

isc Silicon NPN Darlington Power Transistor

BD651F

DESCRIPTION

- High DC Current Gain
- Low Saturation Voltage
- Complement to Type BD652F
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

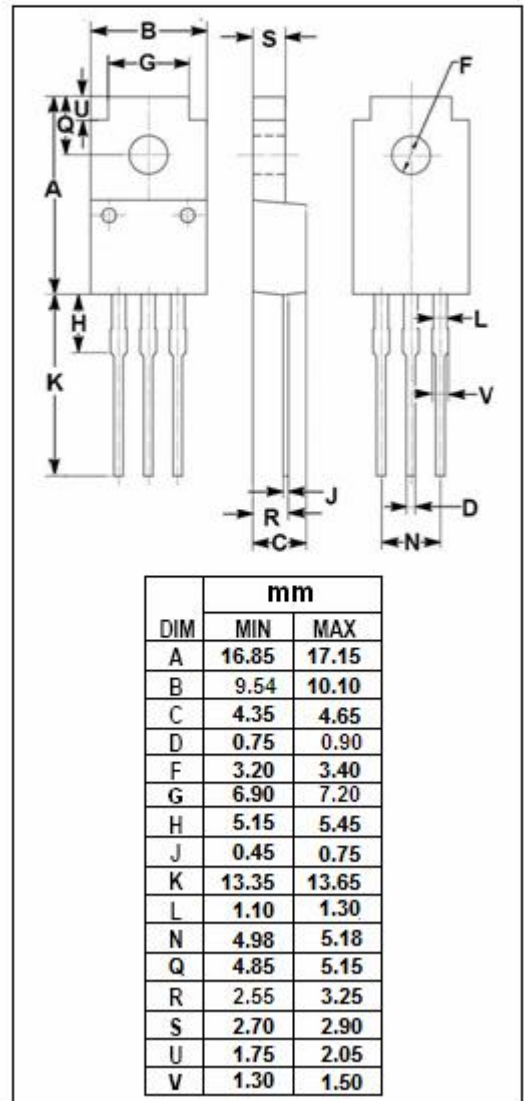
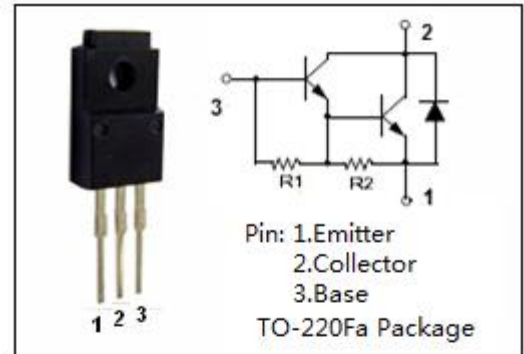
- Designed for use as complementary AF push-pull output stage applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	140	V
V_{CEO}	Collector-Emitter Voltage	120	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 @ $T_a=25^{\circ}\text{C}$	20	W
	Collector Power Dissipation @ $T_c=25^{\circ}\text{C}$	32	
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	1.6	$^{\circ}\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	6.25	$^{\circ}\text{C/W}$



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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	$I_C=30\text{mA}; I_B=0$	140			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	$V_{CB}=140\text{V}; I_E=0$			0.1	mA
		$V_{CB}=70\text{V}; I_E=0; T_C=150^{\circ}\text{C}$			1.0	
I_{CEO}	Collector Cutoff Current	$V_{CE}=60\text{V}; I_B=0$			0.2	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			5	mA
h_{FE-1}	DC Current Gain	$I_C=0.5\text{A}; V_{CE}=3\text{V}$		1900		
h_{FE-2}	DC Current Gain	$I_C=3\text{A}; V_{CE}=3\text{V}$	750			
h_{FE-3}	DC Current Gain	$I_C=8\text{A}; V_{CE}=3\text{V}$		1800		

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