

isc Silicon NPN Power Transistor

BUS48AP

DESCRIPTION

- High Voltage Capability
- High Current Capability
- Fast Switching Speed

APPLICATIONS

Designed for high-voltage,high-speed, power switching in inductive circuits where fall time is critical. They are particularly suited for line-operated switchmode applications such as:

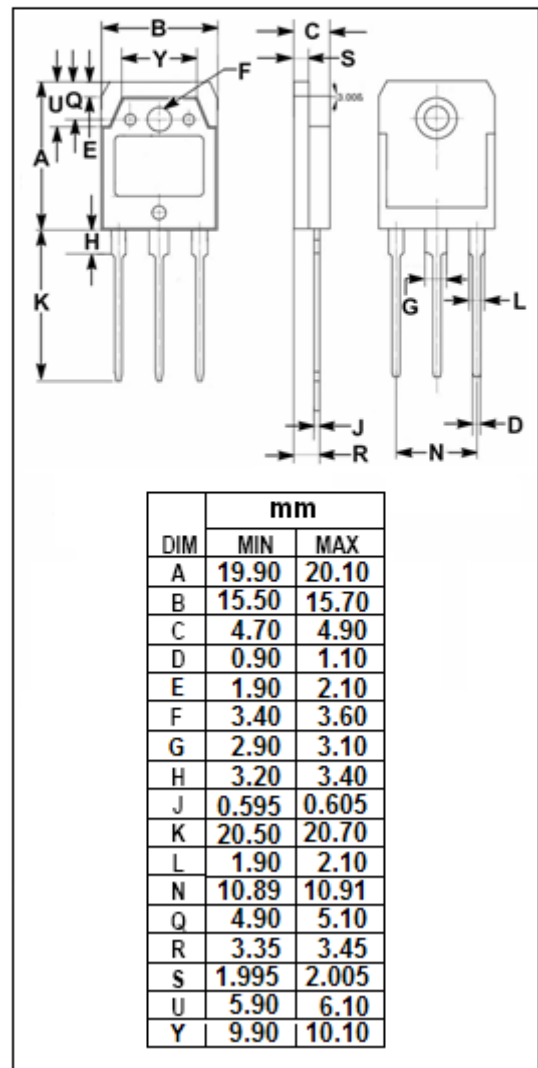
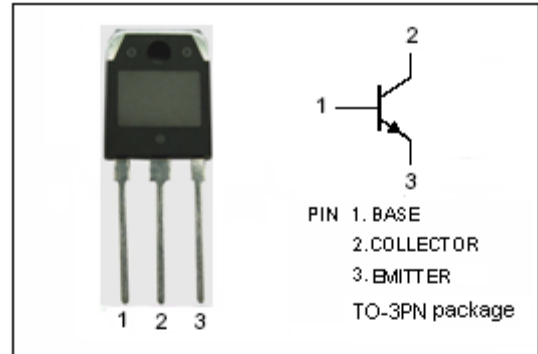
- Switching regulators
- Inverters
- Solenoid and relay drivers
- Motor controls
- Deflection circuits

Absolute maximum ratings(Ta=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
V _{CEV}	Collector-Emitter Voltage	1000	V
V _{CEO}	Collector-Emitter Voltage	450	V
V _{EBO}	Emitter-Base Voltage	7	V
I _C	Collector Current-Continuous	15	A
I _{CM}	Collector Current-Peak	30	A
I _B	Base Current-Continuous	5	A
I _{BM}	Base Current-peak	20	A
P _C	Collector Power Dissipation @T _C =25°C	150	W
T _j	Junction Temperature	175	°C
T _{stg}	Storage Temperature Range	-65~175	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R _{th j-c}	Thermal Resistance,Junction to Case	1.0	°C/W



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=0.2\text{A}; I_B=0; L=25\text{mH}$	450		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=50\text{mA}; I_C=0$	7		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=8\text{A}; I_B=1.6\text{A}$ $I_C=8\text{A}; I_B=1.6\text{A}; T_C=100^{\circ}\text{C}$		1.5 2.0	V
$V_{CE(sat)-2}$	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	$I_C=8\text{A}; I_B=1.6\text{A}$ $I_C=8\text{A}; I_B=1.6\text{A}; T_C=100^{\circ}\text{C}$		1.6 1.6	V
I_{CER}	Collector Cutoff Current	$V_{CE}=\text{rated } V_{CER}; R_{BE}=10\ \Omega$ $V_{CE}=\text{rated } V_{CER}; R_{BE}=10\ \Omega; T_C=125^{\circ}\text{C}$		0.5 3.0	mA
I_{CEV}	Collector Cutoff Current	$V_{CE}=\text{rated } V_{CES}; V_{BE(off)}=1.5\text{V}$ $V_{CE}=\text{rated } V_{CES}; V_{BE(off)}=1.5\text{V}; T_C=125^{\circ}\text{C}$		0.2 2.0	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$		0.1	mA
h_{FE}	DC Current Gain	$I_C=8\text{A}; V_{CE}=5\text{V}$	8		
C_{OB}	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{\text{test}}=1\text{MHz}$		350	pF

Switching times Resistive Load

t_d	Delay Time	$I_C=10\text{A}; I_{B1}=2\text{A}; V_{CC}=250\text{V};$ $V_{BE(off)}=5\text{V}; \text{Duty Cycle} \leq 2\%$		0.2	μs
t_r	Rise Time			0.7	μs
t_s	Storage Time			2.0	μs
t_f	Fall Time			0.4	μs