

isc Silicon PNP Power Transistor
BD234/236/238
DESCRIPTION

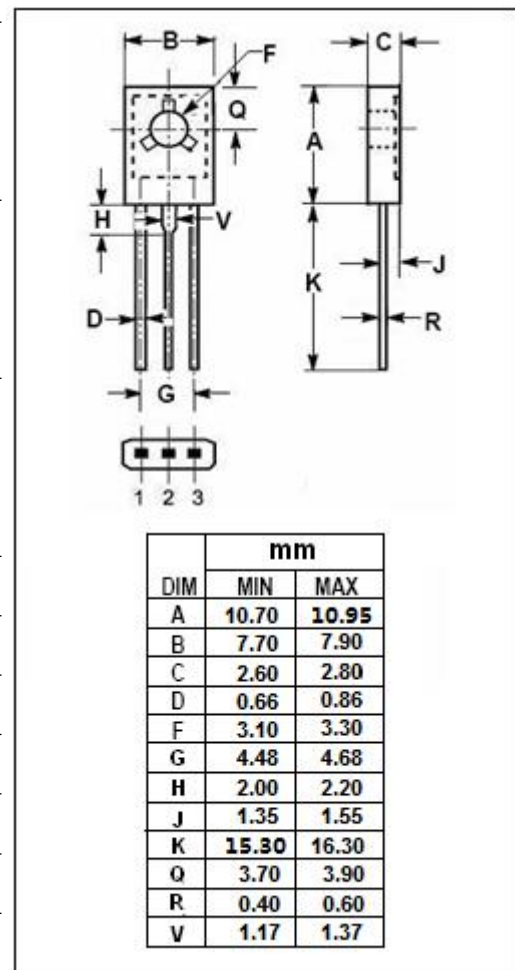
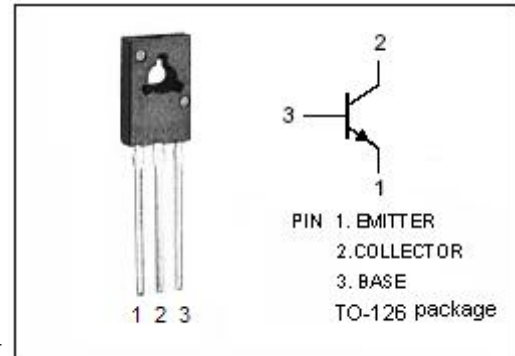
- DC Current Gain-
: $h_{FE} = 40(\text{Min}) @ I_C = -0.15\text{A}$
- Complement to Type BD233/235/237
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for use in 5~10 watt audio amplifiers and drivers utilizing complementary or quasi complementary circuits.

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

SYMBOL	PARAMETER	VALUE	UNIT	
V_{CBO}	Collector-Base Voltage	BD234	-45	V
		BD236	-60	
		BD238	-100	
V_{CEO}	Collector-Emitter Voltage	BD234	-45	V
		BD236	-60	
		BD238	-80	
V_{CER}	Collector-Emitter Voltage($R_{BE} = 1k\Omega$)	BD234	-45	V
		BD236	-60	
		BD238	-100	
V_{EBO}	Emitter-Base Voltage	-5	V	
I_C	Collector Current-Continuous	-2	A	
I_{CM}	Collector Current-Peak	-6	A	
I_B	Base Current-Continuous	-0.5	A	
P_C	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	25	W	
T_J	Junction Temperature	150	$^\circ\text{C}$	
T_{stg}	Storage Temperature Range	-65~150	$^\circ\text{C}$	



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THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	5	°C/W
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	100	°C/W

ELECTRICAL CHARACTERISTICS
 $T_C=25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CE0(SUS)}$	Collector-Emitter Sustaining Voltage	BD234	$I_C = -50\text{mA}; I_B = 0$	-45		V
		BD236		-60		
		BD238		-80		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -1.0\text{A}; I_B = -0.1\text{A}$			-0.6	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = -1.0\text{A}; V_{CE} = -2\text{V}$			-1.3	V
I_{CBO}	Collector Cutoff Current	$V_{CB} = V_{CB0max}; I_E = 0$ $V_{CB} = V_{CB0max}; I_E = 0; T_J = 150^\circ\text{C}$			-0.05 -1.0	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = -5\text{V}; I_C = 0$			-0.2	mA
h_{FE-1}	DC Current Gain	$I_C = -150\text{mA}; V_{CE} = -2\text{V}$	40		250	
h_{FE-2}	DC Current Gain	$I_C = -1.0\text{A}; V_{CE} = -2\text{V}$	25			
f_T	Current-Gain—Bandwidth Product	$I_C = -250\text{mA}; V_{CE} = -10\text{V}; f_{test} = 1.0\text{MHz}$	3.0			MHz

Switching Times

Symbol	Parameter	Conditions	MIN	TYP.	MAX	UNIT
t_{on}	Turn-On Time	$I_C = -1.0\text{A}; I_{B1} = -I_{B2} = -0.1\text{A}$		0.3		μs
t_{off}	Turn-Off Time			0.7		μs

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