

SPTECH Silicon PNP Power Transistor

2SA1746

DESCRIPTION

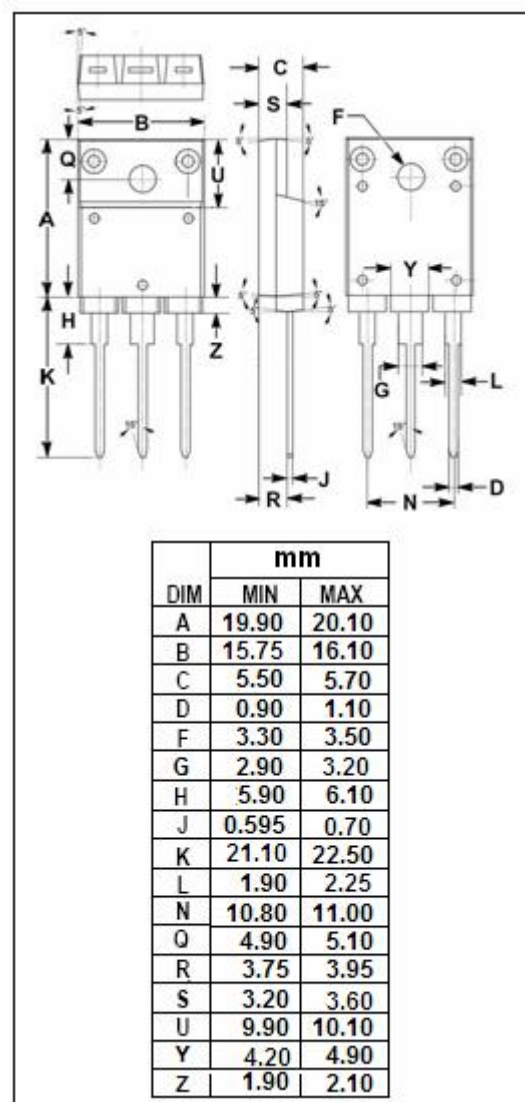
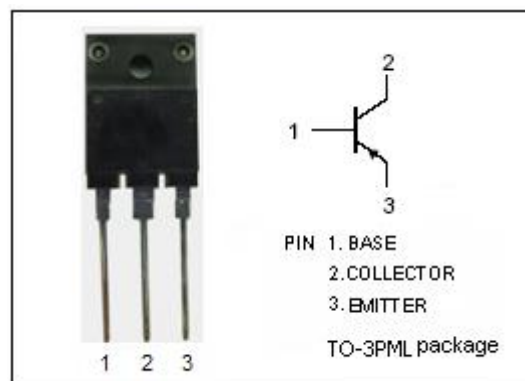
- Low Collector Saturation Voltage
: $V_{CE(sat)} = -0.5(V)(Max) @ I_C = -5A$
- Good Linearity of h_{FE}

APPLICATIONS

- Designed for chopper regulator, switch and general purpose applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	-70	V
V_{CEO}	Collector-Emitter Voltage	-50	V
V_{EBO}	Emitter-Base Voltage	-6	V
I_C	Collector Current-Continuous	-12	A
I_{CM}	Collector Current-Peak	-20	A
I_B	Base Current-Continuous	-4	A
P_C	Collector Power Dissipation @ $T_C=25^\circ C$	60	W
T_J	Junction Temperature	150	$^\circ C$
T_{stg}	Storage Temperature Range	-55~150	$^\circ C$



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ELECTRICAL CHARACTERISTICS

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

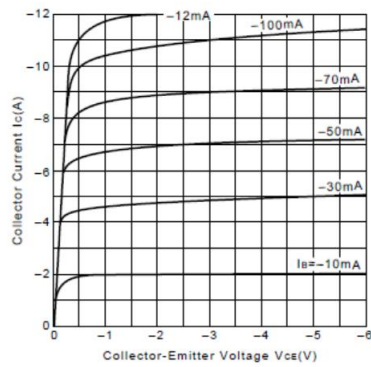
SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = -25\text{mA}$; $I_B = 0$	-50			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -5\text{A}$; $I_B = -80\text{mA}$			-0.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = -5\text{A}$; $I_B = -80\text{mA}$			-1.2	V
I_{CBO}	Collector Cutoff Current	$V_{CB} = -70\text{V}$; $I_E = 0$			-10	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = -6\text{V}$; $I_C = 0$			-10	μA
h_{FE}	DC Current Gain	$I_C = -5\text{A}$; $V_{CE} = -1\text{V}$	50			
C_{OB}	Output Capacitance	$I_E = 0$; $V_{CB} = -10\text{V}$; $f = 1.0\text{MHz}$		400		pF
f_T	Current-Gain—Bandwidth Product	$I_E = 1\text{A}$; $V_{CE} = -12\text{V}$		25		MHz

Switching Times

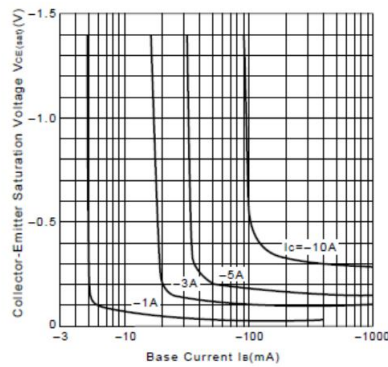
t_{on}	Turn-on Time	$I_C = -5\text{A}$, $R_L = 4\ \Omega$, $I_{B1} = -I_{B2} = -80\text{mA}$, $V_{CC} = -20\text{V}$		0.5		μs
t_{stg}	Storage Time			0.6		μs
t_f	Fall Time			0.3		μs

SPTECH Product Specification

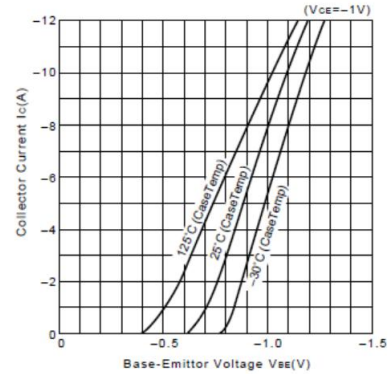
I_C - V_{CE} Characteristics (Typical)



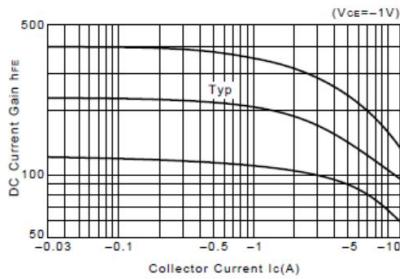
$V_{CE(sat)}$ - I_B Characteristics (Typical)



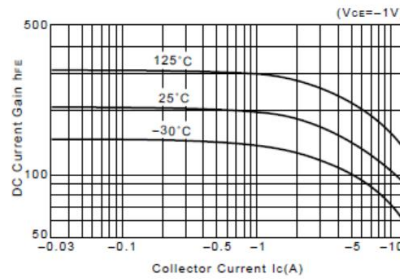
I_C - V_{BE} Temperature Characteristics (Typical)



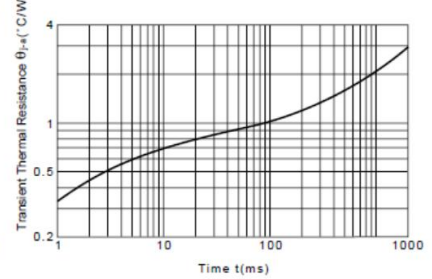
h_{FE} - I_C Characteristics (Typical)



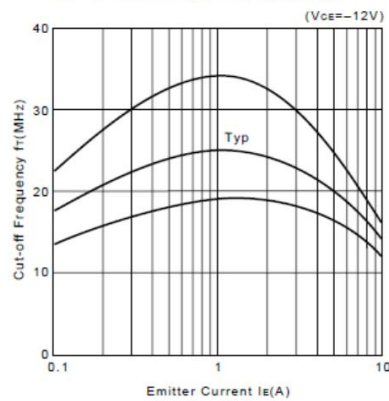
h_{FE} - I_C Temperature Characteristics (Typical)



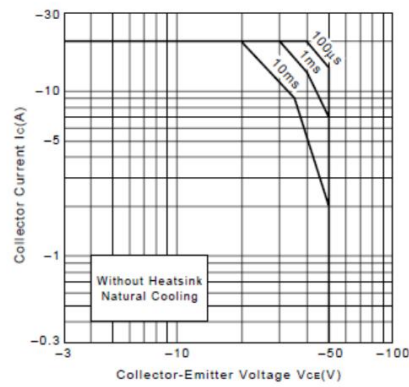
θ_{JA} -t Characteristics



f_T - I_E Characteristics (Typical)



Safe Operating Area (Single Pulse)



P_C - T_a Derating

