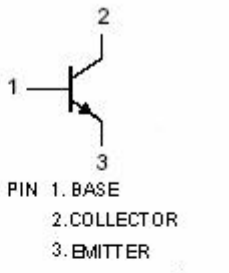
SPTECH Silicon NPN Power Transistor



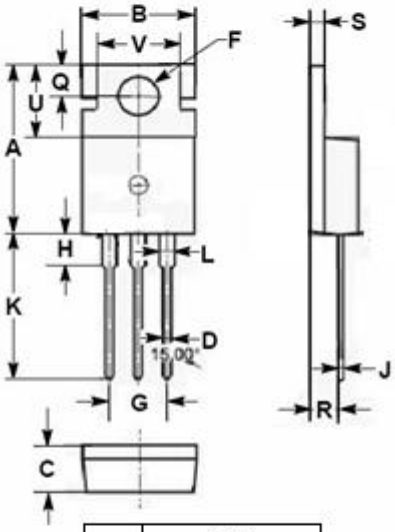


DESCRIPTION

- Collector-Emitter Breakdown Voltage-
  : $V_{(BR)CEO}$= 50V(Min)
- Low Collector-Emitter Saturation Voltage-
  : $V_{CE(sat)}$= 0.4V(Max) @I_C= 3.0A
- Complement to Type 2SB824

APPLICATIONS

- Designed for relay drivers, high-speed inverters, converters, and other general large-current switching applications.



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	60	V
V_{CEO}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	5	A
I_{CM}	Collector Current-Peak	9	A
P_C	Collector Power Dissipation @ T_C=25℃	30	W
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	60			V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C= 1mA ; R_{BE}= ∞	50			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E= 1mA ; I_C= 0	6			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 3A; I_B= 0.3A			0.4	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 40V ; I_E=0			100	μA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 4V ; I_E=0			100	μA
h_{FE-1}	DC Current Gain	I_C= 1A ; V_{CE}= 2V	70		280	
h_{FE-2}	DC Current Gain	I_C= 3A ; V_{CE}= 2V	30			
f_T	Current-Gain—Bandwidth Product	I_C= 1A; V_{CE}= 5V		30		MHz
C_{OB}	Output Capacitance	I_E= 0; V_{CB}= 10V, f= 1MHz		100		pF
Switching times						
t_{on}	Turn-on Time	I_C= 2A , I_{B1}= I_{B2}= 0.2A R_L = 10Ω ; V_{CC}= 20V		0.1		μs
t_{stg}	Storage Time			1.4		μs
t_f	Fall Time			0.2		μs

◆ h_{FE-1} Classifications

Q	R	S
70-140	100-200	140-280