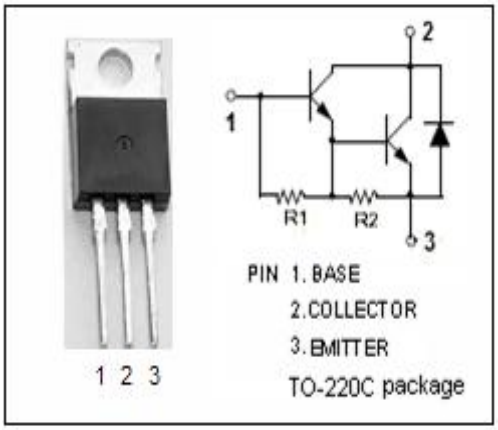
isc Silicon NPN Darlington Power Transistor — BD643

DESCRIPTION

- Collector-Emitter Breakdown Voltage-
  : $V_{(BR)CEO}$= 45V(Min)
- High DC Current Gain
  : h_{FE}= 750(Min) @I_C= 3A
- Low Saturation Voltage
- Complement to Type BD644
- Minimum Lot-to-Lot variations for robust device performance and reliable operation



APPLICATIONS

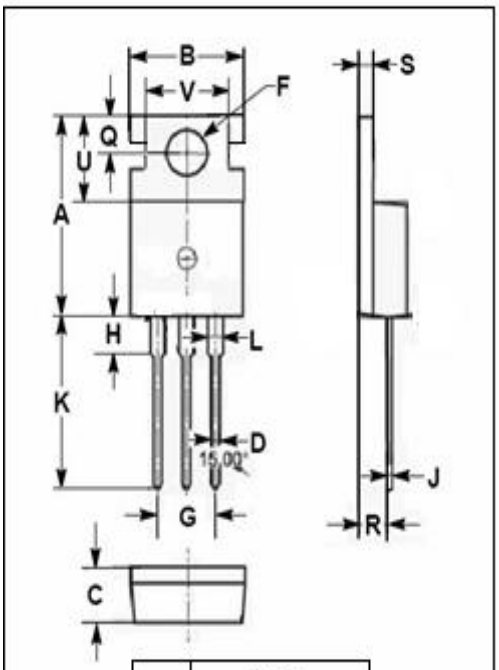
- Designed for use as complementary AF push-pull output stage applications

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

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℃	2	W
	Collector Power Dissipation @ T_C=25℃	62.5	
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-65~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	2	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance,Junction to Ambient	70	℃/W



DIM	mm MIN	mm MAX
A	15.50	15.90
B	9.80	10.20
C	4.20	4.50
D	0.70	0.90
F	3.40	3.70
G	4.98	5.18
H	2.68	2.90
J	0.44	0.60
K	12.80	13.40
L	1.20	1.45
Q	2.70	2.90
R	2.30	2.70
S	1.29	1.35
U	6.45	6.65
V	8.66	8.86

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Breakdown Voltage	I_C= 30mA; I_B= 0	45			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	I_C= 4A; I_B= 16mA			2.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	I_C= 5A; I_B= 50mA			2.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	I_C= 3A ; V_{CE}= 3V			2.5	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 45V; I_E= 0			0.2	mA
		V_{CB}= 30V; I_E= 0; T_C= 150℃			2.0	
I_{CEO}	Collector Cutoff Current	V_{CE}= 25V; I_B= 0			0.5	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 5V; I_C= 0			5	mA
h_{FE}	DC Current Gain	I_C= 3A ; V_{CE}= 3V	750			