

isc Silicon NPN Power Transistor

BDY47

DESCRIPTION

- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 350V(\text{Min.})$
- DC Current Gain-
: $h_{FE} = 20(\text{Min.}) @ I_C = 2A$
- Collector-Emitter Saturation Voltage-
: $V_{CE(sat)} = 1.5V(\text{Max}) @ I_C = 15A$
- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

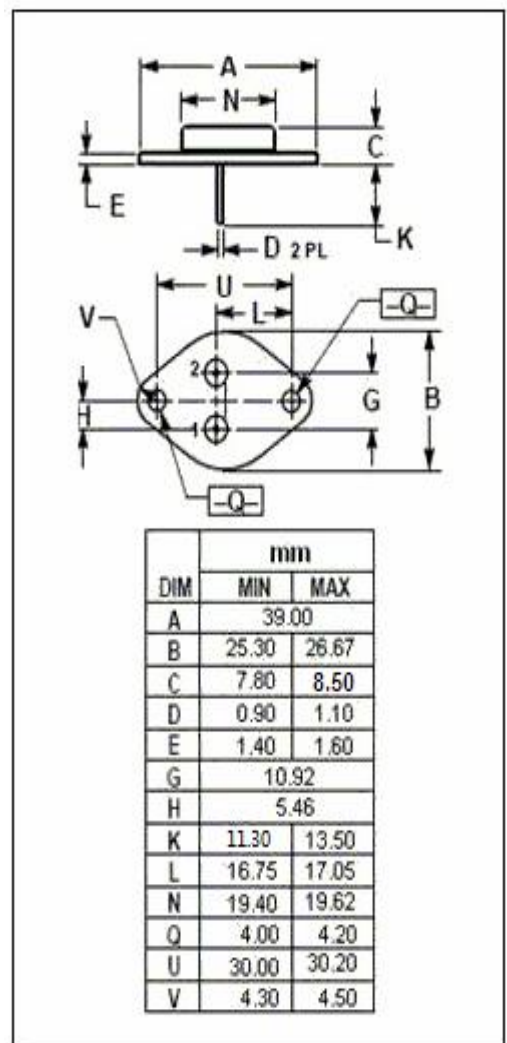
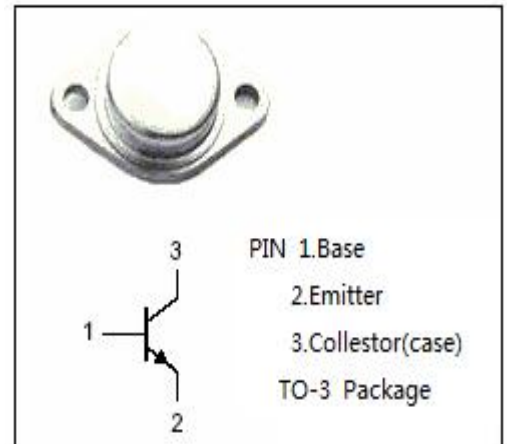
- Voltage regulator
- Inverter
- Switching mode power supply

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	750	V
V_{CES}	Collector-Emitter Voltage	750	V
V_{CEO}	Collector-Emitter Voltage	350	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	15	A
I_{CM}	Collector Current-Peak	17	A
I_B	Base Current	5	A
P_C	Collector Power Dissipation@ $T_C \leq 45^\circ C$	95	W
T_J	Junction Temperature	175	$^\circ C$
T_{stg}	Storage Temperature	-65~175	$^\circ C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance, Junction to Case	1.37	$^\circ C/W$



isc Silicon NPN Power Transistor**BDY47****ELECTRICAL CHARACTERISTICS****T_C=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _C = 30mA; I _B = 0	350		V
V _{(BR)CBO}	Collector-Base Breakdown Voltage	I _C = 1mA; I _E = 0	750		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 = 15A; I _B = 5A		1.5	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 15A; I _B = 5A		2.0	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 750V; I _E = 0 V _{CB} = 750V; I _E = 0, T _C =150°C		0.2 2.5	mA
h _{FE-1}	DC Current Gain	I _C = 2A; V _{CE} = 2V	20		
h _{FE-2}	DC Current Gain	I _C = 10A; 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 = 5A; I _{B1} = -I _{B2} = 1A		0.5	μs
t _f	Fall Time			1.0	μs
t _{off}	Turn-off Time			3.5	μs

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