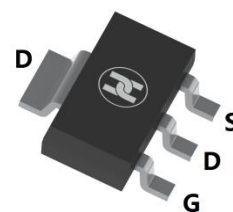
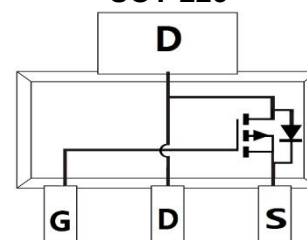


**P-CHANNEL HIGH VOLTAGE MOSFET**
**FEATURES**

- $V_{DS}=-200V, R_{DS(ON)} \leq 25\Omega @ V_{GS}=-10V, I_D=-200mA$
- Low On-Resistance
- Fast Switching Speed
- Complementary Type – ZVN2120G
- For Back-lighting and AC-DC Converters Applications
- Surface Mount device


**SOT-223**

**MECHANICAL DATA**

- Case: SOT-223
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Weight: 0.112 grams (approximate)

**MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$  unless otherwise noted)**

Parameter	Symbol	Value	Unit
Drain-source voltage	$V_{DS}$	-200	V
Gate-source voltage	$V_{GS}$	$\pm 20$	V
Continuous drain current	$I_D$	-200	mA
Pulsed drain current	$I_{DM}$	-1.2	A
Power dissipation	$P_D$	2.0	W
Operating and Storage temperature	$T_J, T_{STG}$	-55 ~ +150	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$  unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
<b>OFF CHARACTERISTICS</b>						
Drain-Source breakdown voltage	$V_{(BR)DSS}$	-200			V	$V_{GS}=0V, I_D=-1mA$
Zero gate voltage drain current	$I_{DSS}$			-10	$\mu\text{A}$	$V_{DS}=-200V, V_{GS}=0V,$
Gate-body leakage current	$I_{GSS}$			-100	$\mu\text{A}$	$V_{DS}=-160V, V_{GS}=0V, T_A=125^\circ\text{C}(2)$
Gate-threshold voltage	$V_{GS(th)}$	-1.5		-3.5	V	$V_{DS}=V_{GS}, I_D=-1mA$
<b>ON CHARACTERISTICS</b>						
On-State Drain Current(1)	$I_{D(ON)}$	-300			mA	$V_{DS}=-25V, V_{GS}=-10V$
Drain-source on-resistance (1)	$R_{DS(ON)}$			25	$\Omega$	$V_{GS}=-10V, I_D=-150mA$
Forward Trans-conductance (1)(2)	$g_{fs}$	50			mS	$V_{DS}=-25V, I_D=-150mA$
<b>DYNAMIC CHARACTERISTICS</b>						
Input capacitance (2)	$C_{iss}$			100	pF	$V_{DS}=-25V, V_{GS}=0V, f=1MHz$
Output capacitance(2)	$C_{oss}$			25	pF	
Reverse transfer capacitance(2)	$C_{rss}$			7	pF	
Turn-on delay time(2,3)	$t_{d(on)}$			7	nS	$V_{DD}=-25V, I_D=-150mA$
Turn-on rise time(2,3)	$t_r$			15	nS	
Turn-off delay time(2,3)	$t_{d(off)}$			12	nS	
Turn-off fall time(2,3)	$t_f$			15	nS	

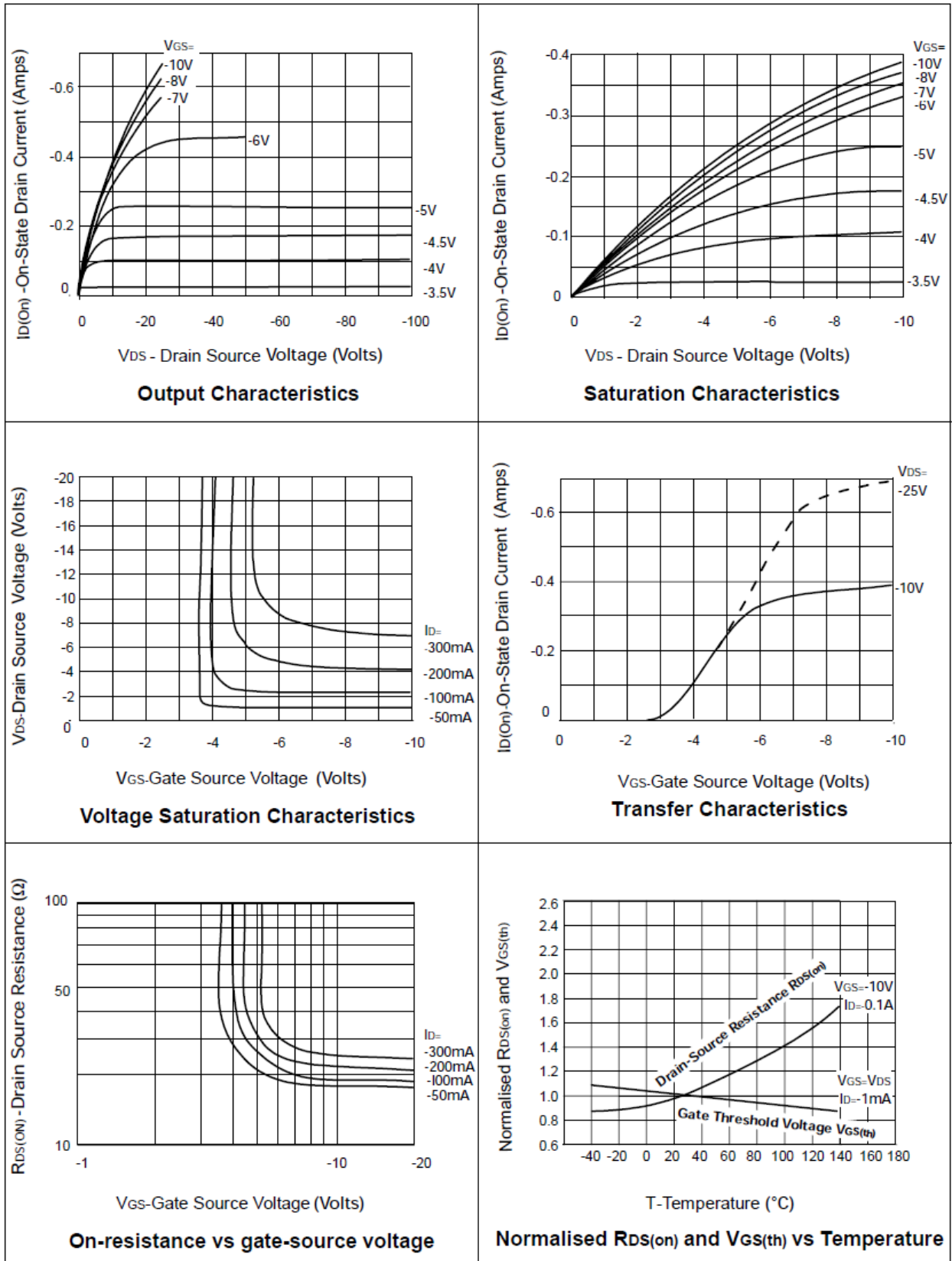
Notes: 1. Measured under pulsed conditions. Width=300 $\mu\text{s}$ . Duty cycle  $\leq 2\%$ .

2. Sample test.

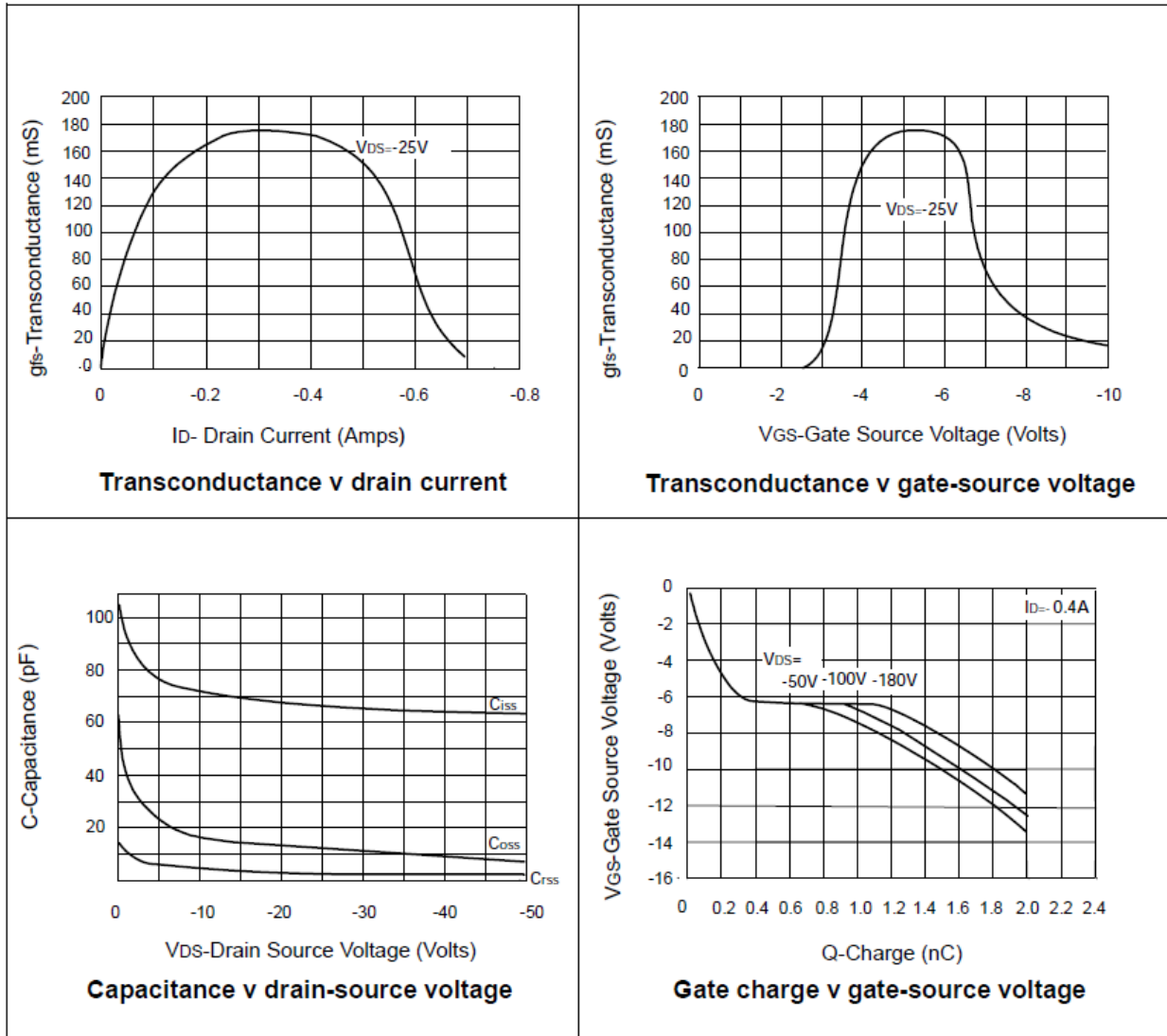
3. Switching times measured with 50  $\Omega$  source impedance and <5ns rise time on a pulse generator.

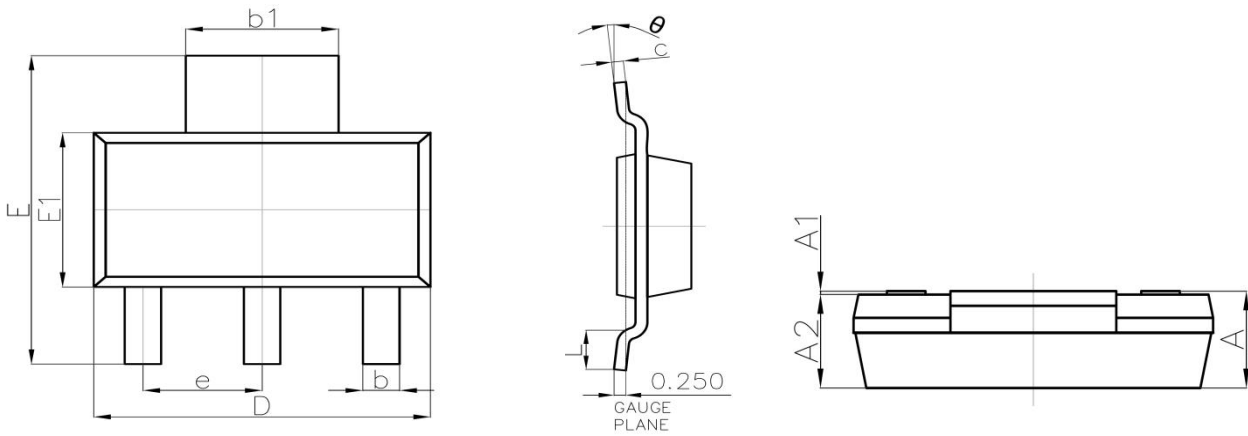
**P-CHANNEL HIGH VOLTAGE MOSFET**

**Typical Characteristics**

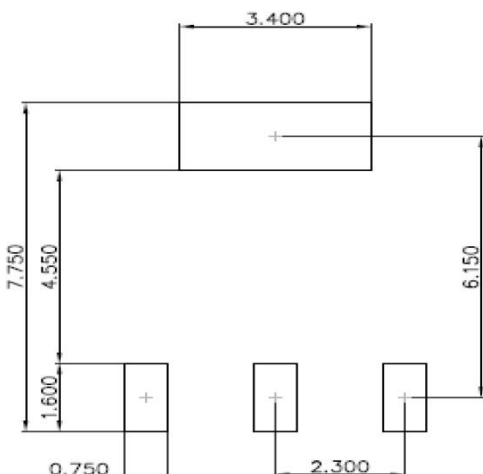


**P-CHANNEL HIGH VOLTAGE MOSFET**



**P-CHANNEL HIGH VOLTAGE MOSFET**
**SOT-223 Package Outline Dimensions**


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	—	1.800	-----	0.071
A1	0.020	0.100	0.001	0.004
A2	1.500	1.700	0.059	0.067
b	0.660	0.840	0.026	0.033
b1	2.900	3.100	0.114	0.122
c	0.230	0.350	0.009	0.014
D	6.300	6.700	0.248	0.264
E	6.700	7.300	0.264	0.287
E1	3.300	3.700	0.130	0.146
e	2.300(BSC)		0.091(BSC)	
L	0.750	-----	0.030	-----
θ	0°	10°	0°	10°

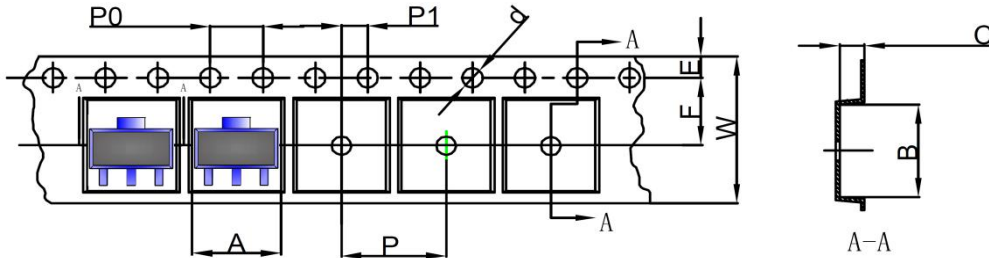
**SOT-223 Suggested Pad Layout**

**Note:**

1. Controlling dimension: in millimeters
2. General tolerance:  $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only

P-CHANNEL HIGH VOLTAGE MOSFET

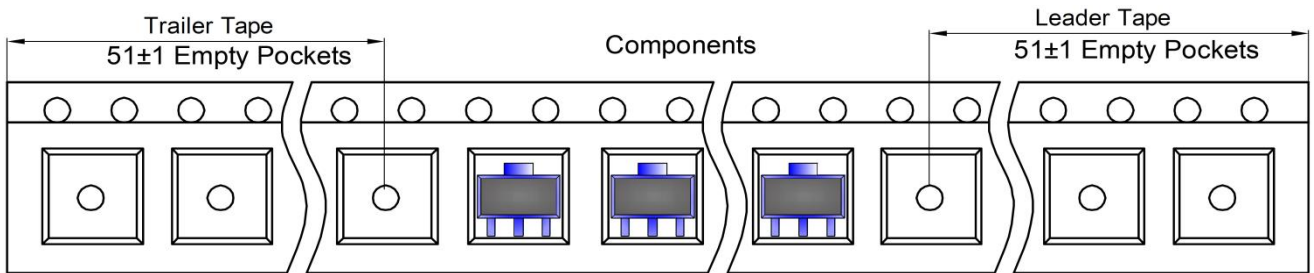
SOT-223 Tape and Reel

SOT-223 Embossed Carrier Tape

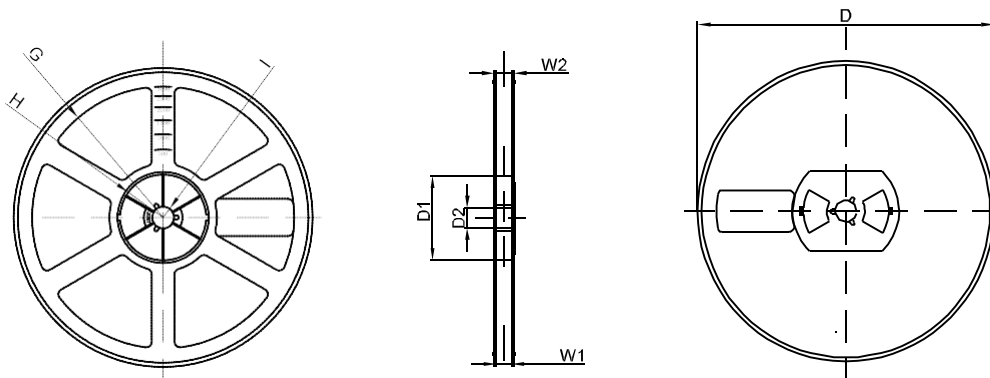


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-223	6.765	7.335	1.88	Ø1.50	1.75	5.50	4.00	4.00	2.00	12.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

SOT-223 Tape Leader and Trailer



SOT-223 Reel



DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
13" DIA	Ø330.00	100.00	13.00	R151.00	R56.00	R6.50	12.40	17.60
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1