

**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**

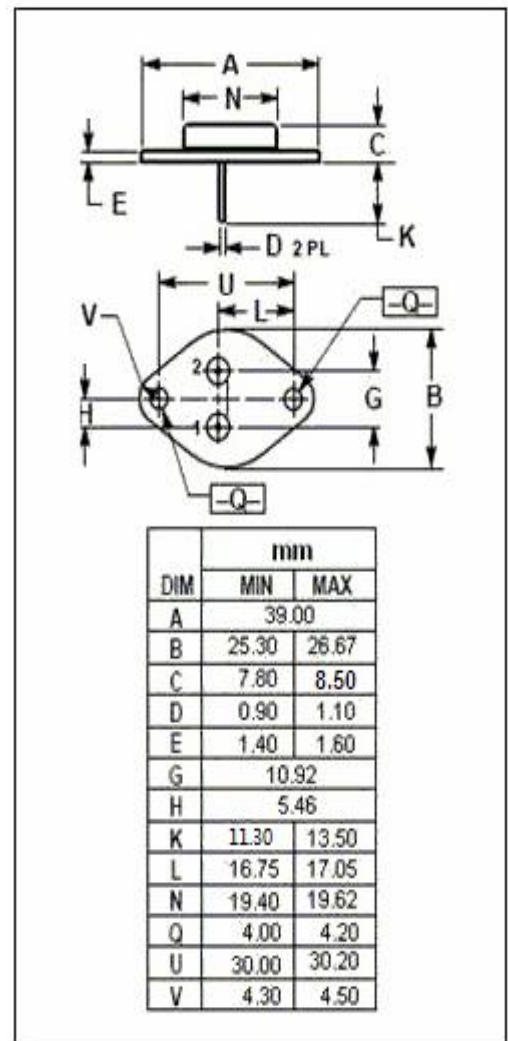
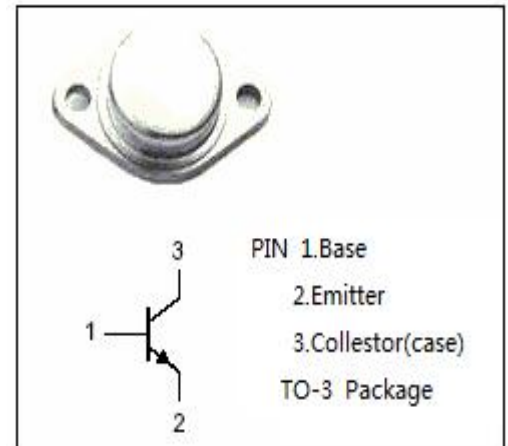
- Voltage regulator
- Inverter
- Switching mode power supply

**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<sub>C</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 30mA; I <sub>B</sub> = 0	350		V
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage	I <sub>C</sub> = 1mA; I <sub>E</sub> = 0	750		V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> = 1mA; I <sub>C</sub> = 0	7		V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 15A; I <sub>B</sub> = 5A		1.5	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 15A; I <sub>B</sub> = 5A		2.0	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 750V; I <sub>E</sub> = 0 V <sub>CB</sub> = 750V; I <sub>E</sub> = 0, T <sub>C</sub> =150°C		0.2 2.5	mA
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 2A; V <sub>CE</sub> = 2V	20		
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 10A; V <sub>CE</sub> = 2V	5		
f <sub>T</sub>	Current Gain-Bandwidth Product	I <sub>C</sub> = 0.5A; V <sub>CE</sub> = 10V	10		MHz

## Switching times

t <sub>on</sub>	Turn-on Time	I <sub>C</sub> = 5A; I <sub>B1</sub> = -I <sub>B2</sub> = 1A		0.5	μs
t <sub>f</sub>	Fall Time			1.0	μs
t <sub>off</sub>	Turn-off Time			3.5	μs

**NOTICE:**

ISC reserves the rights to make changes of the content herein the datasheet at any time without notification. The information contained herein is presented only as a guide for the applications of our products.

ISC products are intended for usage in general electronic equipment. The products are not designed for use in equipment which require specialized quality and/or reliability, or in equipment which could have applications in hazardous environments, aerospace industry, or medical field. Please contact us if you intend our products to be used in these special applications.

ISC makes no warranty or guarantee regarding the suitability of its products for any particular purpose, nor does ISC assume any liability arising from the application or use of any products, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages.