

# SPTECH Product Specification

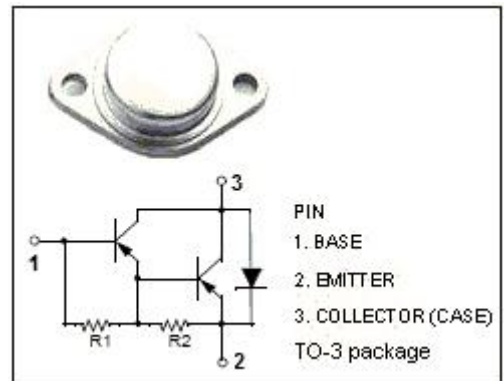
## SPTECH Silicon PNP Darlington Power Transistor MJ11031

### DESCRIPTION

- Collector-Emitter Breakdown Voltage  
:  $V_{(BR)CEO} = -90V(\text{Min.})$
- High DC Current Gain-  
:  $h_{FE} = 1000(\text{Min.})@I_C = -25A$   
:  $h_{FE} = 400(\text{Min.})@I_C = -50A$
- Complement to the NPN MJ11030

### APPLICATIONS

- Designed for use as output devices in complementary general purpose amplifier applications.

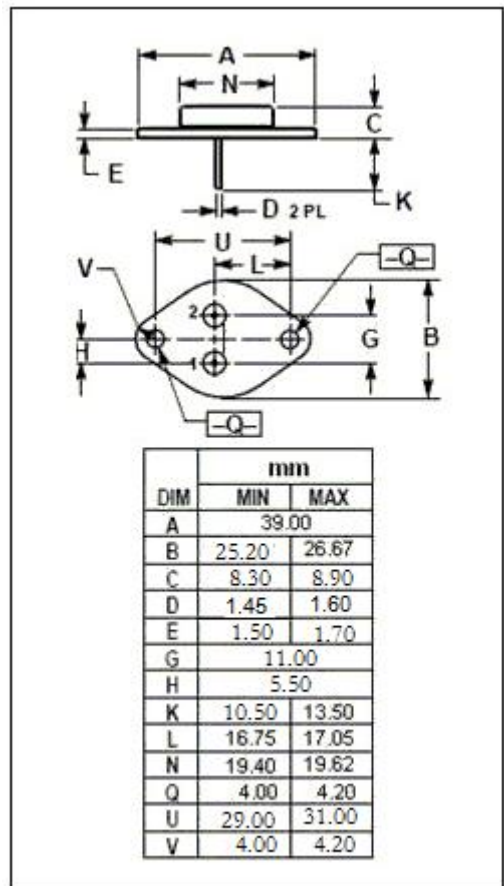


### ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	-90	V
$V_{CEO}$	Collector-Emitter Voltage	-90	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current-Continuous	-50	A
$I_{CM}$	Collector Current-Peak	-100	A
$I_B$	Base Current-Continuous	-2	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	300	W
$T_j$	Junction Temperature	200	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~+200	$^\circ\text{C}$

### THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	0.584	$^\circ\text{C}/\text{W}$



**SPTECH Silicon PNP Darlington Power Transistor**  
**MJ11031**

**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	$I_C = -50\text{mA}; I_B = 0$	-90			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C = -25\text{A}; I_B = -250\text{mA}$			-2.5	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C = -50\text{A}; I_B = 500\text{mA}$			-3.5	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C = -25\text{A}; I_B = -250\text{mA}$			-3.0	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C = -50\text{A}; I_B = -500\text{mA}$			-4.5	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = -90\text{V}; I_E = 0$ $V_{CB} = -90\text{V}; I_E = 0; T_c = 150^{\circ}\text{C}$			-2.0 -5.0	mA
$I_{CEO}$	Collector Cutoff Current	$V_{CE} = -90\text{V}; I_B = 0$			-2.0	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = -5\text{V}; I_C = 0$			-5.0	mA
$h_{FE-1}$	DC Current Gain	$I_C = -25\text{A}, V_{CE} = -5\text{V}$	1000		18000	
$h_{FE-2}$	DC Current Gain	$I_C = -50\text{A}, V_{CE} = -5\text{V}$	400			