

**isc Silicon NPN Darlington Power Transistor**
**BU931ZPFI**
**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**

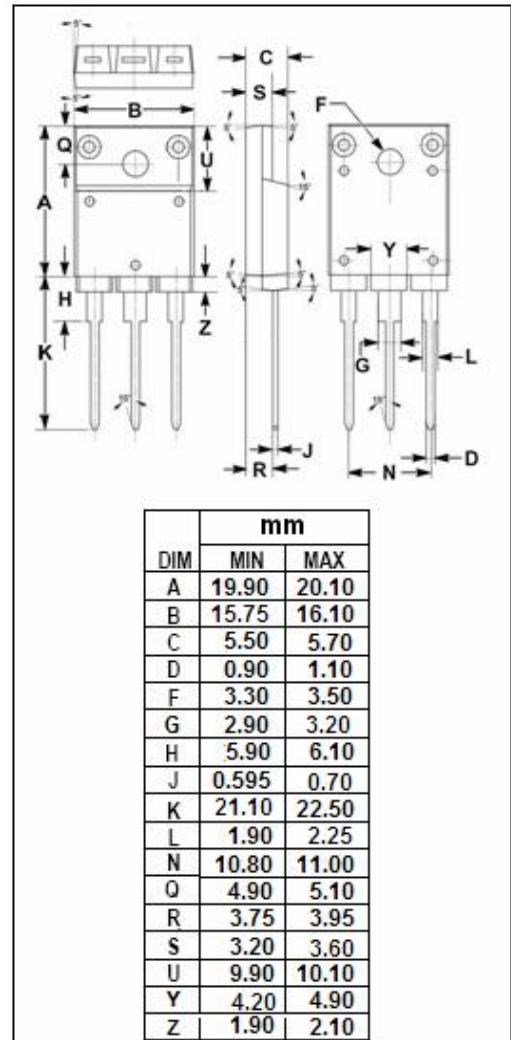
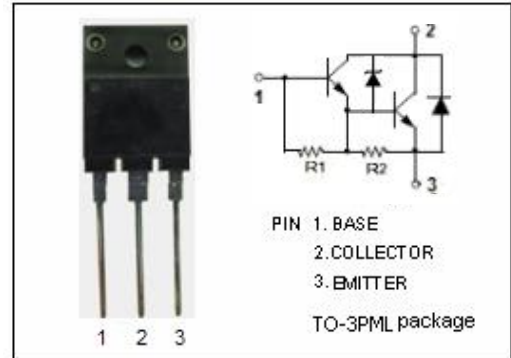
- High ruggedness electronic ignitions
- High voltage ignition coil driver

**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	6	V
$I_C$	Collector Current- Continuous	20	A
$I_B$	Base Current	5	A
$P_C$	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	60	W
$T_j$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-40~150	$^\circ\text{C}$

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	2.08	$^\circ\text{C/W}$



**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	$I_C= 7\text{ A}; I_B= 70\text{mA}$			1.6	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C= 8\text{ A}; I_B= 100\text{mA}$			1.8	V
$V_{CE(sat)-3}$	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
$V_{BE(on)-1}$	Base-Emitter On Voltage	$I_C= 5\text{ A}; V_{CE}= 2\text{V}$		1.67	2.0	V
$V_{BE(on)-2}$	Base-Emitter On Voltage	$I_C= 10\text{ A}; V_{CE}= 2\text{V}$		2.0	2.4	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}= \text{Rated } V_{CBO}; I_E= 0$			0.25	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}= 5\text{V}; I_C= 0$			50	mA
$h_{FE}$	DC Current Gain	$I_C= 5\text{ A}; V_{CE}= 2\text{V}$	300			
$V_{ECF}$	C-E Diode Forward Voltage	$I_F= 10\text{A}$			2.5	V

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