

isc Silicon NPN Power Transistor

BDY54

DESCRIPTION

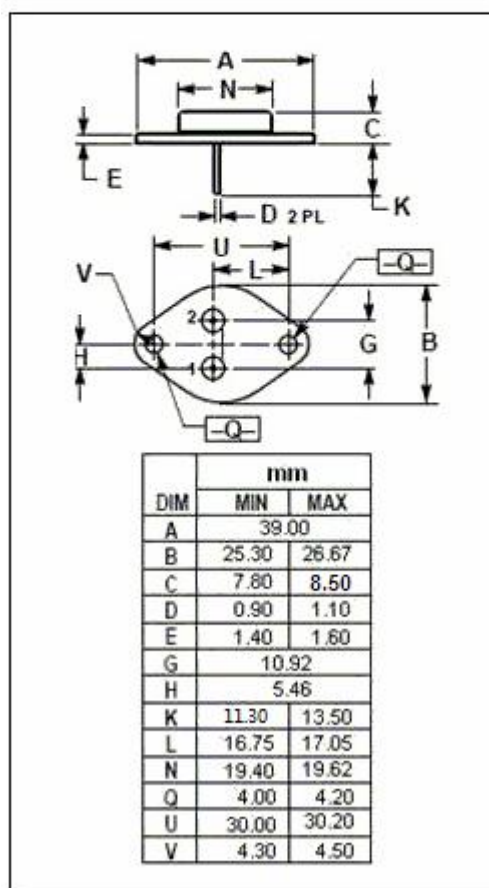
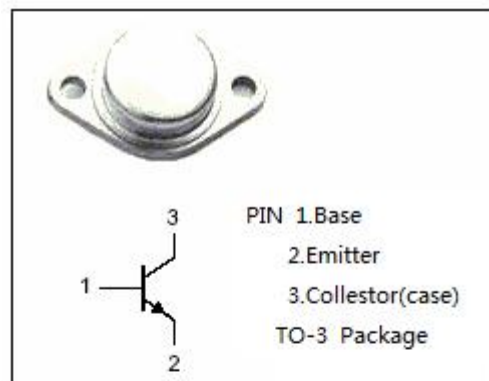
- Collector-Emitter Sustaining Voltage-
: $V_{CE(SUS)} = 120V(\text{Min.})$
- Collector-Emitter Saturation Voltage-
: $V_{CE(sat)} = 1.1 V(\text{Max}) @ I_C = 4A$
- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for general-purpose switching and amplifier applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	180	V
V_{CEO}	Collector-Emitter Voltage	120	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	12	A
I_B	Base Current	5	A
P_C	Collector Power Dissipation@ $T_C = 25^\circ\text{C}$	60	W
T_J	Junction Temperature	200	$^\circ\text{C}$
T_{stg}	Storage Temperature	-65~200	$^\circ\text{C}$



isc Silicon NPN Power Transistors**BDY54****ELECTRICAL CHARACTERISTICS****T_C=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEQ(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 30mA; I _B = 0	120			V
V _{CE(sat)-1}	Collector-Emitter Saturation Voltage	I _C = 4A; I _B = 0.4A			1.1	V
V _{CE(sat)-2}	Collector-Emitter Saturation Voltage	I _C = 7A; I _B = 1.4A			2.2	V
V _{BE(sat)-1}	Base-Emitter Saturation Voltage	I _C = 4A; I _B = 0.4A			2.0	V
V _{BE(sat)-2}	Base-Emitter Saturation Voltage	I _C = 7A; I _B = 1.4A			2.5	V
I _{CEX}	Collector Cutoff Current	V _{CE} = 150V; V _{BE} =-1.5V, T _C =150°C			15	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 7V; I _C = 0			3.0	mA
h _{FE}	DC Current Gain	I _C = 2A; V _{CE} = 1.5V	20			
f _T	Current Gain-Bandwidth Product	I _C = 0.5A; V _{CE} = 4V; f=10MHz	20			MHz

Switching Times

t _{on}	Turn-On Time	I _C = 5A; I _B = 1A		0.3		μs
t _{off}	Turn-Off Time	I _C = 5A; I _{B1} = 1A; I _{B2} = -0.5A		1.8		μs

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