

isc Silicon NPN Power Transistor

BUL49

DESCRIPTION

- Collector–Emitter Sustaining Voltage
: $V_{CEO(SUS)} = 450V(\text{Min.})$
- Collector Saturation Voltage
: $V_{CE(sat)} = 0.3V(\text{Max}) @ I_C = 1.0A$
- Very High Switching Speed
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

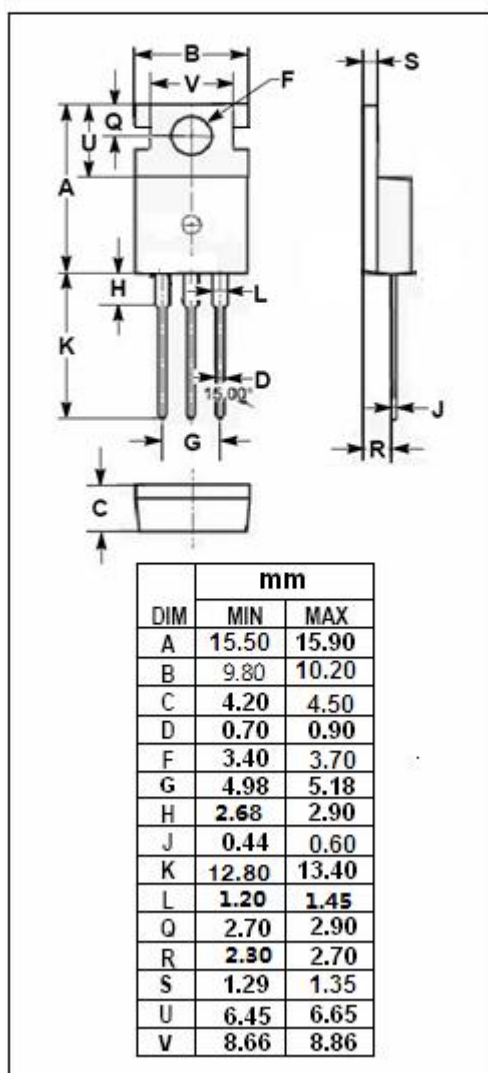
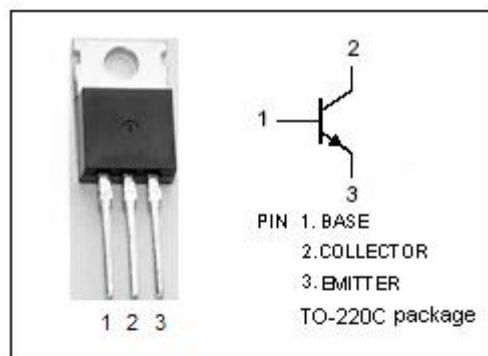
- Electronic transformers for halogen lamps
- Flyback and forward single transistor low power converters

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CES}	Collector-Emitter Voltage	850	V
V_{CEO}	Collector-Emitter Voltage	450	V
V_{EBO}	Emitter-Base Voltage	10	V
I_C	Collector Current-Continuous	5	A
I_{CM}	Collector Current-peak $t_p < 5ms$	10	A
I_B	Base Current-Continuous	2	A
I_{BM}	Base Current-peak $t_p < 5ms$	4	A
P_C	Collector Power Dissipation $T_C=25^{\circ}C$	80	W
T_j	Junction Temperature	150	$^{\circ}C$
T_{stg}	Storage Temperature Range	-65~150	$^{\circ}C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance, Junction to Case	1.56	$^{\circ}C/W$
$R_{th j-A}$	Thermal Resistance, Junction to Ambient	62.5	$^{\circ}C/W$



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ELECTRICAL CHARACTERISTICS

 $T_C = 25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 10\text{mA}$; $L = 25\text{mH}$	450			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 10\text{mA}$; $I_C = 0$	10			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C = 1\text{A}$; $I_B = 0.2\text{A}$			0.3	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C = 2\text{A}$; $I_B = 0.4\text{A}$			0.6	V
$V_{CE(sat)-3}$	Collector-Emitter Saturation Voltage	$I_C = 4\text{A}$; $I_B = 0.8\text{A}$			1.2	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C = 1\text{A}$; $I_B = 0.2\text{A}$			1.0	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C = 4\text{A}$; $I_B = 0.8\text{A}$			1.3	V
I_{CES}	Collector Cutoff Current	$V_{CE} = 850\text{V}$; $V_{BE} = 0$ $V_{CE} = 850\text{V}$; $V_{BE} = 0$, $T_C = 125^{\circ}\text{C}$			0.1 0.5	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 9\text{V}$; $I_C = 0$			0.1	mA
h_{FE-1}	DC Current Gain	$I_C = 10\text{mA}$; $V_{CE} = 5\text{V}$	10			
h_{FE-2}	DC Current Gain	$I_C = 0.5\text{A}$; $V_{CE} = 5\text{V}$			60	
h_{FE-3}	DC Current Gain	$I_C = 7\text{A}$; $V_{CE} = 10\text{V}$	4		10	

Switching Times, Resistive Load

t_s	Storage Time	$I_C = 2\text{A}$; $V_{CC} = 250\text{V}$; $I_{B1} = -I_{B2} = 0.4\text{A}$			3	μs
t_f	Fall Time				0.8	μs

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