

SPTECH Silicon NPN Darlington Power Transistor

TIP111

DESCRIPTION

- High DC Current Gain-
: $h_{FE} = 1000(\text{Min})@ I_C = 1\text{A}$
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(\text{SUS})} = 80\text{V}(\text{Min})$
- Low Collector-Emitter Saturation Voltage-
: $V_{CE(\text{sat})} = 2.5\text{V}(\text{Max})@ I_C = 2\text{A}$
- Complement to Type TIP116

APPLICATIONS

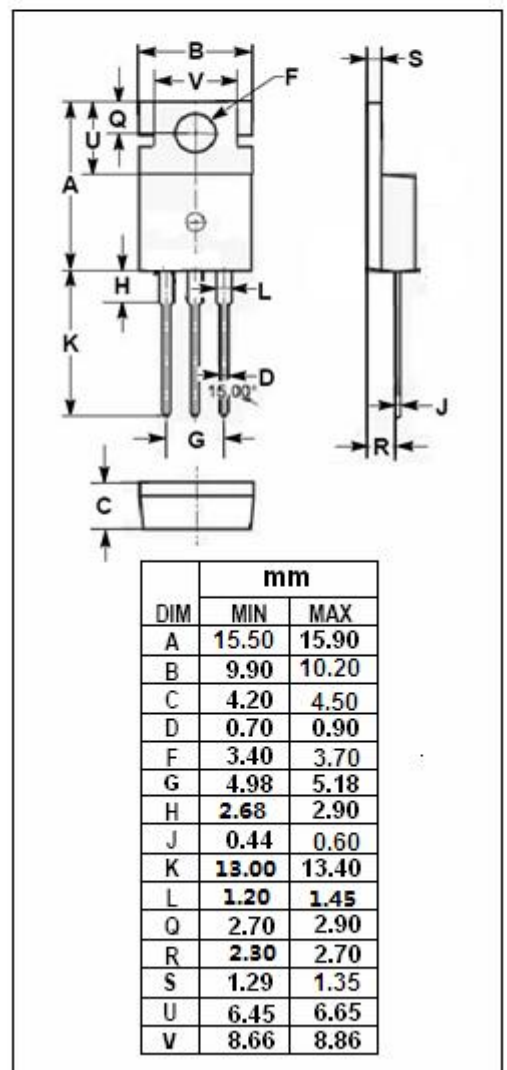
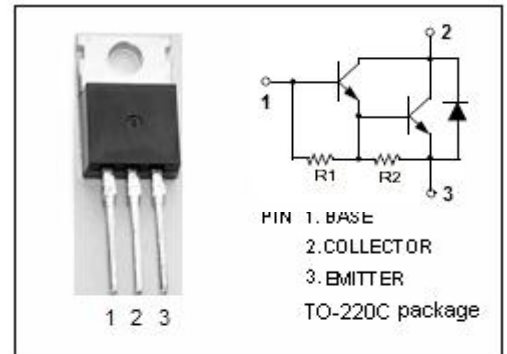
- Designed for general purpose amplifier and low speed switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	80	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	2	A
I_{CM}	Collector Current-Peak	4	A
I_B	Base Current	50	mA
P_C	Collector Power Dissipation $T_C=25^\circ\text{C}$	50	W
	Collector Power Dissipation $T_a=25^\circ\text{C}$	2	
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	2.5	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C= 30\text{mA}, I_B= 0$	80			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C= 2\text{A}, I_B= 8\text{mA}$			2.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C= 2\text{A}; V_{CE}= 4\text{V}$			2.8	V
I_{CBO}	Collector Cutoff Current	$V_{CB}= 80\text{V}, I_E= 0$			1.0	mA
I_{CEO}	Collector Cutoff Current	$V_{CE}= 40\text{V}, I_B= 0$			2.0	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}= 5\text{V}; I_C= 0$			2.0	mA
h_{FE-1}	DC Current Gain	$I_C= 1\text{A}; V_{CE}= 4\text{V}$	1000			
h_{FE-2}	DC Current Gain	$I_C= 2\text{A}; V_{CE}= 4\text{V}$	500			
C_{OB}	Output Capacitance	$I_E= 0; V_{CB}= 10\text{V}, f= 0.1\text{MHz}$			200	pF