

isc Silicon NPN Power Transistor
BDY43
DESCRIPTION

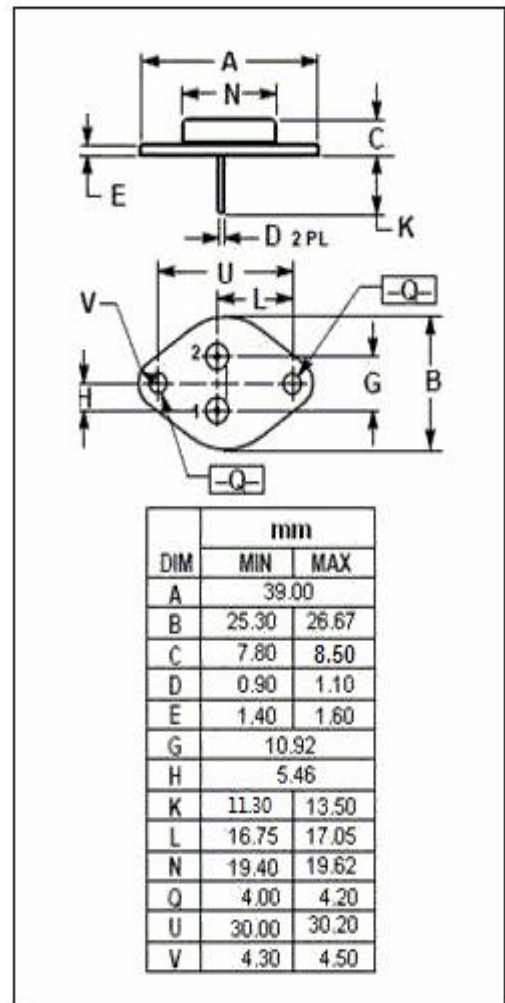
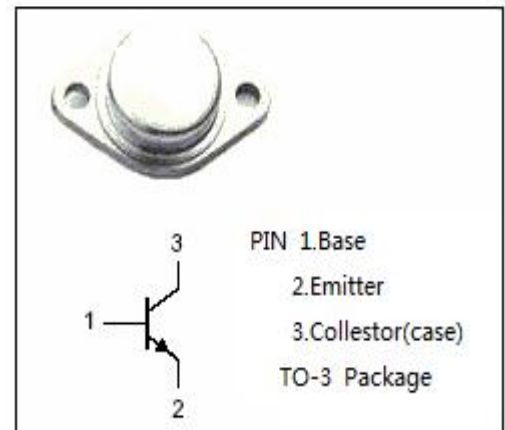
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 300V(\text{Min.})$
- DC Current Gain-
: $h_{FE} = 20(\text{Min.}) @ I_C = 1A$
- Collector-Emitter Saturation Voltage-
: $V_{CE(sat)} = 1.5V(\text{Max}) @ I_C = 5A$
- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Voltage regulator
- Inverter
- Switching mode power supply

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	600	V
V_{CES}	Collector-Emitter Voltage	600	V
V_{CEO}	Collector-Emitter Voltage	300	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@ $T_C = 25^\circ\text{C}$	60	W
T_J	Junction Temperature	175	$^\circ\text{C}$
T_{stg}	Storage Temperature	-65~175	$^\circ\text{C}$



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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	300		V
V _{(BR)CBO}	Collector-Base Breakdown Voltage	I _C = 1mA; I _E = 0	600		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} = 600V; I _E = 0 V _{CB} = 600V; I _E = 0, T _C =150°C		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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