

**isc Silicon NPN Darlington Power Transistor**
**BD647**
**DESCRIPTION**

- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 80V(\text{Min})$
- High DC Current Gain  
:  $h_{FE} = 750(\text{Min}) @ I_C = 3A$
- Low Saturation Voltage
- Complement to Type BD648
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

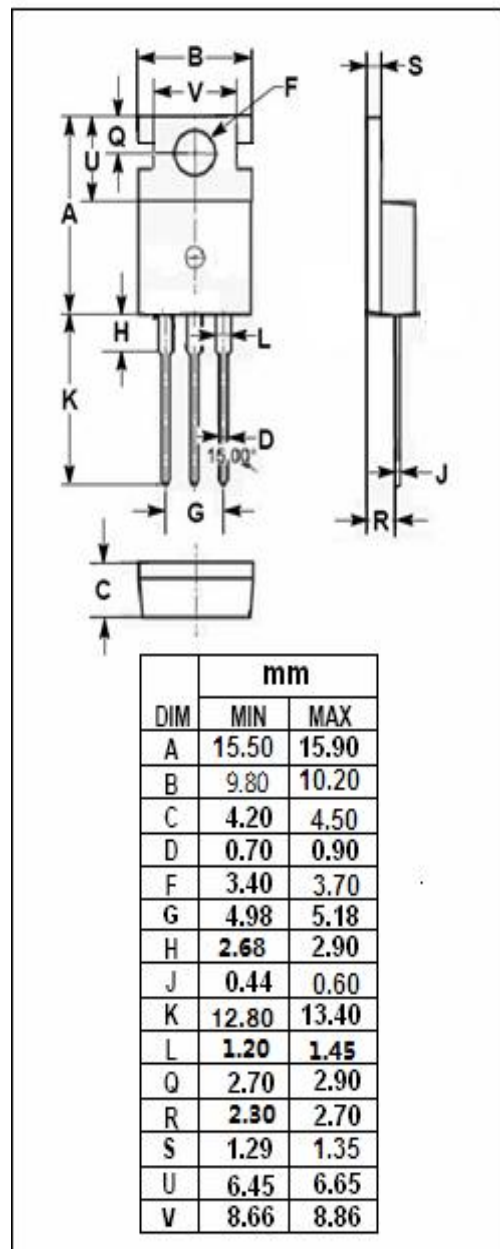
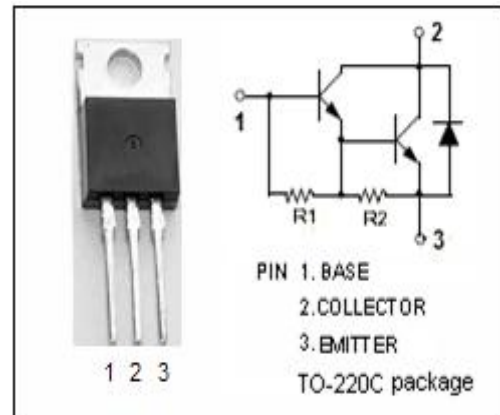
- Designed for use as complementary AF push-pull output stage applications

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	100	V
$V_{CEO}$	Collector-Emitter Voltage	80	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current-Continuous	8	A
$I_{CP}$	Collector Current-Peak	12	A
$I_B$	Base Current-Continuous	0.15	A
$P_C$	Collector Power Dissipation @ $T_a = 25^\circ\text{C}$	2	W
	Collector Power Dissipation @ $T_c = 25^\circ\text{C}$	62.5	
$T_J$	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	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	70	$^\circ\text{C/W}$



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## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CE0(SUS)</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 30mA; I <sub>B</sub> = 0	80			V
V <sub>CE(sat)-1</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 3A; I <sub>B</sub> = 12mA			2.0	V
V <sub>CE(sat)-2</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 5A; I <sub>B</sub> = 50mA			2.5	V
V <sub>BE(on)</sub>	Base-Emitter On Voltage	I <sub>C</sub> = 3A ; V <sub>CE</sub> = 3V			2.5	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 80V; I <sub>E</sub> = 0			0.2	mA
		V <sub>CB</sub> = 50V; I <sub>E</sub> = 0; T <sub>C</sub> = 150°C			2.0	
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = 40V; I <sub>B</sub> = 0			0.5	mA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 5V; I <sub>C</sub> = 0			5	mA
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = 3A ; V <sub>CE</sub> = 3V	750			

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