

isc Silicon NPN Power Transistor

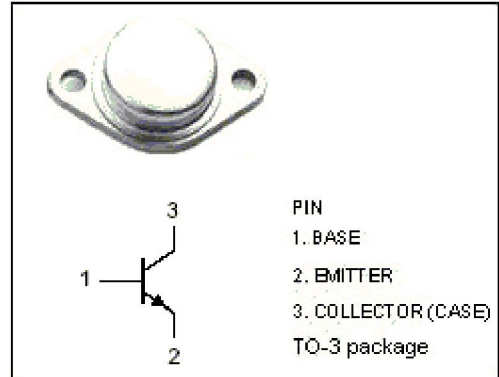
BDY20

DESCRIPTION

- Excellent Safe Operating Area
- DC Current Gain
 $-h_{FE}=20-70@I_C = 4A$
- Collector-Emitter Saturation Voltage-
 $: V_{CE(sat)}= 1.1V(Max)@ I_C = 4A$

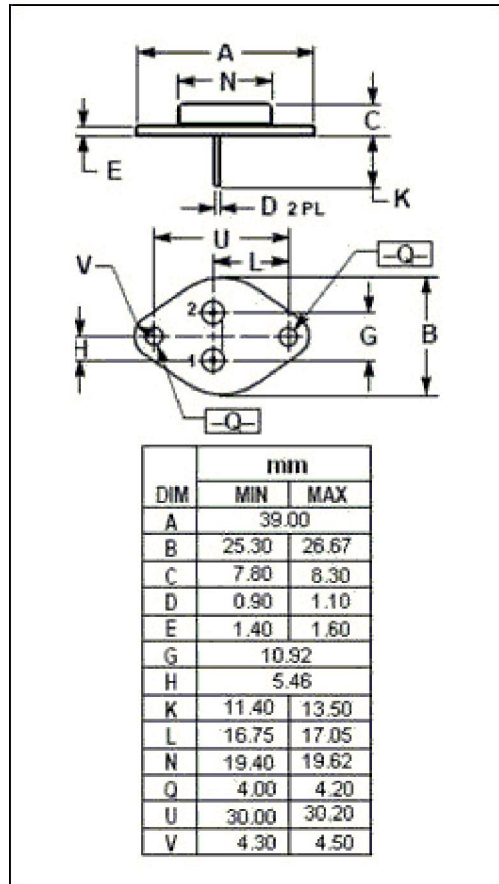
APPLICATIONS

- 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@ $T_C=25^{\circ}C$	115	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	1.52	$^{\circ}C/W$

isc Silicon NPN Power Transistor**BDY20****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=200\text{mA}$; $I_B=0$	60		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C= 4\text{A}$; $I_B= 0.4\text{A}$		1.1	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C= 10\text{A}$; $I_B= 3.3\text{A}$		3.0	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C= 4\text{A}$; $V_{CE}= 4\text{V}$		1.5	V
I_{CEO}	Collector Cutoff Current	$V_{CE}= 30\text{V}$; $I_B=0$		0.7	mA
I_{CEX}	Collector Cutoff Current	$V_{CE}= 100\text{V}$; $V_{BE(off)}= 1.5\text{V}$ $V_{CE}= 100\text{V}$; $V_{BE(off)}= 1.5\text{V}$, $T_C=150^{\circ}\text{C}$		1.0 5.0	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}= 7.0\text{V}$; $I_C=0$		5.0	mA
h_{FE-1}	DC Current Gain	$I_C= 4\text{A}$; $V_{CE}= 4\text{V}$	20	70	
h_{FE-2}	DC Current Gain	$I_C= 10\text{A}$; $V_{CE}= 4\text{V}$	5		
$I_{s/b}$	Second Breakdown Collector Current with Base Forward Biased	$V_{CE}= 40\text{V}$, $t= 1.0\text{s}$, Nonrepetitive	2.87		A
f_T	Current Gain-Bandwidth Product	$I_C= 0.5\text{A}$; $V_{CE}= 10\text{V}$	1		MHz