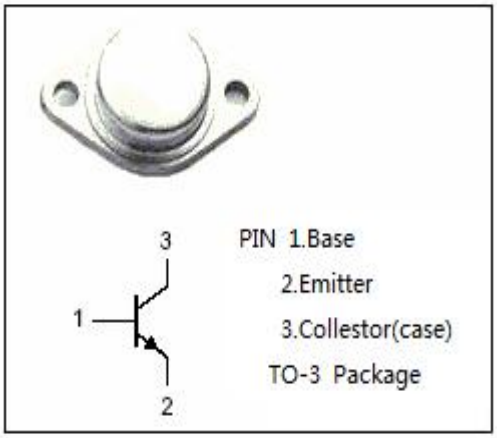
isc Silicon NPN Power Transistor — BDY42

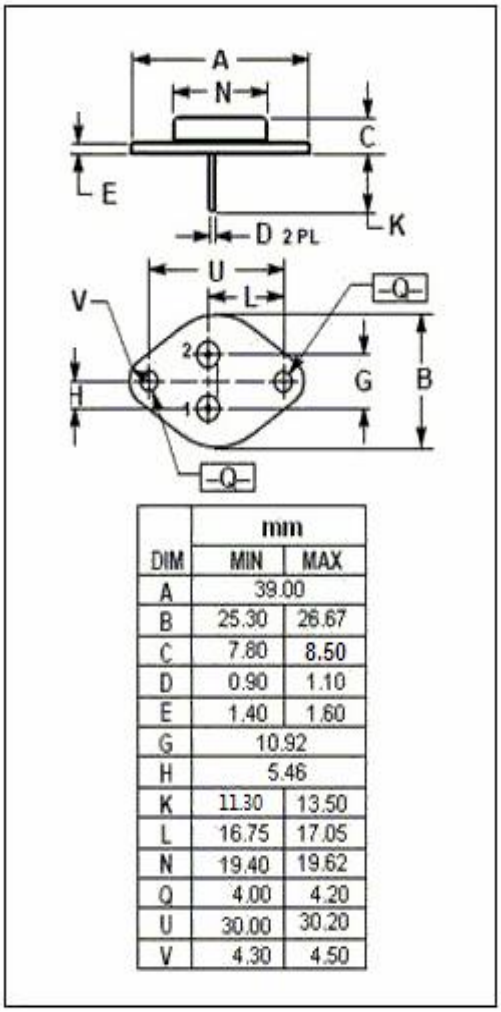
DESCRIPTION

- Collector-Emitter Breakdown Voltage-
  : $V_{(BR)CEO}$= 250V(Min.)
- DC Current Gain-
  : h_{FE}=20(Min.)@I_C = 1A
- Collector-Emitter Saturation Voltage-
  : $V_{CE(sat)}$= 1.5V(Max)@ I_C = 5A
- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation



APPLICATIONS

- Voltage regulator
- Inverter
- Switching mode power supply



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

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	400	V
V_{CES}	Collector-Emitter Voltage	400	V
V_{CEO}	Collector-Emitter Voltage	250	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	5	A
I_{CM}	Collector Current-Peak	10	A
I_B	Base Current	3	A
P_C	Collector Power Dissipation@T_C=25℃	60	W
T_J	Junction Temperature	175	℃
T_{stg}	Storage Temperature	-65~175	℃

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C= 30mA; I_B= 0	250		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C= 1mA; I_E= 0	400		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E= 1mA; I_C= 0	7		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 5A; I_B= 1.5A		1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 5A; I_B= 1.5A		2.0	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 400V; I_E= 0 V_{CB}= 400V; I_E= 0, T_C=150℃		0.2 2.0	mA
h_{FE-1}	DC Current Gain	I_C= 1A; V_{CE}= 2V	20		
h_{FE-2}	DC Current Gain	I_C= 5A; V_{CE}= 2V	5		
f_T	Current Gain-Bandwidth Product	I_C= 0.5A; V_{CE}= 10V	10		MHz
Switching times					
t_{on}	Turn-on Time	I_C= 2.5A; I_{B1}= -I_{B2}= 0.5A		0.5	μs
t_f	Fall Time			1.0	μs
t_{off}	Turn-off Time			4.0	μs

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