

# SPTECH Product Specification

## SPTECH Silicon NPN Darlington Power Transistor

**2SD1071**

### DESCRIPTION

- Low Collector Saturation Voltage
- High DC Current Gain
- High Reliability

### APPLICATIONS

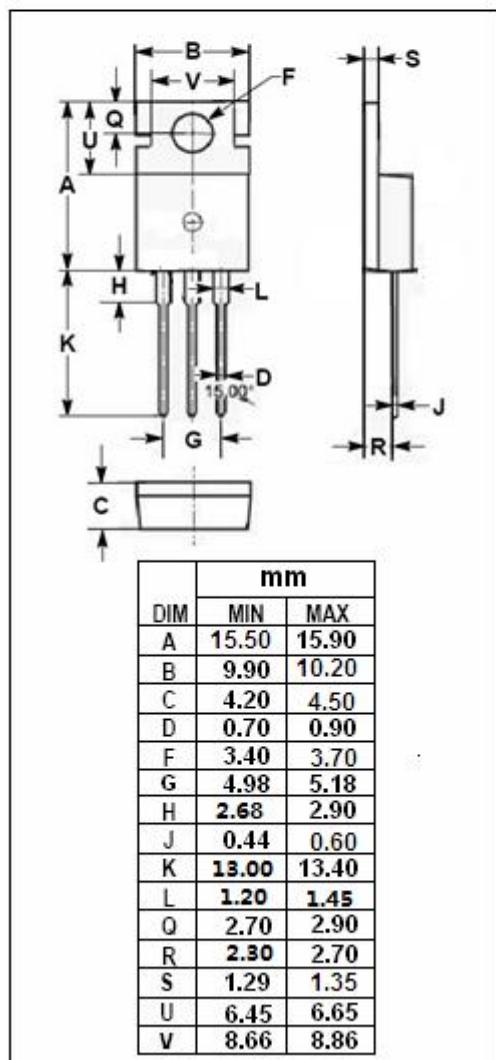
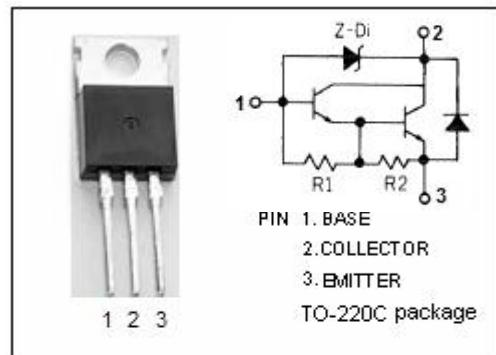
- Audio power amplifiers
- Relay & solenoid drivers
- Motor controls
- General purpose power amplifiers
- Including zener diode

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	450	V
$V_{CEO(\text{SUS})}$	Collector-Emitter Voltage	300	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$V_z$	Zener Voltage	300	V
$I_c$	Collector Current-Continuous	6	A
$I_b$	Base Current-Continuous	2.5	A
$P_c$	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	40	W
$T_j$	Junction Temperature	150	°C
$T_{stg}$	Storage Temperature Range	-40~150	°C

### THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th,j-c}$	Thermal Resistance,Junction to Case	3.0	°C/W



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### ELECTRICAL CHARACTERISTICS

T<sub>c</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>Z</sub>	Zener Voltage	I <sub>Z</sub> = 0.1mA	300		450	V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> = 5mA; I <sub>C</sub> = 0	6			V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 4A; I <sub>B</sub> = 15mA			1.5	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 4A; I <sub>B</sub> = 15mA			2.0	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 300V; I <sub>E</sub> = 0			0.1	mA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 6V; I <sub>C</sub> = 0			5	mA
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = 4A; V <sub>CE</sub> = 2V	500			

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