

# isc Silicon NPN Darlington Power Transistor

**BD677**

## DESCRIPTION

- Collector–Emitter Breakdown Voltage—  
:  $V_{(BR)CEO} = 60V$
- DC Current Gain—  
:  $h_{FE} = 750(\text{Min}) @ I_C = 1.5 A$
- Complement to Type BD678
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

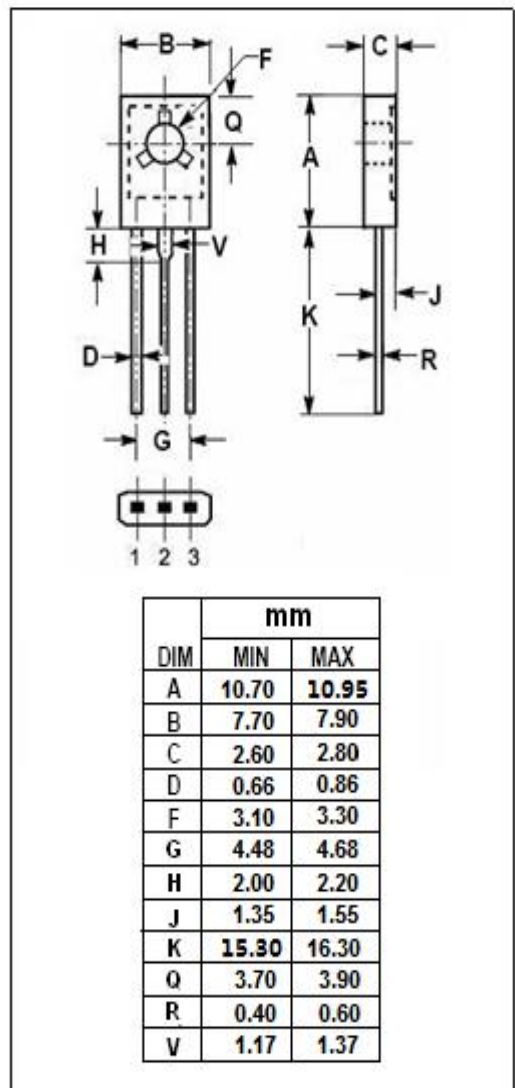
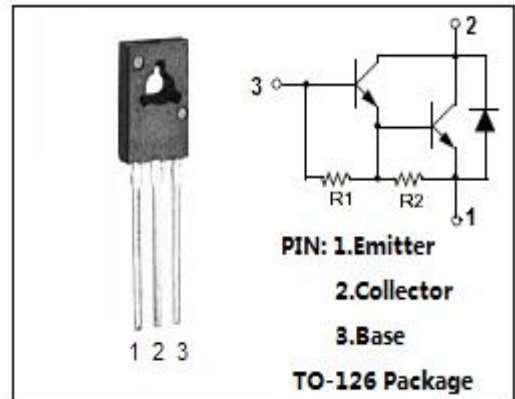
- Designed for use as output devices in complementary general-purpose amplifier applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	60	V
$V_{CEO}$	Collector-Emmitter Voltage	60	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current-Continuous	4	A
$I_B$	Base Current	0.1	A
$P_C$	Collector Power Dissipation $T_C=25^\circ C$	40	W
$T_j$	Junction Temperature	150	$^\circ C$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ C$

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance, Junction to Case	3.13	$^\circ C/W$



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## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 50mA; I <sub>B</sub> = 0	60		V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 1.5A; I <sub>B</sub> = 30mA		2.5	V
V <sub>BE(on)</sub>	Base-Emitter On Voltage	I <sub>C</sub> = 1.5A; V <sub>CE</sub> = 3V		2.5	V
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = 60V; I <sub>B</sub> = 0		0.5	mA
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 60V; I <sub>E</sub> = 0 V <sub>CB</sub> = 60V; I <sub>E</sub> = 0; T <sub>C</sub> = 100°C		0.2 2.0	mA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 5V; I <sub>C</sub> = 0		2.0	mA
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = 50mA; V <sub>CE</sub> = 3V	750		
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = 1.5 A; V <sub>CE</sub> = 3V	750		
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = 4 A; V <sub>CE</sub> = 3V	1000		

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