STZ150NF55T

N-CHANNEL TEMPERATURE SENSING 55V - P²PAK SAFeFET™ MOSFET

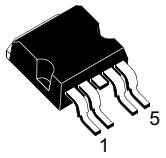
DATA BRIEF

General features

Type	V_{DSSS}	$R_{DS(on)}$	I_D
STZ150NF55T	55 V	<9 mΩ	40 A(1)

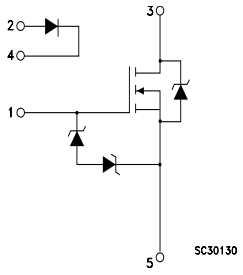
- INTEGRATED ESD PROTECTION
- INTEGRATED TEMPERATURE SENSING
- STANDARD VGS(th) LEVEL
- 175°C JUNCTION TEMPERATURE

Package



P²PAK

Internal schematic diagram



Applications

- HIGH CURRENT SWITCHING

Order codes

Sales Type	Marking	Package	Packaging
STZ150NF55T	Z150NF55T	P²PAK	TAPE & REEL

1 Absolute maximum ratings

Table 1. Absolute maximum ratings

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage (V_{GS} = 0)	55	V
V_{GS}	Gate-Source Voltage	± 18	V
I_D *Note* 1	Drain Current (continuous) at T_C = 25°C	40	A
I_D *Note* 1	Drain Current (continuous) at T_C = 100°C	40	A
I_{DM}	Drain Current (pulsed)	160	A
P_{TOT}	Total Dissipation at T_C = 25°C	250	W
	Derating Factor	1.67	W/°C
Vesd(G-S)	G-S ESD (HBM C=100pF, R=1.5kΩ)	>4	kV
E_{AS}	Single Pulse Avalanche Energy	TBD	mJ
T_j T_{stg}	Operating Junction Temperature Storage Temperature	-55 to 175	°C

2 Electrical characteristics

(T_{CASE} = 25 °C unless otherwise specified)

Table 2. On/Off

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	I_D = 250µA, V_{GS}= 0	55			V
I_{DSS}	Zero Gate Voltage Drain Current (V_{GS} = 0)	V_{DS} = Max Rating,			10	µA
I_{GSS}	Gate Body Leakage Current (V_{DS} = 0)	V_{GS} = ±15V, V_{DS} = 0			10	µA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}= V_{GS}, I_D = 250 µA	2		4	V
$R_{DS(on)}$	Static Drain-Source On Resistance	V_{GS}= 10 V, I_D= 20 A			9	mΩ
V_F	Temperature Sense diode forward voltage	I_f=250µA		3.5		V

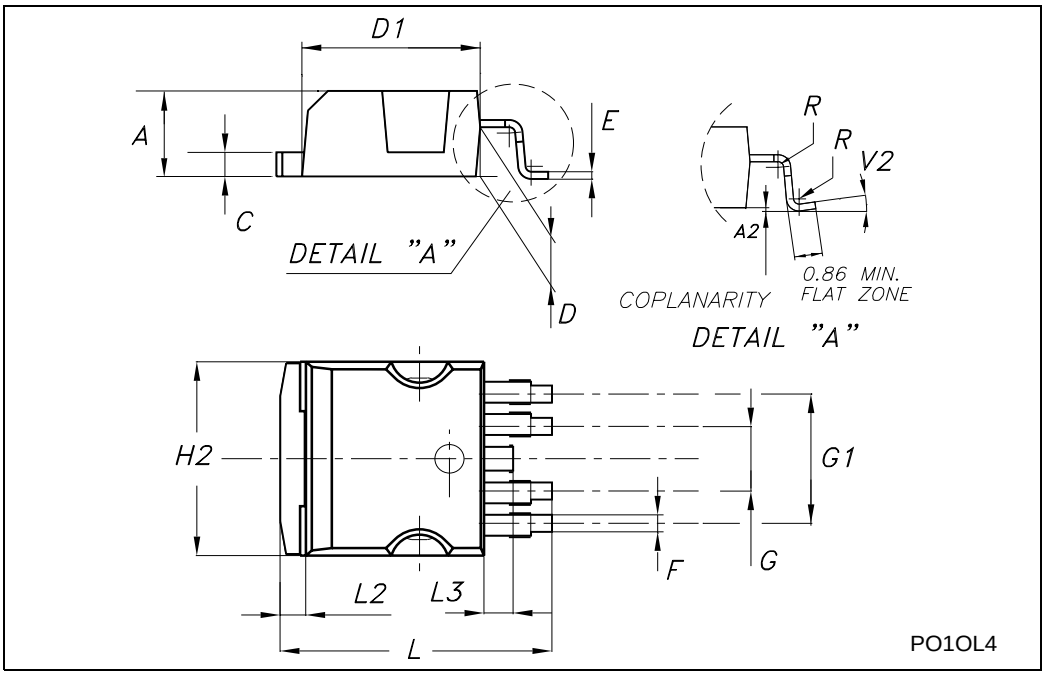
(1) Limited by wire bonding

3 Package mechanical data

In order to meet environmental requirements, ST offers these devices in ECOPACK® packages. These packages have a Lead-free second level interconnect . The category of second level interconnect is marked on the package and on the inner box label, in compliance with JEDEC Standard JESD97. The maximum ratings related to soldering conditions are also marked on the inner box label. ECOPACK is an ST trademark. ECOPACK specifications are available at: www.st.com

PENTAWATT SMD (P2PAK) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.30		4.80	0.169		0.188
A2	0.03		0.23	0.001		0.009
C	1.17		1.37	0.046		0.053
D	2.40		2.80	0.094		0.110
D1	8.95		9.35	0.352		0.368
E	0.35		0.55	0.013		0.021
F	0.80		1.05	0.031		0.041
G	3.20		3.60	0.125		0.141
G1	6.60		7.00	0.259		0.275
H2			10.40			0.409
L	13.59		14.39	0.535		0.566
L2	1.27		1.40	0.05		0.055
L3	1.30		1.70	0.051		0.066
R		0.30				
V2	0 d		8 d			



4 Revision History

Date	Revision	Changes
22-Jul-2005	1	Initial release.