

Silicon NPN Power Transistor

BD725

DESCRIPTION

- DC Current Gain-
 : $h_{FE} = 40 @ I_C = 0.5A$
- Collector-Emitter Breakdown Voltage -
 : $V_{(BR)CEO} = 120V(\text{Min})$
- Complement to type BD726

APPLICATIONS

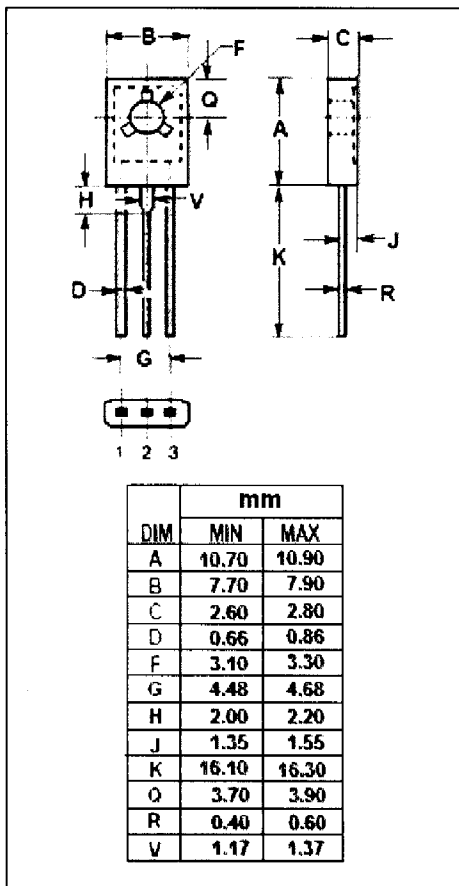
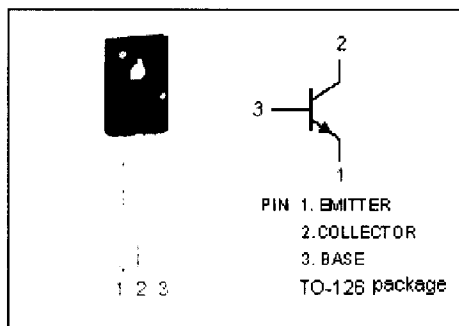
- Designed for use in audio output and general purpose amplifier applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	120	V
V_{CEO}	Collector-Emitter Voltage	120	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	4	A
I_{CM}	Collector Current-Peak	7	A
I_B	Base Current-Continuous	1	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ C$	30	W
T_J	Junction Temperature	150	$^\circ C$
T_{stg}	Storage Temperature Range	-65~150	$^\circ C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R_{th-jc}	Thermal Resistance, Junction to Case	3.5	$^\circ C/W$
R_{th-ja}	Thermal Resistance, Junction to Ambient	100	$^\circ C/W$



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=30\text{mA}; I_B=0$	120			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=2\text{A}; I_B=0.2\text{A}$			1.0	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=2\text{A}; V_{CE}=4\text{V}$			1.4	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=120\text{V}; I_E=0$			50	μA
		$V_{CB}=60\text{V}; I_E=0; T_C=150^\circ\text{C}$			1	mA
I_{CEO}	Collector Cutoff Current	$V_{CE}=60\text{V}; I_B=0$			0.1	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			0.2	mA
h_{FE-1}	DC Current Gain	$I_C=0.5\text{A}; V_{CE}=4\text{V}$	40			
h_{FE-2}	DC Current Gain	$I_C=2\text{A}; V_{CE}=4\text{V}$	20			
f_T	Current-Gain—Bandwidth Product	$I_C=0.5\text{A}; V_{CE}=4\text{V}$	3			MHz

Switching Times

t_{on}	Turn-On time	$I_C=1\text{A}; I_{B1}=-I_{B2}=0.1\text{A}; V_{CC}=20\text{V}$		0.3		μs
t_{off}	Turn-Off time			1.5		μs