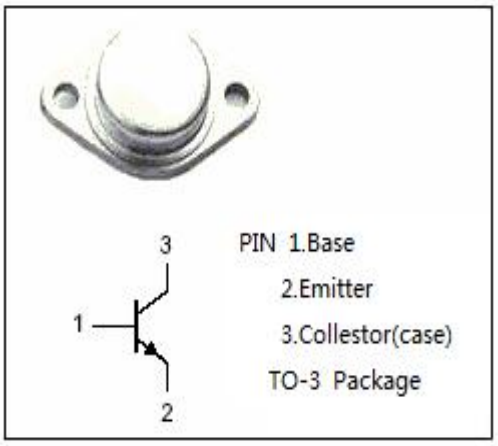
isc Silicon NPN Power Transistor — BDY13-6

DESCRIPTION

- Collector-Emitter Breakdown Voltage-
  : $V_{(BR)CEO}$= 60V(Min.)
- Collector-Emitter Saturation Voltage-
  : $V_{CE(sat)}$= 1V(Max)@ I_C = 3A
- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation



APPLICATIONS

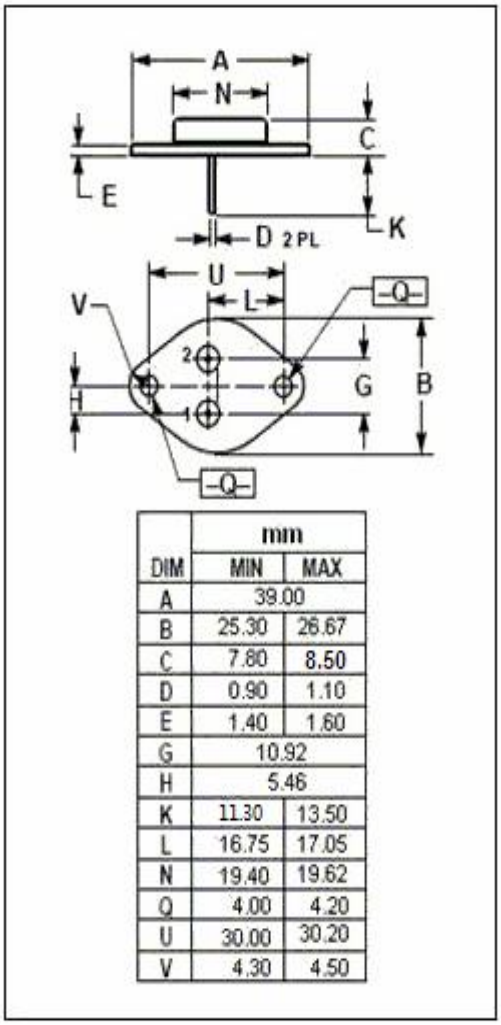
- Designed for LF signal powe amplifier applications.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	80	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	5	A
I_B	Base Current	0.3	A
P_C	Collector Power Dissipation@T_C=45℃	26	W
T_J	Junction Temperature	175	℃
T_{stg}	Storage Temperature	-65~125	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	5	℃/W



DIM	mm MIN	MAX
A	39.00	
B	25.30	26.67
C	7.80	8.50
D	0.90	1.10
E	1.40	1.60
G	10.92	
H	5.46	
K	11.30	13.50
L	16.75	17.05
N	19.40	19.62
Q	4.00	4.20
U	30.00	30.20
V	4.30	4.50

isc Silicon NPN Power Transistors BDY13-6

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C= 50mA; I_B= 0	80			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C= 100uA; I_E= 0	60			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 3A; I_B= 0.3A			1	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C=3A; I_B= 0.3A			1.3	V
I_{CES}	Collector Cutoff Current	V_{CE}= 60V; V_{BE}= 0			1.0	uA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 4V; I_C= 0			1.0	uA
h_{FE1}	DC Current Gain	I_C= 0.01A; V_{CE}= 1V		55		
h_{FE2}	DC Current Gain	I_C= 1A; V_{CE}= 1V	40	63	100	
h_{FE3}	DC Current Gain	I_C= 3A; V_{CE}= 2V		40		
f_T	Current Gain-Bandwidth Product	I_C= 0.2A; V_{CE}= 10V; f=20MHz	30			MHz
Switching Times						
t_{on}	Turn-On Time	I_C= 1A; I_B= 50mA			0.3	μs
t_{off}	Turn-Off Time	I_C= 1A; I_{B1}= 50mA;			1.5	μs