

## Product Summary

$V_{DS}$ (V)	100
$R_{DS(ON)}$ ( $\Omega$ )	10

## Description and Applications

This MOSFET utilizes a structure that combines low input capacitance with relatively low on-resistance and has an intrinsically higher pulse current handling capability in linear mode than a comparable trench technology structure. This MOSFET is suitable for general purpose applications.

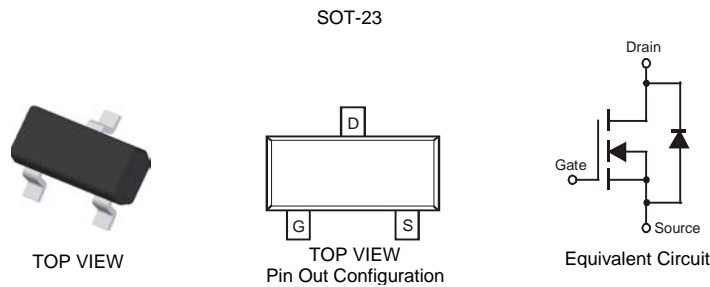
- General purpose 100V FET
- Power management
- Disconnect switches
- Telecoms
- Complementary Type – ZVP3310F

## Features and Benefits

- High pulse current handling in linear mode
- Low input capacitance
- Fast switching speed
- **Lead Free By Design/RoHS Compliant (Note 1)**

## Mechanical Data

- Case: SOT-23
- Case Material: UL Flammability Classification Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Weight: 0.008 grams (approximate)

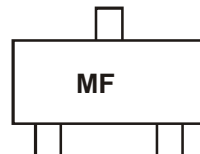


## Ordering Information (Note 2)

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
ZVN3310FTA	MF	7	8	3000

- Notes:
1. No purposefully added lead.
  2. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



MF = Product Type Marking Code

### Maximum Ratings @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Units
Drain-Source Voltage	V <sub>DSS</sub>	100	V
Gate-Source Voltage	V <sub>GSS</sub>	±20	V
Continuous Drain Current	I <sub>D</sub>	100	mA
Pulsed Drain Current	I <sub>DM</sub>	2	A

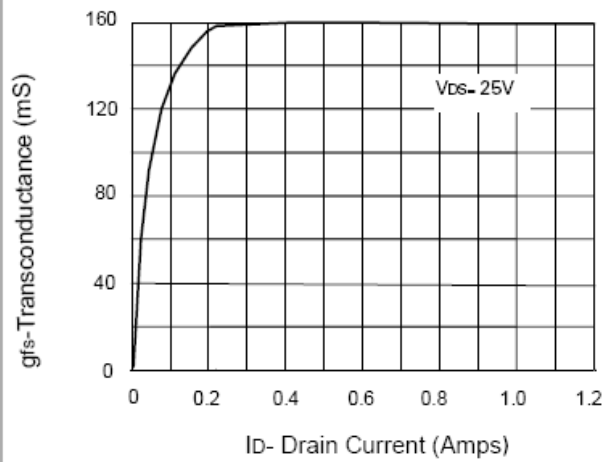
### Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation @T <sub>A</sub> = 25°C	P <sub>D</sub>	330	mW
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

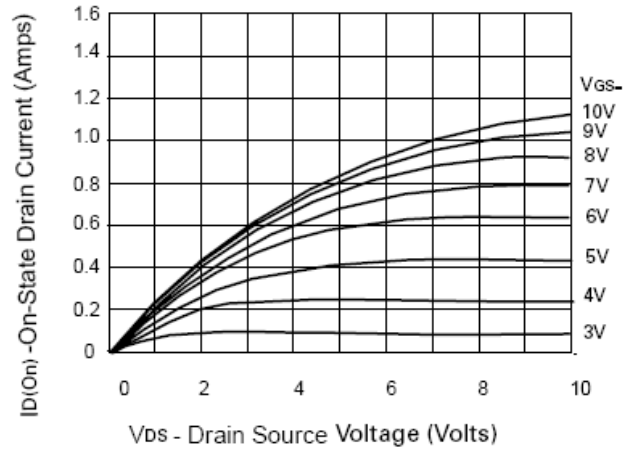
### Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	100	—	—	V	I <sub>D</sub> = 1mA, V <sub>GS</sub> = 0V
Zero Gate Voltage Drain Current T <sub>J</sub> = 25°C T <sub>J</sub> = 125°C (Note 4)	I <sub>DSS</sub>	—	—	1 50	μA	V <sub>DS</sub> = 100V, V <sub>GS</sub> = 0V V <sub>DS</sub> = 80V, V <sub>GS</sub> = 0V
Gate-Source Leakage	I <sub>GSS</sub>	—	—	20	nA	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V
Gate Threshold Voltage	V <sub>GS(th)</sub>	0.8	—	2.4	V	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 1mA
<b>ON CHARACTERISTICS (Note 3)</b>						
On-State Drain Current	I <sub>D(ON)</sub>	500	—	—	mA	V <sub>DS</sub> = 25V, V <sub>GS</sub> = 10V
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	—	—	10	Ω	V <sub>GS</sub> = 10V, I <sub>D</sub> = 500mA
<b>DYNAMIC CHARACTERISTICS (Note 4)</b>						
Forward Transconductance (Note 3)	g <sub>fs</sub>	100	—	—	mS	V <sub>DS</sub> = 25V, I <sub>D</sub> = 500mA
Input Capacitance	C <sub>iss</sub>	—	—	40	pF	V <sub>DS</sub> = 25V, V <sub>GS</sub> = 0V f = 1.0MHz
Output Capacitance	C <sub>oss</sub>	—	—	15		
Reverse Transfer Capacitance	C <sub>rss</sub>	—	—	5		
Turn-On Delay Time (Note 5)	t <sub>D(on)</sub>	—	3	5	ns	V <sub>DD</sub> ≈ 25V, I <sub>D</sub> = 500mA
Turn-On Rise Time (Note 5)	t <sub>r</sub>	—	5	7		
Turn-Off Delay Time (Note 5)	t <sub>D(off)</sub>	—	4	6		
Turn-Off Fall Time (Note 5)	t <sub>f</sub>	—	5	7		

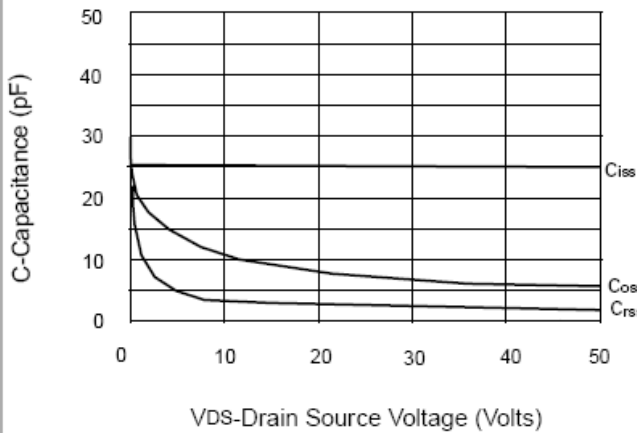
- Notes:
3. Measured under pulsed conditions. Width = 300μs. Duty cycle ≤2%
  4. Sample test.
  5. Switching times measured with 50Ω source impedance and <5ns rise time on a pulse generator.



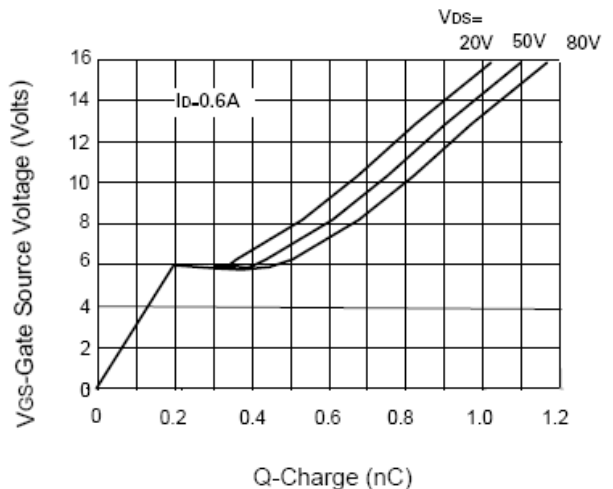
**Transconductance v drain current**



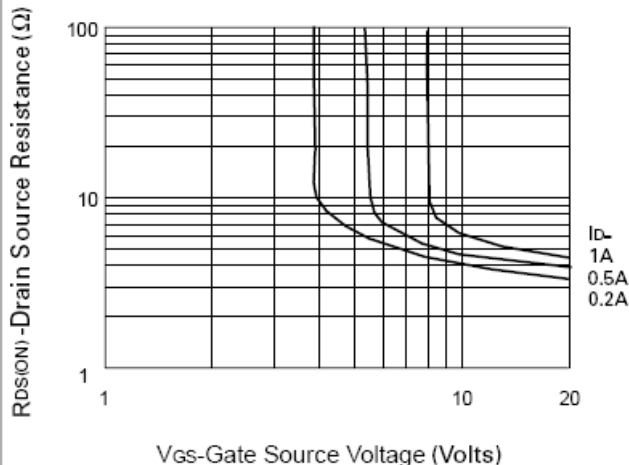
**Saturation Characteristics**



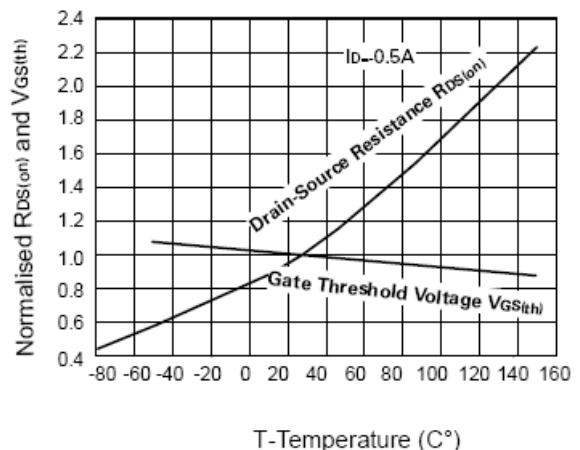
**Capacitance v drain-source voltage**



**Gate charge v gate-source voltage**

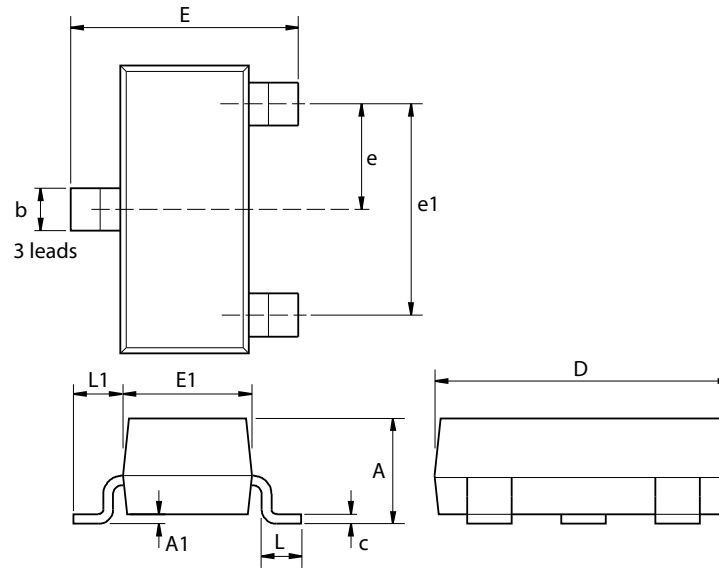


**On-resistance vs gate-source voltage**



**Normalised RDS(on) and VGS(th) vs Temperature**

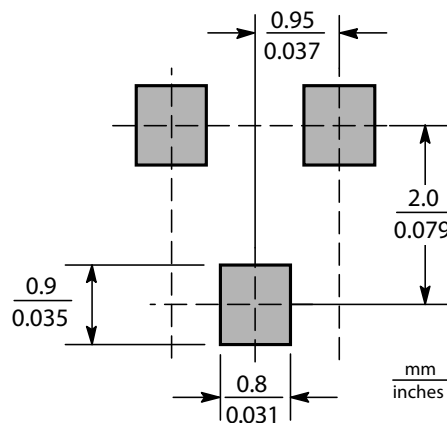
**Package Outline Dimensions**



Dim.	Millimeters		Inches		Dim.	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	-	1.12	-	0.044	e1	1.90 NOM		0.075 NOM	
A1	0.01	0.10	0.0004	0.004	E	2.10	2.64	0.083	0.104
b	0.30	0.50	0.012	0.020	E1	1.20	1.40	0.047	0.055
c	0.085	0.20	0.003	0.008	L	0.25	0.60	0.0098	0.0236
D	2.80	3.04	0.110	0.120	L1	0.45	0.62	0.018	0.024
e	0.95 NOM		0.037 NOM		-	-	-	-	-

Note: Controlling dimensions are in millimeters. Approximate dimensions are provided in inches

**Suggested Pad Layout**



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