FDV303N

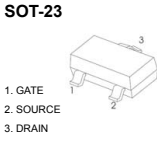
30V, Single N-channel Trench MOSFET

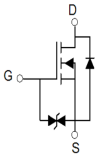
FEATURES

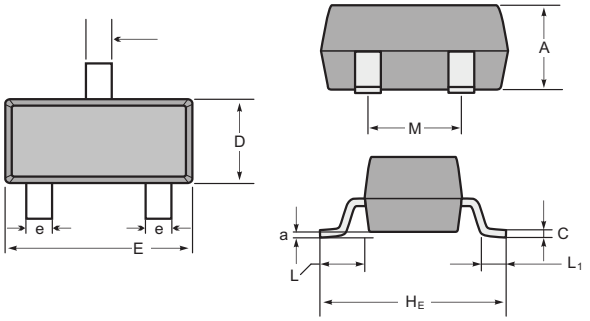
Fast switching
Low RDS(ON)
Trench MOSFET technology
This is a Pb Free Device
We declare that the material of product compliance with RoHS requirements and Halogen Free.

APPLICATIONS

Low Side Load Switch
Level Shift Circuits
DC−DC Converter
Portable Applications i.e. DSC, PDA, Cell Phone, etc.







SOT-23 mechanical data

UNIT		A	C	D	E	HE	e	M	L	L1	a
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.0
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.15
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	0.0
	min	35	3	47	110	87	12	67			6

MAXIMUM RATINGS(Ta = 25oC)

Parameter	Symbol	Limits	Unit
Drain−to−Source Voltage	VDSS	30	V
Gate−to−Source Voltage	VGS	±10	V
Drain Current (Note 1) Steady State (TA = 25°C) (TA = 100°C)	ID	 1000 590	mA
Power Dissipation (Note 1) Steady State	PD	 715	mW
Pulsed Drain Current (tp = 10 μs)	IDM	3.7	A
Operating Junction and Storage Temperature Range	TJ , TSTG	-55~+150	℃
Lead Temperature for Soldering Purposes (1/8″ from case for 10 s)	TL	260	℃

THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Junction−to−Ambient − Steady State (Note 1)	RΘJA	305	℃/W

Note 1: Surface−mounted on FR4 board using 1 in sq pad size (Cu area = 1.127 in sq [1 oz] including traces)

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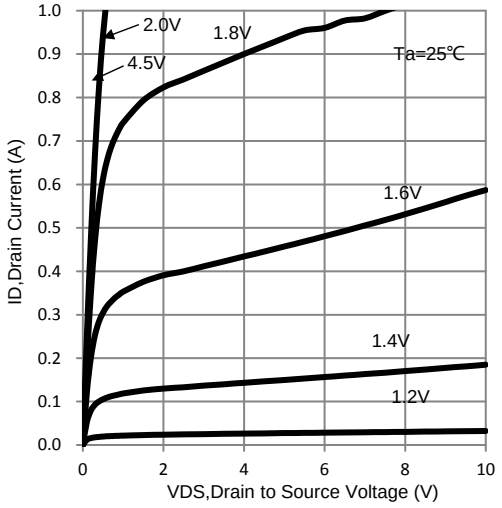
ELECTRICAL CHARACTERISTICS (Ta= 25 °C)

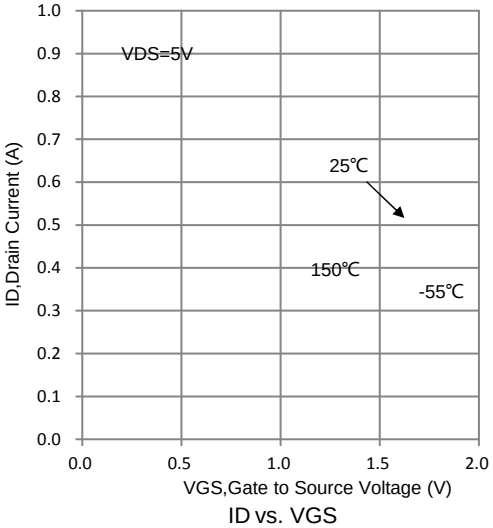
Characteristic		Symbol	Min.	Typ.	Max.	Unit
STATIC CHARACTERISTICS						
Drain-Source Breakdown Voltage (VGS =0V, ID =250μA)		V(BR)DSS	30	-	-	V
Gate Threshold Voltage (VDS =VGS , ID =250μA)		VGS(th)	0.6	1.0	1.2	
Gate-Body Leakage Current (VDS =0V, VGS =±10V)		IGSS	-	-	±10	μA
Zero Gate Voltage Drain Current (VDS =30V, VGS =0V)		IDSS	-	-	1	
Drain-Source On-Resistance (VGS =4.5V, ID = 200mA)		RDS(ON)	-	0.27	0.4	Ω
Drain-Source On-Resistance (VGS =2.5V, ID = 200mA)			-	0.4	0.6	
Diode Forward Voltage (IS =300mA, VGS =0V)		VSD	-	-	1.2	V
DYNAMIC PARAMETERS						
Total Gate Charge	(VDS =15V, VGS =4.5V, ID =1.0A)	Qg	-	0.65	0.87	nC
Gate-Source Charge		Qgs	-	0.14	-	
Gate-Drain Charge		Qgd	-	0.18	-	
Input Capacitance	(VDS =25V, VGS =0V, f=1MHz)	Ciss	-	37	56	pF
Output Capacitance		Coss	-	8.6	-	
Reverse Transfer Capacitance		Crss	-	5.4	-	
Turn-On Delay Time	(VDS =15V, RL =15Ω, VGEN =4.5V, RG =6 Ω)	td(on)	-	6.5	13	ns
Rise Time		tr	-	9.5	-	
Turn-Off Delay Time		td(off)	-	14	28	
Fall Time		tf	-	5.5	-	

Note 2: Pulse test; pulse width≤300μs, duty cycle≤ 2%

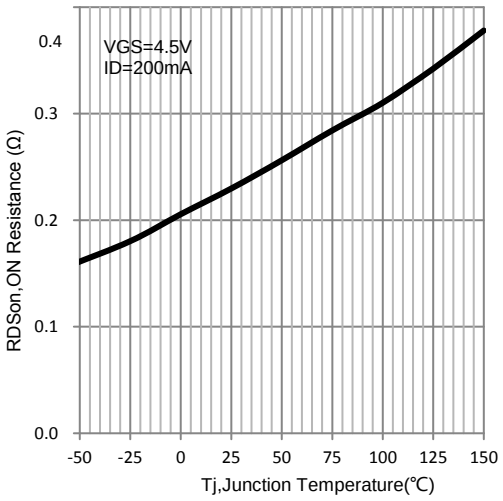
RATING AND CHARACTERISTIC CURVES (FDV303N)



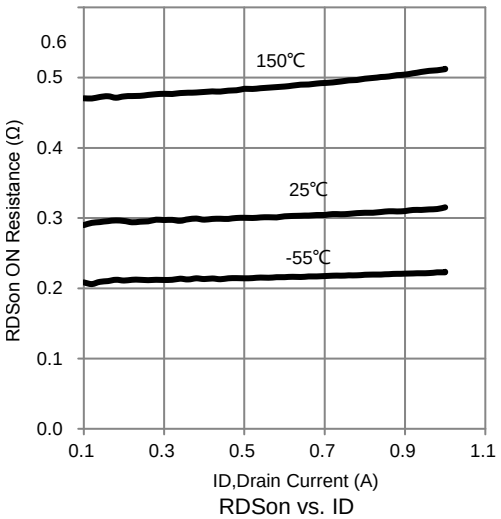
ID vs. VDS



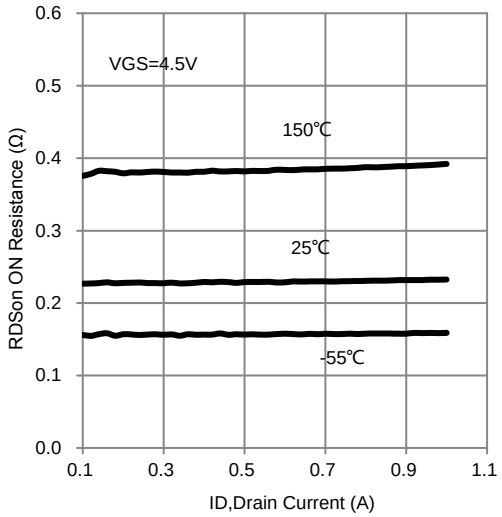
ID vs. VGS



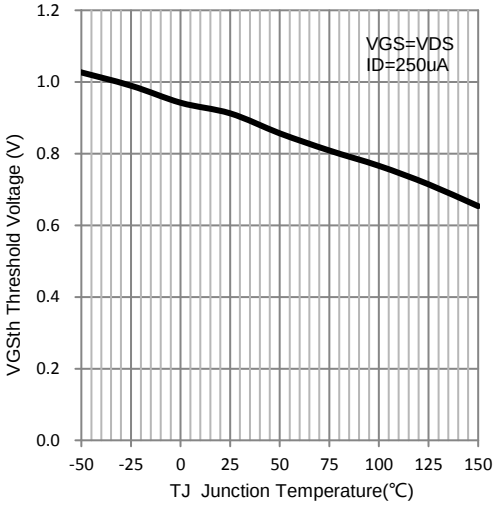
RDSon vs. Tj



RDSon vs. ID

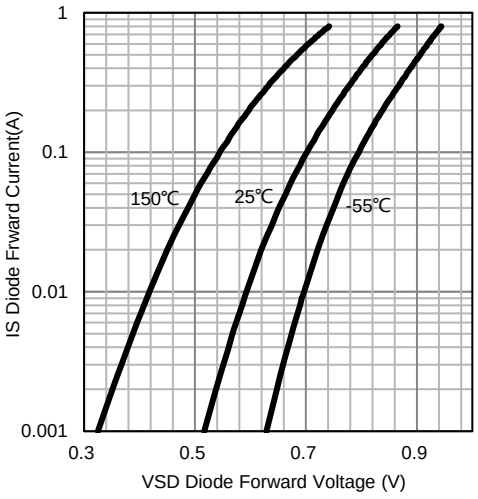


RDSon vs. ID

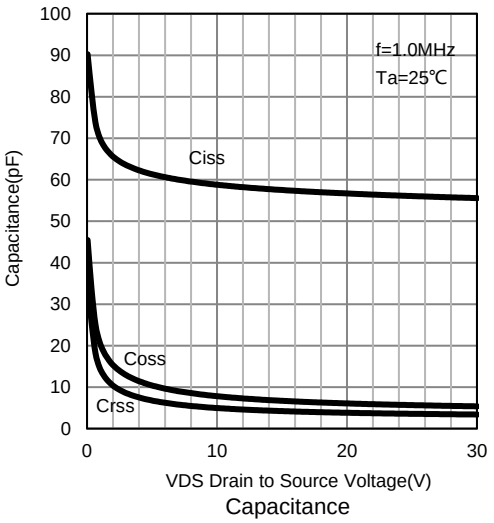


VGSth vs. Tj

RATING AND CHARACTERISTIC CURVES (FDV303N)



IS vs. VSD



Capacitance