

**isc Silicon NPN Power Transistor**
**BUL416T**
**DESCRIPTION**

- Collector–Emitter Sustaining Voltage  
:  $V_{CE(SUS)} = 800V(\text{Min.})$
- Low Collector Saturation Voltage  
:  $V_{CE(sat)} = 1.5V(\text{Max}) @ I_C = 2A$
- Very High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

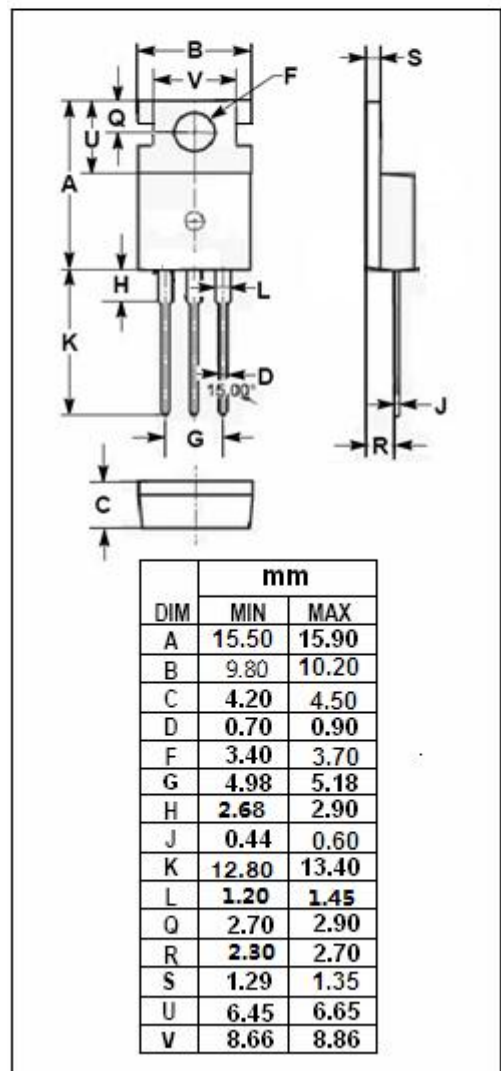
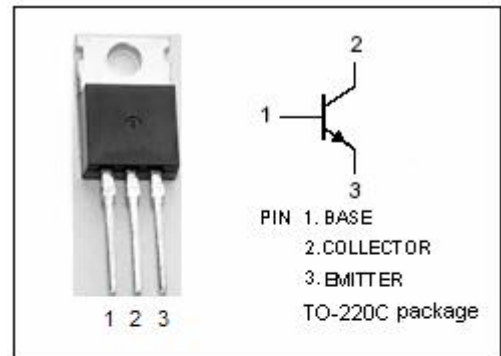
- Designed for use in lighting applications and low cost switch-mode power supplies.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CES}$	Collector-Emitter Voltage	1600	V
$V_{CEO}$	Collector-Emitter Voltage	800	V
$V_{EBO}$	Emitter-Base Voltage	9	V
$I_C$	Collector Current-Continuous	6	A
$I_{CM}$	Collector Current-peak $t_p < 5\text{ms}$	9	A
$I_B$	Base Current-Continuous	5	A
$I_{BM}$	Base Current-peak $t_p < 5\text{ms}$	8	A
$P_C$	Collector Power Dissipation $T_C=25^\circ\text{C}$	110	W
$T_j$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-65~150	$^\circ\text{C}$

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.14	$^\circ\text{C}/\text{W}$
$R_{th\ j-A}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ\text{C}/\text{W}$



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**ELECTRICAL CHARACTERISTICS**

 T<sub>c</sub> =25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 100mA; I <sub>B</sub> =0	800			V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> = 10mA; I <sub>C</sub> = 0	9			V
V <sub>CE(sat)-1</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 2A; I <sub>B</sub> = 0.4A			1.2	V
V <sub>CE(sat)-2</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 4A; I <sub>B</sub> = 1.33A			1.5	V
V <sub>BE(sat)-1</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 2A; I <sub>B</sub> = 0.4A			1.2	V
V <sub>BE(sat)-2</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 4A; I <sub>B</sub> = 1.33A			1.5	V
I <sub>CES</sub>	Collector Cutoff Current	V <sub>CE</sub> = 1600V; V <sub>BE</sub> = 0 V <sub>CE</sub> = 1600V; V <sub>BE</sub> = 0; T <sub>C</sub> = 125°C			0.1 0.5	mA
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = 800V; I <sub>B</sub> = 0			0.25	mA
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 10mA; V <sub>CE</sub> = 5V	10			
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 0.7A; V <sub>CE</sub> = 5V	18		32	

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