

# isc Silicon NPN Power Transistor

## BUP22

### DESCRIPTION

- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 300V(\text{Min})$
- High Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

### APPLICATIONS

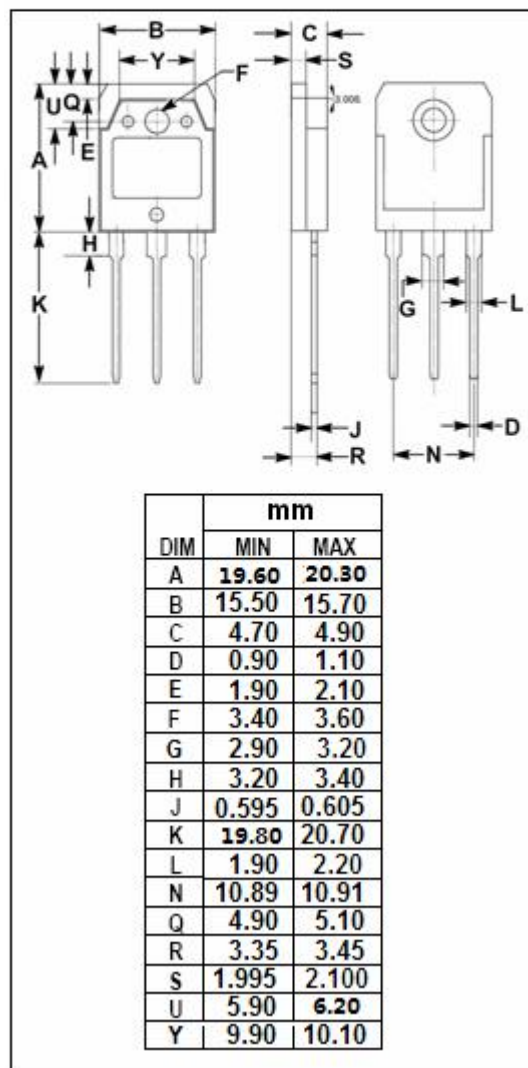
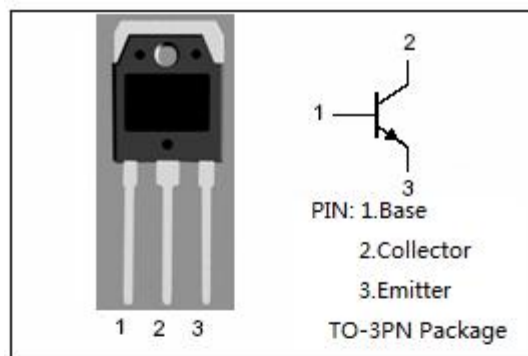
- Designed for use in converters, inverters, switching-regulators, motor control systems etc.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CES}$	Collector- Emitter Voltage $V_{BE}=0$	550	V
$V_{CEO}$	Collector-Emitter Voltage	300	V
$V_{EBO}$	Emitter-Base Voltage	9	V
$I_C$	Collector Current-Continuous	8	A
$I_{CM}$	Collector Current-Peak	20	A
$I_B$	Base Current-Continuous	4	A
$I_{BM}$	Base Current-Peak	6	A
$P_C$	Collector Power Dissipation @ $T_C=25^{\circ}\text{C}$	125	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	1.0	$^{\circ}\text{C/W}$



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## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEQ(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 50\text{mA}; I_B = 0$	300			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 6\text{A}; I_B = 0.67\text{A}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 6\text{A}; I_B = 0.67\text{A}$			1.5	V
$I_{CES}$	Collector Cutoff Current	$V_{CE} = V_{CESmax}; V_{BE} = 0$ $V_{CE} = V_{CESmax}; V_{BE} = 0; T_J = 125^{\circ}\text{C}$			1 2	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = 9\text{V}; I_C = 0$			10	mA
$h_{FE}$	DC Current Gain	$I_C = 1\text{A}; V_{CE} = 5\text{V}$		25		

Switching Times; Resistive Load

$t_{on}$	Turn-On Time	$I_C = 6\text{A}; I_{B1} = -I_{B2} = 0.67\text{A}$		0.5		$\mu\text{s}$
$t_s$	Storage Time			3.0		$\mu\text{s}$
$t_f$	Fall Time			0.3		$\mu\text{s}$

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