

isc Silicon NPN Darlington Power Transistor

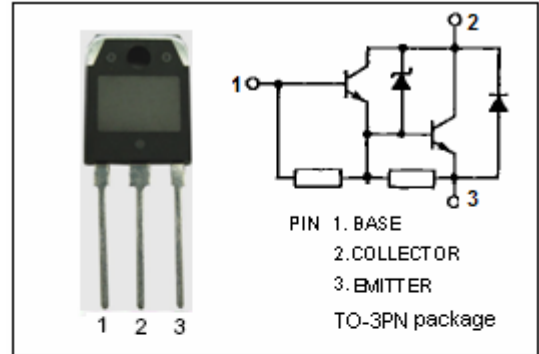
BU941ZP

DESCRIPTION

- Built In Clamping Zener
- High Operating Junction Temperature

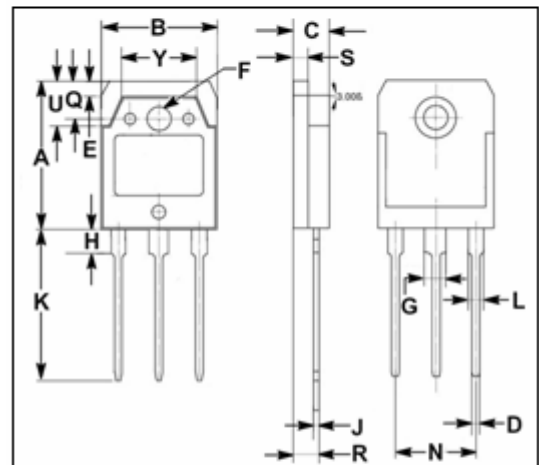
APPLICATIONS

- Designed for use in automotive environment as electronic ignition power actuators.



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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CEO}$	Collector-Emitter Voltage	350	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current-Continuous	15	A
$I_{CM}$	Collector Current-Peak	30	A
$I_B$	Base Current	1	A
$I_{BM}$	Base Current-Peak	5	A
$P_C$	Collector Power Dissipation @ $T_C=25^{\circ}\text{C}$	155	W
$T_J$	Junction Temperature	175	$^{\circ}\text{C}$
$T_{stg}$	Storage Temperature Range	-65~175	$^{\circ}\text{C}$



DIM	mm	
	MIN	MAX
A	19.90	20.10
B	15.50	15.70
C	4.70	4.90
D	0.90	1.10
E	1.90	2.10
F	3.40	3.60
G	2.90	3.10
H	3.20	3.40
J	0.595	0.605
K	20.50	20.70
L	1.90	2.10
N	10.89	10.91
Q	4.90	5.10
R	3.35	3.45
S	1.995	2.005
U	5.90	6.10
Y	9.90	10.10

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	0.97	$^{\circ}\text{C}/\text{W}$

**isc Silicon NPN Power Transistor****MJW16010A****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CL}$	Clamping Voltage	$I_C=100\text{mA}$	350		500	V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=8\text{A}; I_B=0.1\text{A}$			1.8	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=0.25\text{A}$			1.8	V
$V_{CE(sat)-3}$	Collector-Emitter Saturation Voltage	$I_C=12\text{A}; I_B=0.3\text{A}$			2.0	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C=8\text{A}; I_B=0.1\text{A}$			2.2	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=0.25\text{A}$			2.5	V
$V_{BE(sat)-3}$	Base-Emitter Saturation Voltage	$I_C=12\text{A}; I_B=0.3\text{A}$			2.7	V
$I_{CEO}$	Collector Cutoff Current	$V_{CE}=300\text{V}; I_B=0$ $V_{CE}=300\text{V}; I_B=0; T_C=125^{\circ}\text{C}$			0.1 0.5	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			20	mA
$h_{FE}$	DC Current Gain	$I_C=5\text{A}; V_{CE}=10\text{V}$	300			
$V_{ECF}$	C-E Diode Forward Voltage	$I_F=10\text{A}$			2.5	V

Switching times; Inductive load

$t_{stg}$	Storage Time	$I_C=7\text{A}; I_B=70\text{mA}, R_{BE}=47\Omega$ ; $V_{clamp}=300\text{V}, V_{BE}=0; L=7\text{mH}$		15		$\mu\text{s}$
$t_f$	Fall Time			0.5		$\mu\text{s}$