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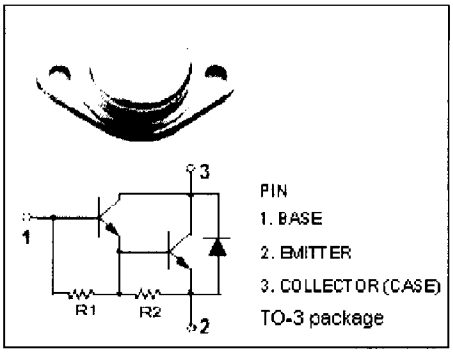
Silicon Darlington NPN Power Transistor — BU323

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
  : $V_{CEO(SUS)}$= 350V(Min.)
- High Reliability

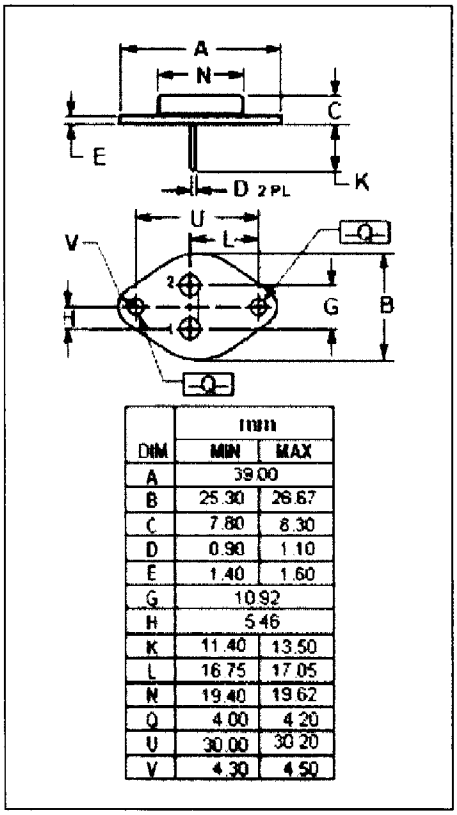
APPLICATIONS

- Automotive ignition
- Switching regulator
- Motor control applications



ABSOLUTE MAXIMUM RATINGS (T_a=25℃)

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℃	175	W
T_j	Junction Temperature	200	℃
T_{stg}	Storage Temperature Range	-65~200	℃



DIM	mm MIN	MAX
A	39.00	
B	25.30	26.67
C	7.80	8.30
D	0.90	1.10
E	1.40	1.60
G	10.92	
H	5.46	
K	11.40	13.50
L	16.75	17.05
N	19.40	19.62
Q	4.00	4.20
U	30.00	30.20
V	4.30	4.50

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance, Junction to Case	1.0	℃/W

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 0.2A; I_B= 0; L= 10mH	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_{CER}	Collector Cutoff Current	V_{CER}= RatedV_{CER};R_{BE}= 100 Ω			1.0	mA
I_{CBO}	Collector Cutoff Current	V_{CB}= RatedV_{CBO}; 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