

isc Silicon NPN Darlington Power Transistor
BU323P
DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 350V(\text{Min.})$
- High Reliability
- Low Collector Saturation Voltage
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

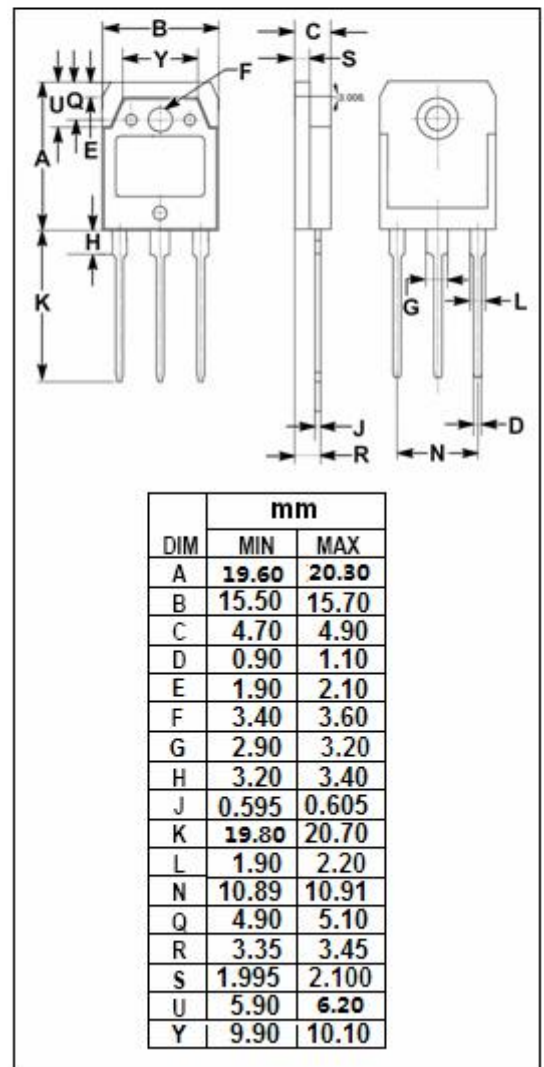
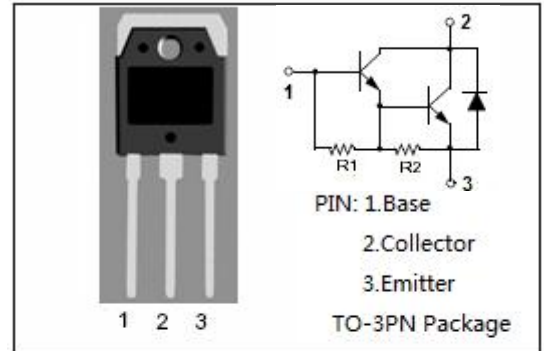
- Automotive ignition
- Switching regulator
- Motor control applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	500	V
V_{CEO}	Collector-Emitter Voltage	350	V
V_{EBO}	Emitter-Base Voltage	8	V
I_C	Collector Current- Continuous	10	A
I_{CM}	Collector Current-Peak	16	A
I_B	Base Current	3	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°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
V _{CE(sus)}	Collector-Emitter Sustaining Voltage	I _C = 50mA; I _B = 0	350			V
V _{CE(sat)-1}	Collector-Emitter Saturation Voltage	I _C = 3A; I _B = 60mA			1.5	V
V _{CE(sat)-2}	Collector-Emitter Saturation Voltage	I _C = 6 A; I _B = 120mA			1.7	V
V _{CE(sat)-3}	Collector-Emitter Saturation Voltage	I _C = 10 A; I _B = 300mA			2.7	V
V _{BE(sat)-1}	Base-Emitter Saturation Voltage	I _C = 6 A; I _B = 120mA			2.2	V
V _{BE(sat)-2}	Base-Emitter Saturation Voltage	I _C = 10 A; I _B = 300mA			3.0	V
V _{BE(on)}	Base-Emitter On Voltage	I _C = 10A ; V _{CE} = 6V			2.5	V
I _{CB0}	Collector Cutoff Current	V _{CB} = RatedV _{CB0} ; I _E = 0			1.0	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 6V; I _C = 0			40	mA
h _{FE-1}	DC Current Gain	I _C = 3A; V _{CE} = 6V	300			
h _{FE-2}	DC Current Gain	I _C = 6A; V _{CE} = 6V	150		2000	
h _{FE-3}	DC Current Gain	I _C = 10A; V _{CE} = 6V	50			
V _{ECF}	C-E Diode Forward Voltage	I _F = 10A			3.5	V
C _{OB}	Output Capacitance	I _E = 0; V _{CB} = 10V; f= 100kHz		165		pF

Switching Times

t _s	Storage Time	V _{CC} = 12V; I _C = 6A, I _{B1} = -I _{B2} = 0.3A			15	μ s
t _f	Fall Time				15	μ s

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