

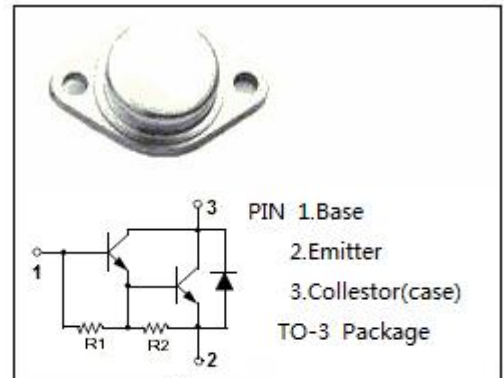
isc Silicon NPN Darlington Power Transistor

BU931Z
DESCRIPTION

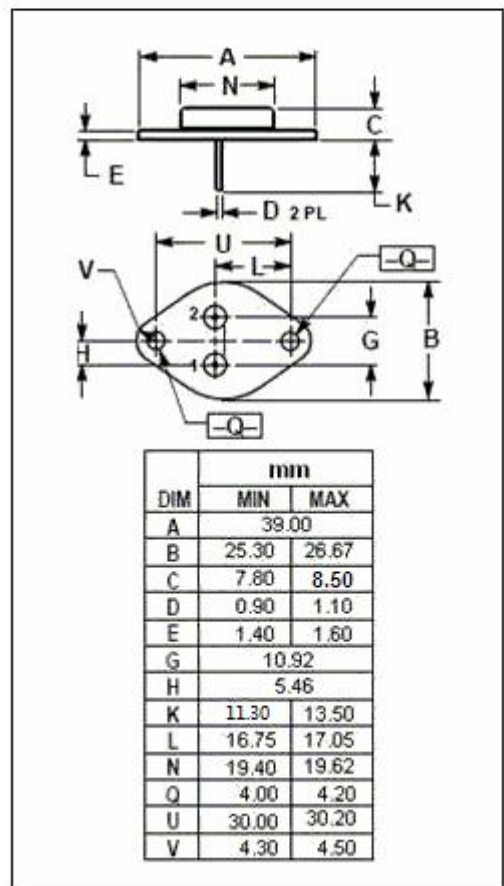
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 350V(\text{Min.})$
- High Reliability
- Low Collector Saturation Voltage
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- High ruggedness electronic ignitions
- High voltage ignition coil driver


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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	350	V
V_{CEO}	Collector-Emitter Voltage	350	V
V_{EBO}	Emitter-Base Voltage	8	V
I_C	Collector Current- Continuous	15	A
I_{CM}	Collector Current-Peak	20	A
I_B	Base Current	5	A
P_C	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	175	W
T_j	Junction Temperature	175	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~175	$^\circ\text{C}$


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
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C= 50\text{mA}; I_B= 0$	350			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C= 8\text{A}; I_B= 100\text{mA}$			1.8	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C= 10\text{A}; I_B= 150\text{mA}$			2.0	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C= 8\text{A}; I_B= 100\text{mA}$			2.2	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C= 10\text{A}; I_B= 150\text{mA}$			2.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C= 10\text{A}; V_{CE}= 2\text{V}$			2.4	V
I_{CBO}	Collector Cutoff Current	$V_{CB}= \text{Rated } V_{CBO}; I_E= 0$			0.5	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}= 5\text{V}; I_C= 0$			50	mA
h_{FE}	DC Current Gain	$I_C= 7\text{A}; V_{CE}= 1.6\text{V}$	150			
V_{ECF}	C-E Diode Forward Voltage	$I_F= 10\text{A}$			2.5	V
C_{OB}	Output Capacitance	$I_E= 0; V_{CB}= 10\text{V}; f= 100\text{kHz}$		165		pF

Switching Times

t_s	Storage Time	$V_{CC}= 12\text{V}; I_C= 8\text{A}, I_{B1}= -I_{B2}= 80\text{mA}$		8.5		μs
t_f	Fall Time			2.6		μs

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