ST931ZT

HIGH VOLTAGE IGNITION COIL DRIVER NPN POWER DARLINGTON

- VERY RUGGED BIPOLAR TECHNOLOGY
- BUILT IN CLAMPING ZENER
- HIGH OPERATING JUNCTION TEMPERATURE

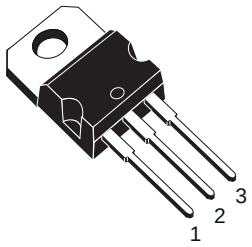
APPLICATIONS

- HIGH RUGGEDNESS ELECTRONIC IGNITIONS

DESCRIPTION

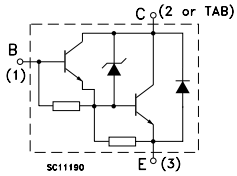
The ST931ZT is specifically designed for automotive electronic ignition.

The built in clamping Zener is characterized with tight voltage spread range (350V to 500V).



TO-220

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CEO}	Collector-Emitter Voltage (I_B = 0)	350	V
V_{EBO}	Emitter-Base Voltage (I_C = 0)	5	V
I_C	Collector Current	10	A
I_{CM}	Collector Peak Current	15	A
I_B	Base Current	1	A
I_{BM}	Base Peak Current	5	A
P_{tot}	Total Dissipation at T_c = 25 ^oC	125	W
T_{stg}	Storage Temperature	-65 to 175	^oC
T_j	Max. Operating Junction Temperature	175	^oC

THERMAL DATA

$R_{thj\text{-}case}$	Thermal Resistance Junction-case	Max	1.2	$^oC/W$

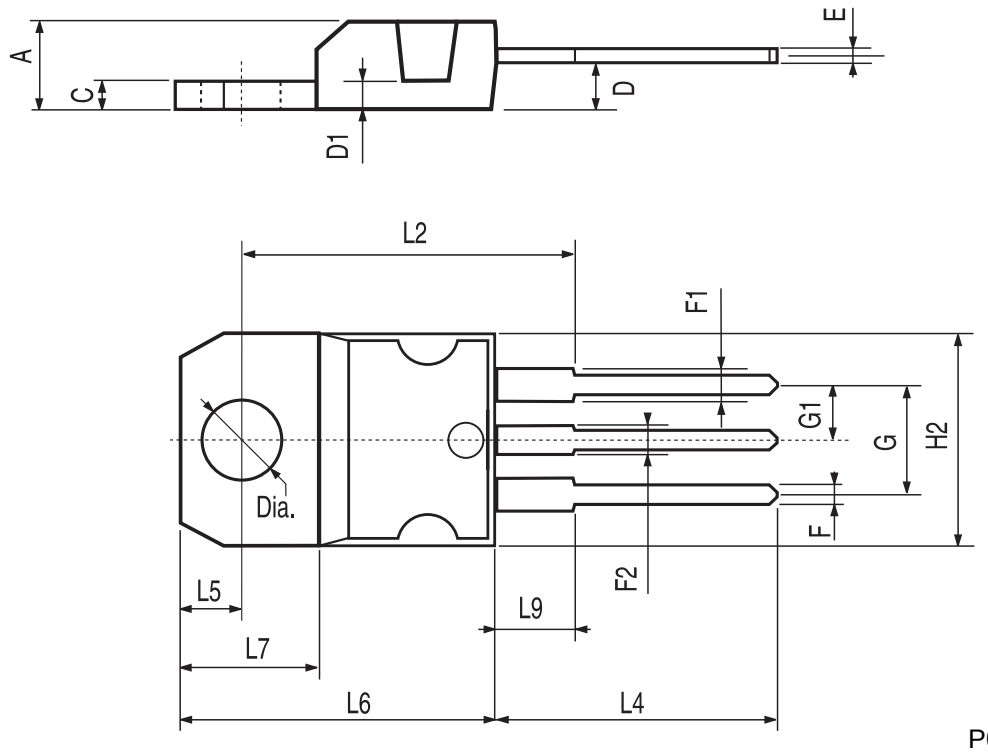
ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEO}	Collector Cut-off Current (I_B = 0)	V_{CE} = 300 V V_{CE} = 300 V T_j = 125 ^oC			100 0.5	µA mA
I_{EBO}	Emitter Cut-off Current (I_C = 0)	V_{EB} = 5 V			20	mA
V_{CL}*	Clamping Voltage	I_C = 100 mA	350		500	V
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	I_C = 7 A I_B = 70 mA I_C = 8 A I_B = 100 mA			1.6 1.8	V V
$V_{BE(sat)}$*	Base-Emitter Saturation Voltage	I_C = 7 A I_B = 70 mA I_C = 8 A I_B = 100 mA			2.2 2.4	V V
h_{FE}*	DC Current Gain	I_C = 5 A V_{CE} = 10 V	300			
V_F	Diode Forward Voltage	I_F = 8 A			2.5	V
	Functional Test (see fig. 1)	V_{CC} = 24 V L= 7 mH	8			A
t_s t_f	INDUCTIVE LOAD Storage Time Fall Time (see fig. 3)	V_{CC} = 12 V L= 7 mH V_{clamp} = 300 V I_C = 7 A I_B = 70 mA V_{BE} = 0 R_{BE} = 47 Ω		 15 0.5		 µs µs

* Pulsed: Pulse duration = 300 µs, duty cycle 1.5 %

TO-220 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
C	1.23		1.32	0.048		0.051
D	2.40		2.72	0.094		0.107
D1		1.27			0.050	
E	0.49		0.70	0.019		0.027
F	0.61		0.88	0.024		0.034
F1	1.14		1.70	0.044		0.067
F2	1.14		1.70	0.044		0.067
G	4.95		5.15	0.194		0.203
G1	2.4		2.7	0.094		0.106
H2	10.0		10.40	0.393		0.409
L2		16.4			0.645	
L4	13.0		14.0	0.511		0.551
L5	2.65		2.95	0.104		0.116
L6	15.25		15.75	0.600		0.620
L7	6.2		6.6	0.244		0.260
L9	3.5		3.93	0.137		0.154
DIA.	3.75		3.85	0.147		0.151



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