

# isc Silicon NPN Darlington Power Transistor

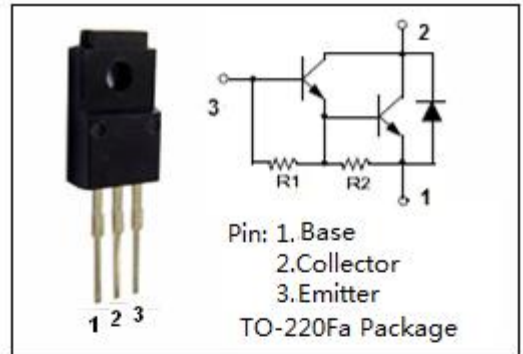
# BDT61F

### DESCRIPTION

- High DC Current Gain
- Low Saturation Voltage
- Complement to Type BDT60F
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

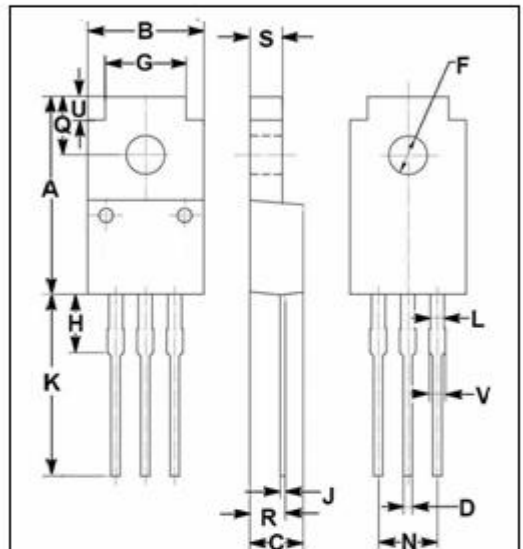
### APPLICATIONS

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



### ABSOLUTE MAXIMUM RATINGS(T<sub>a</sub>=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>CB0</sub>	Collector-Base Voltage	60	V
V <sub>CEO</sub>	Collector-Emitter Voltage	60	V
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
I <sub>c</sub>	Collector Current-Continuous	4	A
I <sub>CP</sub>	Collector Current-Peak	6	A
I <sub>B</sub>	Base Current-Continuous	0.1	A
P <sub>C</sub>	Collector Power Dissipation @ T <sub>a</sub> =25°C	17	W
	Collector Power Dissipation @ T <sub>C</sub> =25°C	25	
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature Range	-65~150	°C



DIM	mm	
	MIN	MAX
A	16.85	17.15
B	9.54	10.10
C	4.35	4.65
D	0.75	0.90
F	3.20	3.40
G	6.90	7.20
H	5.15	5.45
J	0.45	0.75
K	13.35	13.65
L	1.10	1.30
N	4.98	5.18
Q	4.85	5.15
R	2.55	3.25
S	2.70	2.90
U	1.75	2.05
V	1.30	1.50

### THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal Resistance, Junction to Case	5	°C/W
R <sub>th j-a</sub>	Thermal Resistance, Junction to Ambient	7.35	°C/W

**isc Silicon NPN Darlington Power Transistor****BDT61F****ELECTRICAL CHARACTERISTICS** $T_C=25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CE0(SUS)}$	Collector-Emitter Breakdown Voltage	$I_C=30\text{mA}; I_B=0$	80			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=1.5\text{A}; I_B=6\text{mA}$			2.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=4\text{A}; V_{CE}=3\text{V}$			2.5	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=30\text{V}; I_E=0$			0.2	mA
		$V_{CB}=40\text{V}; I_E=0; T_C=150^\circ\text{C}$			1.0	
$I_{CEO}$	Collector Cutoff Current	$V_{CE}=40\text{V}; I_B=0$			0.2	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			5	mA
$h_{FE-1}$	DC Current Gain	$I_C=0.5\text{A}; V_{CE}=3\text{V}$		2000		
$h_{FE-2}$	DC Current Gain	$I_C=1.5\text{A}; V_{CE}=3\text{V}$	750			
$h_{FE-3}$	DC Current Gain	$I_C=4\text{A}; V_{CE}=3\text{V}$		1000		