

isc Silicon NPN Power Transistor

BDY24

DESCRIPTION

- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 90V(\text{Min.})$
- Collector-Emitter Saturation Voltage-
: $V_{CE(sat)} = 0.6V(\text{Max}) @ I_C = 2A$
- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

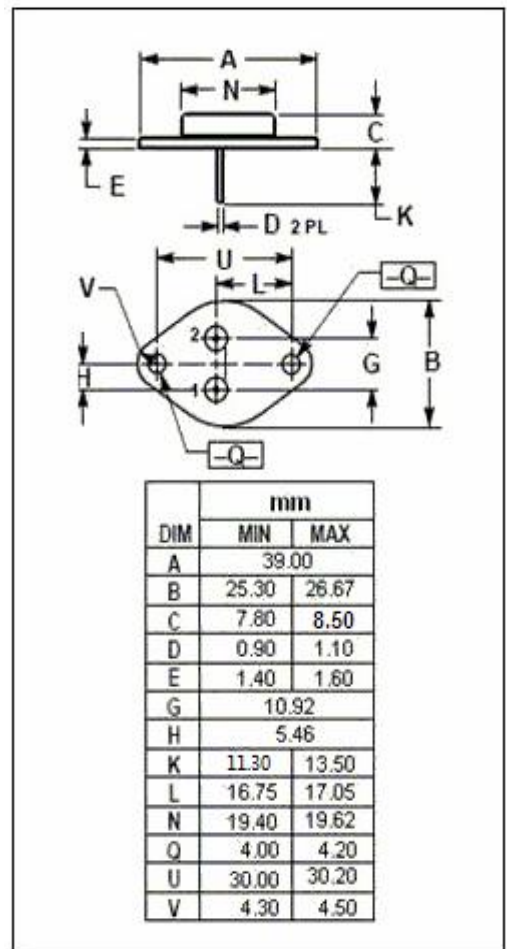
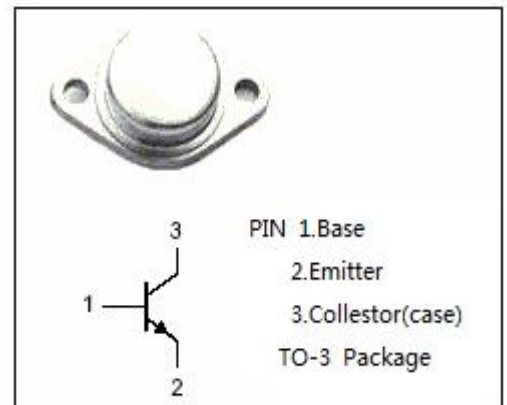
- Designed for LF signal powe amplifier applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	90	V
V_{EBO}	Emitter-Base Voltage	10	V
I_C	Collector Current-Continuous	6	A
I_B	Base Current	3	A
P_C	Collector Power Dissipation@ $T_C = 25^\circ\text{C}$	87.5	W
T_J	Junction Temperature	200	$^\circ\text{C}$
T_{stg}	Storage Temperature	-65~200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance, Junction to Case	2.0	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=50\text{mA}; I_B=0$	90			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=1\text{mA}; I_E=0$	100			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=2\text{A}; I_B=0.25\text{A}$			0.6	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=2\text{A}; I_B=0.25\text{A}$			1.2	V
I_{CES}	Collector Cutoff Current	$V_{CE}=100\text{V}; V_{BE}=0$			1.0	mA
I_{CEO}	Collector Cutoff Current	$V_{CE}=90\text{V}; I_B=0$			1.0	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=10\text{V}; I_C=0$			1.0	mA
h_{FE}	DC Current Gain	$I_C=2\text{A}; V_{CE}=4\text{V}$	15		100	
f_T	Current Gain-Bandwidth Product	$I_C=0.5\text{A}; V_{CE}=15\text{V}; f=10\text{MHz}$	10			MHz

Switching Times

t_{on}	Turn-On Time	$I_C=5\text{A}; I_B=1\text{A}$			0.5	μs
t_{off}	Turn-Off Time	$I_C=5\text{A}; I_{B1}=1\text{A}; I_{B2}=-0.5\text{A}$			2.0	μs

◆ h_{FE} Classifications

A	B	C
15-45	30-90	75-100

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