

isc Silicon NPN Darlington Power Transistor
BD643
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 BD644
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

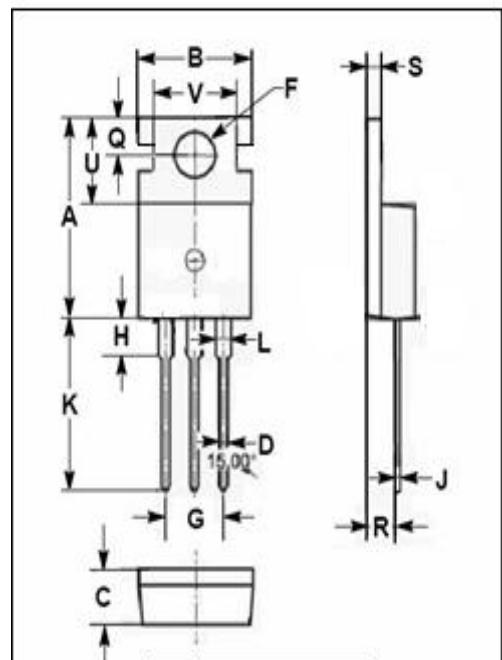
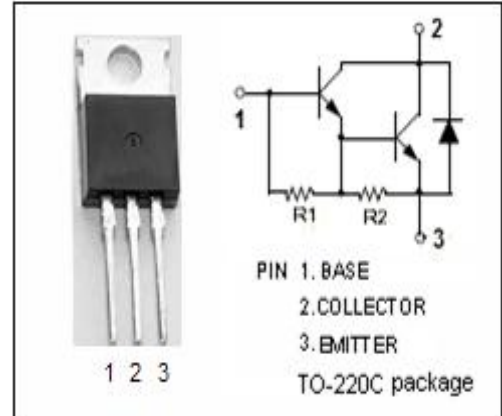
- Designed for use as complementary AF push-pull output stage applications

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

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	70	$^\circ\text{C/W}$



DIM	mm	
	MIN	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°C 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°C			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			

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