

ISC Silicon NPN Power Transistor

BUL810

DESCRIPTION

- High Voltage Capability
- High Switching Speed

APPLICATIONS

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

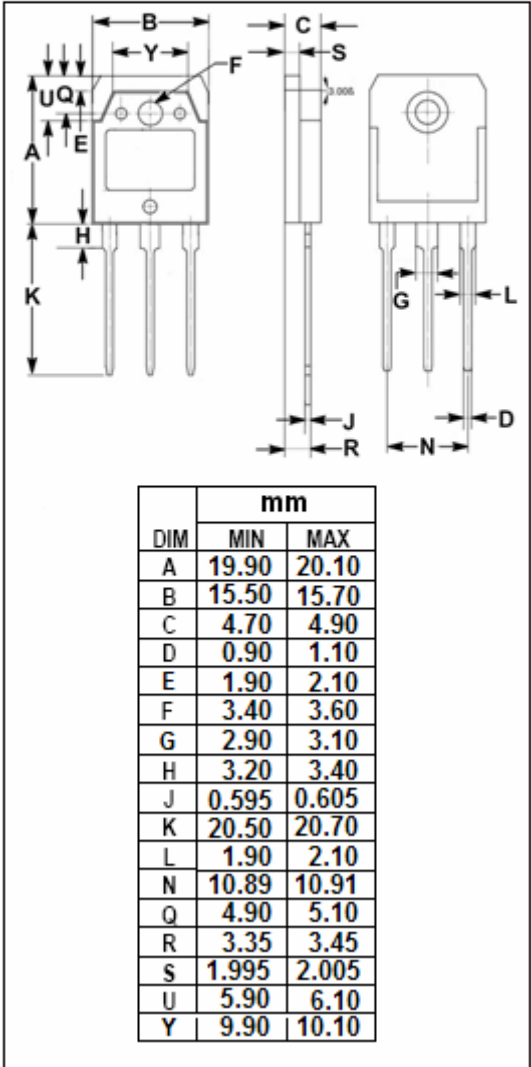
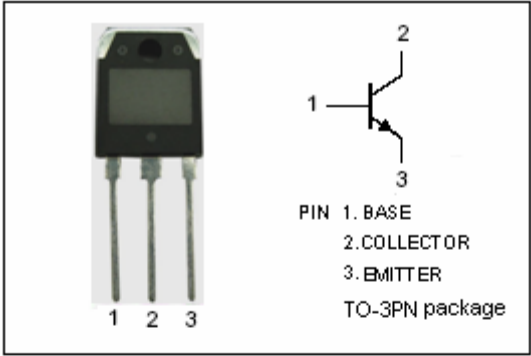
- Electronic transformer for halogen lamps
- Electronic ballasts for fluorescent lighting
- Switch mode power supplies

ABSOLUTE MAXIMUM RATINGS(T_a=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
V _{CBO}	Collector-Base Voltage	1000	V
V _{CEO}	Collector-Emitter Voltage	500	V
V _{EBO}	Emitter-Base Voltage	9	V
I _C	Collector Current-Continuous	15	A
I _{CM}	Collector Current-peak (tp <5 ms)	22	A
I _B	Base Current-Continuous	5	A
I _{BM}	Base Current-peak (tp <5 ms)	10	A
P _C	Collector Power Dissipation @T _C =25°C	125	W
T _j	Junction Temperature	150	°C
T _{stg}	Storage Temperature Range	-65~150	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R _{th j-c}	Thermal Resistance,Junction-Case	1.0	°C/W
R _{th j-a}	Thermal Resistance,Junction-Ambient	30	°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	$I_C=100\text{mA}$; $L=25\text{mH}$	450			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=10\text{mA}$; $I_C=0$	9			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=5\text{A}$; $I_B=1\text{A}$			1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=8\text{A}$; $I_B=1.6\text{A}$			1.5	V
$V_{CE(sat)-3}$	Collector-Emitter Saturation Voltage	$I_C=12\text{A}$; $I_B=2.4\text{A}$			5.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=5\text{A}$; $I_B=1\text{A}$			1.3	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=8\text{A}$; $I_B=1.6\text{A}$			1.6	V
I_{CES}	Collector Cutoff Current	$V_{CE}=1000\text{V}$; $V_{BE}=0$; $V_{CE}=1000\text{V}$; $V_{BE}=0$; $T_C=125^{\circ}\text{C}$			0.1 0.5	mA
I_{CEO}	Collector Cutoff Current	$V_{CE}=450\text{V}$; $I_B=0$			0.25	mA
h_{FE-1}	DC Current Gain	$I_C=5\text{A}$; $V_{CE}=5\text{V}$	10		40	
h_{FE-2}	DC Current Gain	$I_C=10\text{mA}$; $V_{CE}=5\text{V}$	10			

Switching Times (inductive load)

t_s	Storage Time	$I_C=8\text{A}$; $I_{B1}=1.6\text{A}$; $V_{BE(off)}=-5\text{V}$ $R_{BB}=0.4\Omega$, $V_{CL}=350\text{V}$, $L=200\mu\text{H}$		1.5	2.3	μs
t_f	Fall Time			55	110	ns