

isc Silicon NPN Power Transistor

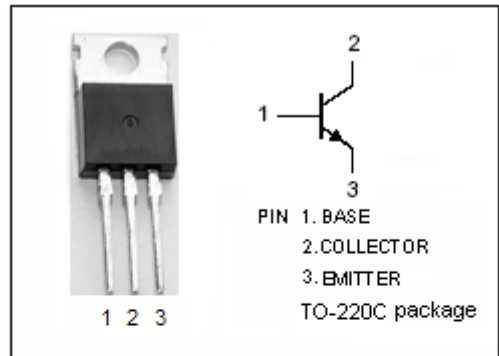
BUL742C

DESCRIPTION

- Collector–Emitter Breakdown Voltage  
:  $V_{(BR)CEO} = 400V(\text{Min.})$
- Collector Saturation Voltage  
:  $V_{CE(sat)} = 0.2V(\text{Max}) @ I_C = 0.8A$

APPLICATIONS

- Designed for electronic lamp ballast circuits switch-mode power supplies applications.

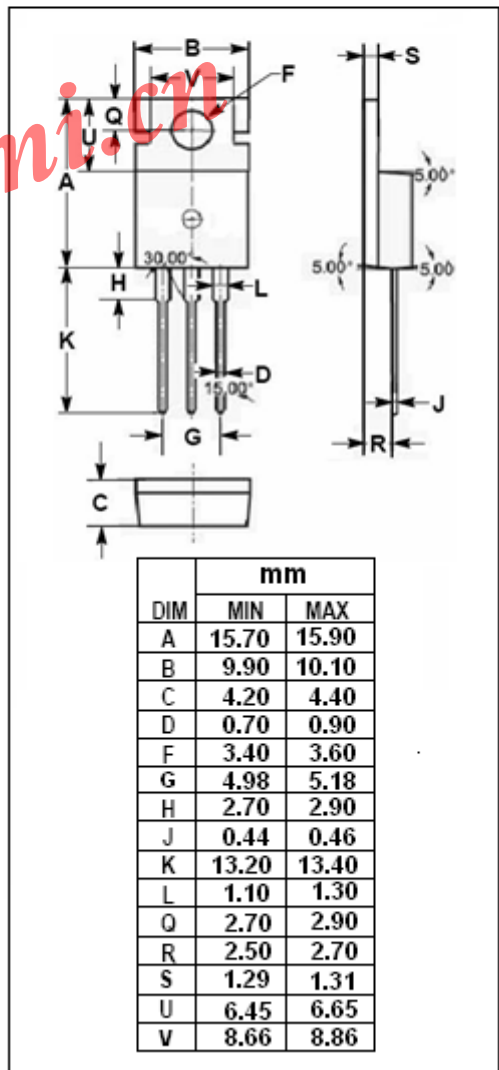


ABSOLUTE MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ )

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CES}$	Collector-Emitter Voltage	900	V
$V_{CEW}$	Collector-Emitter Voltage	500	V
$V_{CEO}$	Collector-Emitter Voltage	400	V
$V_{EBO}$	Emitter-Base Voltage	11	V
$I_C$	Collector Current-Continuous	5	A
$I_{CM}$	Collector Current-peak	7.5	A
$I_B$	Base Current-Continuous	2.5	A
$I_{BM}$	Base Current-peak	4	A
$P_C$	Collector Power Dissipation $T_C=25^\circ\text{C}$	50	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	2.5	$^\circ\text{C}/\text{W}$



## isc Silicon NPN Power Transistor

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## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 500\text{mA}$ ; $L = 125\text{mH}$ , $I_{\text{measure}} = 100\text{mA}$	400			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 1\text{mA}$ ; $I_C = 0$	11			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C = 0.8\text{A}$ ; $I_B = 0.2\text{A}$			0.2	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C = 2.5\text{A}$ ; $I_B = 0.8\text{A}$			0.4	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C = 0.8\text{A}$ ; $I_B = 0.2\text{A}$			1.0	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C = 2.5\text{A}$ ; $I_B = 0.8\text{A}$			1.2	V
$I_{CES}$	Collector Cutoff Current	$V_{CES} = 900\text{V}$ ; $V_{EB} = 0$ $V_{CES} = 900\text{V}$ ; $V_{EB} = 0$ , $T_C = 150^\circ\text{C}$			10 200	$\mu\text{A}$
$h_{FE-1}$	DC Current Gain	$I_C = 10\text{mA}$ ; $V_{CE} = 2\text{V}$	15			
$h_{FE-2}$	DC Current Gain	$I_C = 0.8\text{A}$ ; $V_{CE} = 2\text{V}$	15			
$h_{FE-3}$	DC Current Gain	$I_C = 2.5\text{A}$ ; $V_{CE} = 2\text{V}$	7			
$h_{FE-4}$	DC Current Gain	$I_C = 5\text{A}$ ; $V_{CE} = 2\text{V}$	4			
$C_{OB}$	Output Capacitance	$I_E = 0$ ; $V_{CB} = 10\text{V}$ ; $f = 1\text{MHz}$			60	pF
$V_{CEW}$	Collector-Emitter Working Voltage	$V_S = 50\text{V}$ ; $L = 1\text{mH}$ ; $I_C = 2.5\text{A}$ ; $I_{B1} = -I_{B2} = 0.5\text{A}$ ; $V_{BE(off)} = -5\text{V}$	500			V
$f_T$	Current-Gain—Bandwidth Product	$I_C = 0.2\text{A}$ ; $V_{CE} = 10\text{V}$ ; $f = 1\text{MHz}$	4			MHz