; V_{CE}= 4V	1000			
h_{FE-2}	DC Current Gain	I_C= 10A ; V_{CE}= 4V	500			

Switching Times

t_d	Delay Time	V_{CC} = 30 V, I_C = 5.0 A, I_B = 20 mA; Duty Cycle≤20% I_{B1} = I_{B2}, R_C & R_B Varied, T_J = 25℃		0.15		μs
t_r	Rise Time			0.55		μs
t_{stg}	Storage Time			2.5		μs
t_f	Fall Time			2.5		μs

SPTECH Silicon NPN Darlington Power Transistor

