

**isc Silicon PNP Darlington Power Transistor**

**BD644**

**DESCRIPTION**

- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = -45V(\text{Min})$
- High DC Current Gain  
:  $h_{FE} = 750(\text{Min}) @ I_C = -3A$
- Low Saturation Voltage
- Complement to Type BD643

**APPLICATIONS**

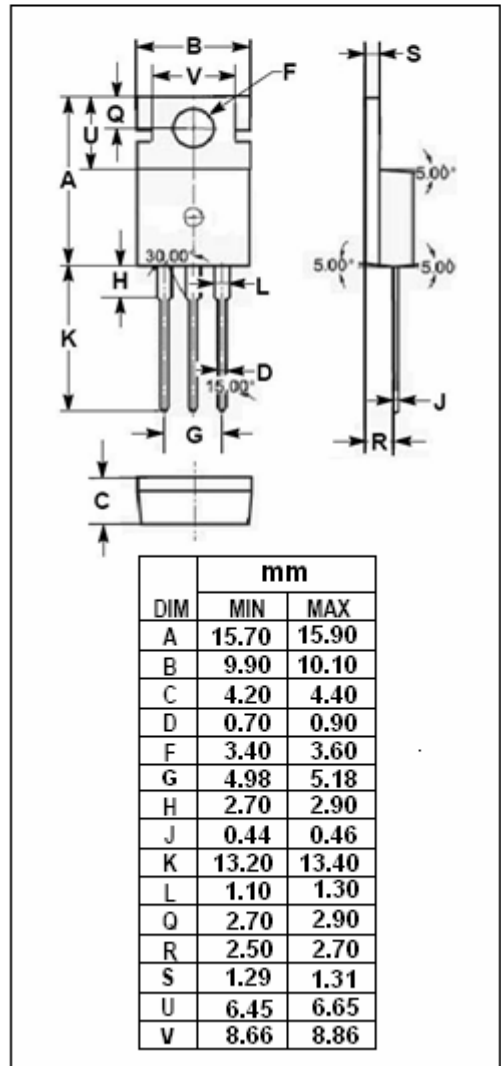
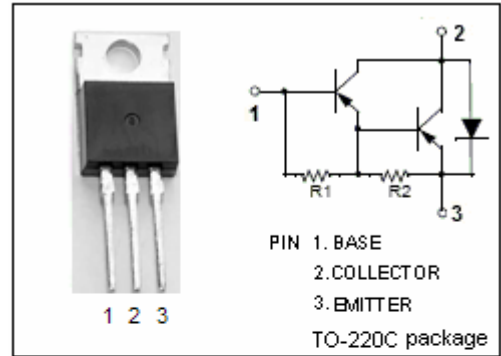
- Designed for use as complementary AF push-pull output stage applications

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	-60	V
$V_{CEO}$	Collector-Emitter Voltage	-45	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	-0.3	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	62.5	$^\circ\text{C/W}$



**isc Silicon PNP Darlington Power Transistor****BD644****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Breakdown Voltage	$I_C = -30\text{mA}; I_B = 0$	-45			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C = -3\text{A}; I_B = -12\text{mA}$			-2.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C = -5\text{A}; I_B = -50\text{mA}$			-2.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = -5\text{A}; I_B = -50\text{mA}$			-3.0	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = -3\text{A}; V_{CE} = -3\text{V}$			-2.5	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = -45\text{V}; I_E = 0$			-0.2	mA
		$V_{CB} = -30\text{V}; I_E = 0; T_C = 150^{\circ}\text{C}$			-2.0	
$I_{CEO}$	Collector Cutoff Current	$V_{CE} = -25\text{V}; I_B = 0$			-0.5	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = -5\text{V}; I_C = 0$			-5	mA
$h_{FE}$	DC Current Gain	$I_C = -3\text{A}; V_{CE} = -3\text{V}$	750			