

isc Silicon NPN Power Transistor

BDY90A

DESCRIPTION

- High Current Capability
- Collector-Emitter Sustaining Voltage-
: $V_{CEQ(SUS)} = 100V(\text{Min})$
- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

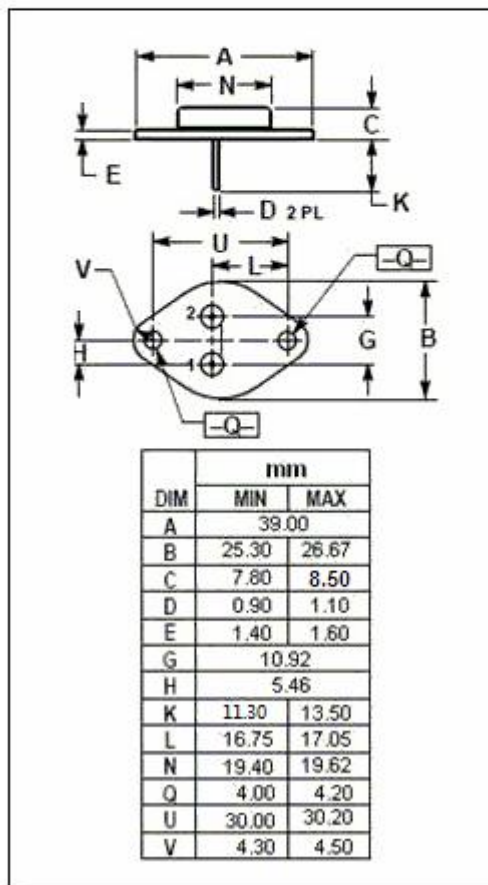
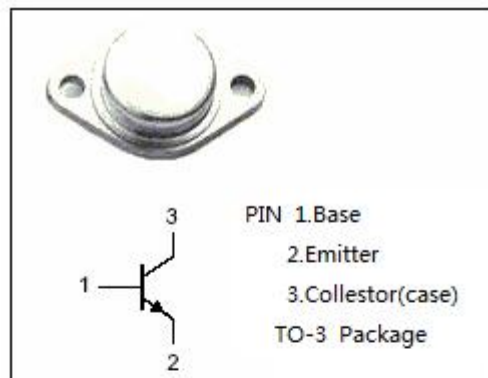
- Designed for use in converters, inverters, switching regulators and switching control amplifiers.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	120	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	12	A
I_{CM}	Collector Current-Peak	15	A
I_B	Base Current-Continuous	2	A
P_C	Collector Power Dissipation@ $T_C=25^\circ\text{C}$	60	W
T_J	Junction Temperature	175	$^\circ\text{C}$
T_{stg}	Storage Temperature	-65~175	$^\circ\text{C}$

THERMAL CHARACTERISTICS

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



isc Silicon NPN Power Transistor**BDY90A****ELECTRICAL CHARACTERISTICS****T_C=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CE0(SUS)}	Collector-Emitter Sustaining Voltage	I _C =30mA ; I _B =0	100			V
V _{CE(sat)-1}	Collector-Emitter Saturation Voltage	I _C = 5A; I _B = 0.5A			0.5	V
V _{CE(sat)-2}	Collector-Emitter Saturation Voltage	I _C = 12A; I _B = 1.2A			1.0	V
V _{BE(sat)-1}	Base-Emitter Saturation Voltage	I _C = 5A; I _B = 0.5A			1.2	V
V _{BE(sat)-2}	Base-Emitter Saturation Voltage	I _C = 12A; I _B = 1.2A			1.5	V
I _{EBO}	Emitter Cutoff Current	V _{EB} = 6V; I _C =0			0.1	mA
h _{FE-1}	DC Current Gain	I _C = 1A ; V _{CE} = 2V	30			
h _{FE-2}	DC Current Gain	I _C = 5A ; V _{CE} = 5V	30		120	
h _{FE-3}	DC Current Gain	I _C = 12A ; V _{CE} = 5V	20			
f _T	Current Gain-Bandwidth Product	I _C = 0.5A ; V _{CE} = 5V; f _{test} = 5MHz		70		MHz

Switching Times

t _{on}	Turn-On Time	I _C = 5A; I _{B1} = -I _{B2} =0.5A; V _{CC} = 30V			0.35	μ s
t _s	Storage Time				1.3	μ s
t _f	Fall Time				0.2	μ s

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