

SPTECH Silicon PNP Power Transistor

BD746/A/B/C

DESCRIPTION

- Collector Current $-I_C = -20A$
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = -45V(\text{Min})$ - BD746; $-60V(\text{Min})$ - BD746A
 $-80V(\text{Min})$ - BD746B; $-100V(\text{Min})$ - BD746C
- Complement to Type BD745/A/B/C

APPLICATIONS

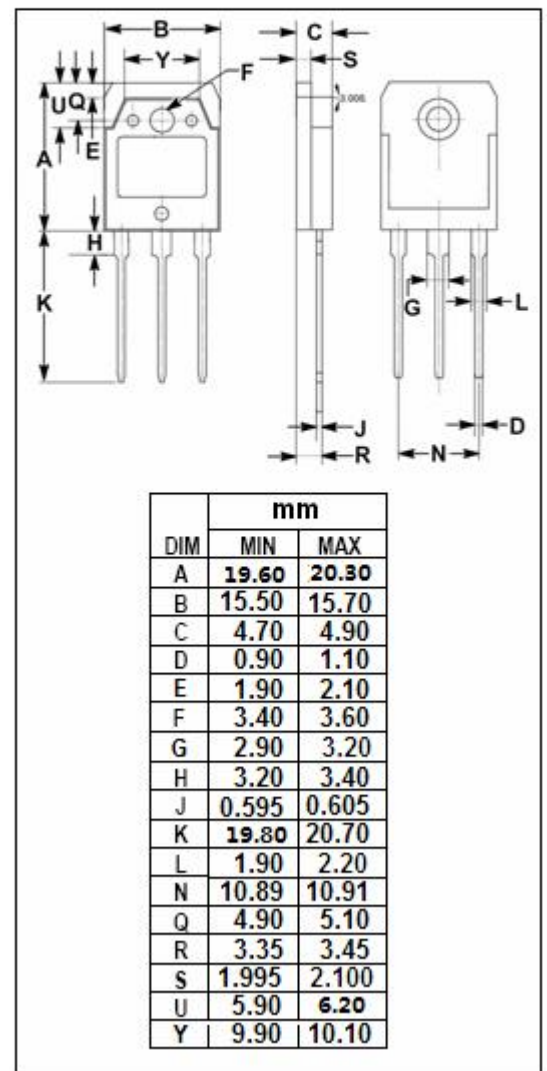
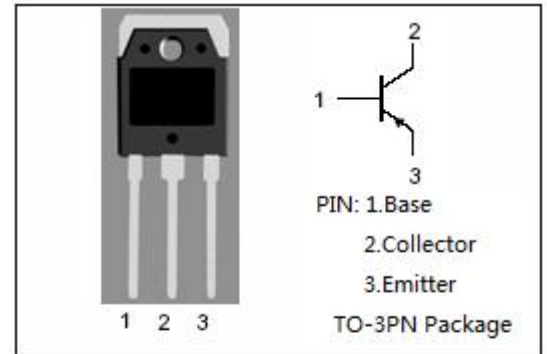
- Designed for use in general purpose power amplifier and switching applications

ABSOLUTE MAXIMUM RATINGS($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CER}	Collector-Emitter Voltage ($R_{BE} = 100\ \Omega$)	BD746	-50
		BD746A	-70
		BD746B	-90
		BD746C	-110
V_{CEO}	Collector-Emitter Voltage	BD746	-45
		BD746A	-60
		BD746B	-80
		BD746C	-100
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current-Continuous	-20	A
I_{CM}	Collector Current-Peak	-25	A
I_B	Base Current	-7	A
P_C	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	3.5	W
	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	115	
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.1	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	BD746	$I_C = -30\text{mA}; I_B = 0$	-45			V
		BD746A		-60			
		BD746B		-80			
		BD746C		-100			
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage		$I_C = -5\text{A}; I_B = -0.5\text{A}$			-1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage		$I_C = -20\text{A}; I_B = -5\text{A}$			-3.0	V
$V_{BE(on)-1}$	Base-Emitter On Voltage		$I_C = -5\text{A}; V_{CE} = -4\text{V}$			-1.0	V
$V_{BE(on)-2}$	Base-Emitter On Voltage		$I_C = -20\text{A}; V_{CE} = -4\text{V}$			-3.0	V
I_{CES}	Collector Cutoff Current	BD746	$V_{CE} = -50\text{V}; V_{BE} = 0$ $V_{CE} = -50\text{V}; V_{BE} = 0; T_C = 125^{\circ}\text{C}$			-0.1 -5.0	mA
		BD746A	$V_{CE} = -70\text{V}; V_{BE} = 0$ $V_{CE} = -70\text{V}; V_{BE} = 0; T_C = 125^{\circ}\text{C}$			-0.1 -5.0	
		BD746B	$V_{CE} = -90\text{V}; V_{BE} = 0$ $V_{CE} = -90\text{V}; V_{BE} = 0; T_C = 125^{\circ}\text{C}$			-0.1 -5.0	
		BD746C	$V_{CE} = -110\text{V}; V_{BE} = 0$ $V_{CE} = -110\text{V}; V_{BE} = 0; T_C = 125^{\circ}\text{C}$			-0.1 -5.0	
I_{CEO}	Collector Cutoff Current	BD746/A	$V_{CE} = -30\text{V}; I_B = 0$			-0.1	mA
		BD746B/C	$V_{CE} = -60\text{V}; I_B = 0$				
I_{EBO}	Emitter Cutoff Current		$V_{EB} = -5\text{V}; I_C = 0$			-0.5	mA
h_{FE-1}	DC Current Gain		$I_C = -1\text{A}; V_{CE} = -4\text{V}$	40			
h_{FE-2}	DC Current Gain		$I_C = -5\text{A}; V_{CE} = -4\text{V}$	20		150	
h_{FE-3}	DC Current Gain		$I_C = -20\text{A}; V_{CE} = -4\text{V}$	5			

Switching times

t_d	Delay Time	$I_C = -5\text{A}; I_{B1} = -I_{B2} = -0.5\text{A};$ $R_L = 6\Omega; V_{BE(off)} = 4.2\text{V}$		0.02		μs
t_r	Rise Time			0.12		μs
t_s	Storage Time			0.60		μs
t_f	Fall Time			0.30		μs