

isc Silicon NPN Power Transistor

BDY55X

DESCRIPTION

- Excellent Safe Operating Area
- DC Current Gain-
: $h_{FE}=20-100@I_C = 4A$
- Collector-Emitter Saturation Voltage-
: $V_{CE(sat)}= 1.1 V(Max)@ I_C = 4A$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

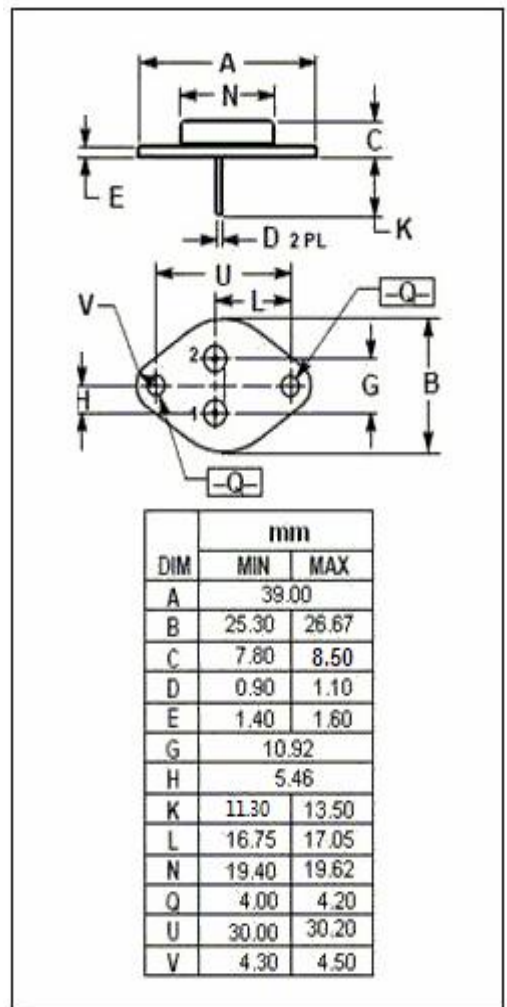
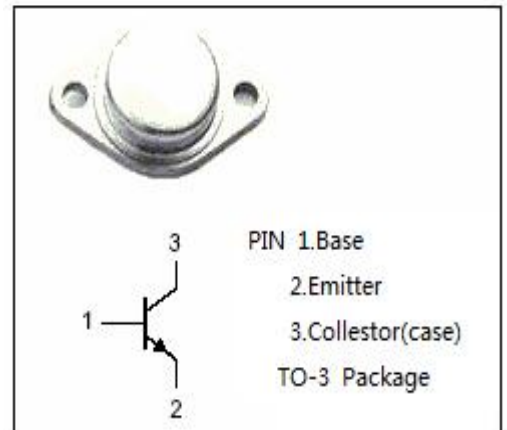
- Designed for general-purpose switching and amplifier applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	15	A
I_B	Base Current	7	A
P_C	Collector Power Dissipation@ $T_C=25^{\circ}C$	117	W
T_J	Junction Temperature	200	$^{\circ}C$
T_{stg}	Storage Temperature	-65~200	$^{\circ}C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance,Junction to Case	1.5	$^{\circ}C/W$



isc Silicon NPN Power Transistors**BDY55X****ELECTRICAL CHARACTERISTICS****T_C=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V _{CEO(SUS)}	Collector-Emitter Sustaining Voltage	I _C =30mA; I _B = 0	60		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 = 10A; I _B = 3.3A		2.5	V
V _{BE(on)}	Base-Emitter On Voltage	I _C = 4A; V _{CE} = 4V		1.8	V
I _{CEO}	Collector Cutoff Current	V _{CE} = 30V; I _B = 0		0.7	mA
I _{CEX}	Collector Cutoff Current	V _{CE} = 100V; V _{BE} =-1.5V V _{CE} = 100V; V _{BE} =-1.5V, T _C =150°C		5.0 30	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 7V; I _C = 0		5.0	mA
h _{FE-1}	DC Current Gain	I _C = 4A; V _{CE} = 4V	20	100	
h _{FE-2}	DC Current Gain	I _C = 10A; V _{CE} = 4V	10		
f _T	Current Gain-Bandwidth Product	I _C = 1A; V _{CE} = 4V; f=10MHz	10		MHz

Switching Times

t _{on}	Turn-On Time	I _C = 5A; I _B = 1A		0.5	μs
t _{off}	Turn-Off Time	I _C = 5A; I _{B1} = 1A; I _{B2} = -0.5A		2.0	μs

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