

SPTECH Silicon NPN Darlington Power Transistor

DESCRIPTION

- Collector-Emitter Breakdown Voltage
: $V_{(BR)CEO} = 120V(\text{Min.})$
- High DC Current Gain-
: $h_{FE} = 1000(\text{Min.})@I_C = 25A$
: $h_{FE} = 400(\text{Min.})@I_C = 50A$
- Complement to the PNP MJ11033

APPLICATIONS

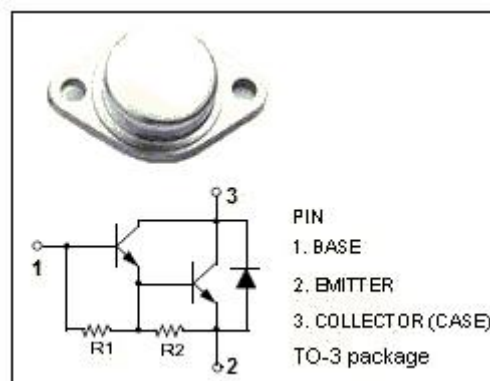
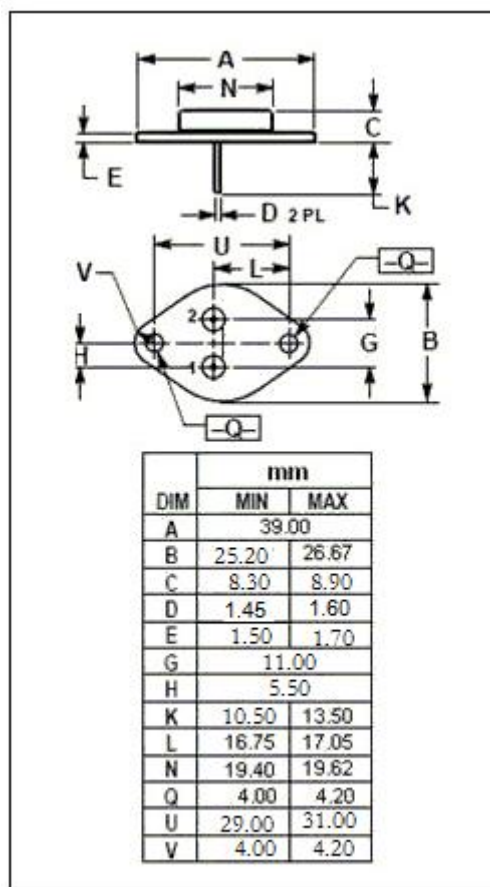
- Designed for use as output devices in complementary general purpose amplifier applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	120	V
V_{CEO}	Collector-Emitter Voltage	120	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	$^\circ\text{C/W}$



SPTECH Silicon NPN Darlington Power Transistor

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	$I_C=50\text{mA}; I_B=0$	120			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	$V_{CB}=120\text{V}; I_E=0$ $V_{CB}=120\text{V}; I_E=0; T_C=150^{\circ}\text{C}$			2.0 5.0	mA
I_{CEO}	Collector Cutoff Current	$V_{CE}=120\text{V}; I_B=0$			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			