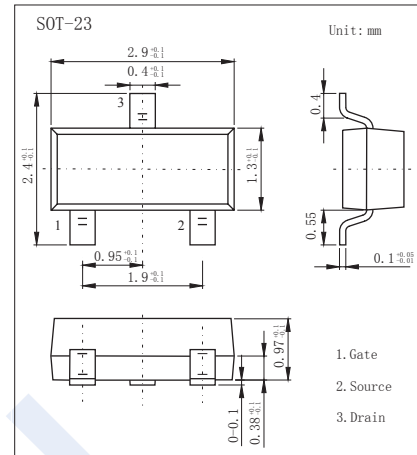
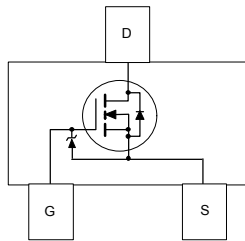


N-Channel MOSFET

FDV303N (KDV303N)

■ Features

- $V_{DS} (V) = 25V$
- $I_D = 0.68 A$
- $R_{DS(ON)} < 450m\Omega$ ($V_{GS} = 4.5V$)
- $R_{DS(ON)} < 600m\Omega$ ($V_{GS} = 2.7V$)



■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	25	V
Gate-Source Voltage	V_{GS}	± 8	
Electrostatic Discharge Rating MIL-STD-883D Human Body Model (100pf / 1500 Ohm)	ESD	6	KV
Continuous Drain Current	I_D	0.68	A
Pulsed Drain Current	I_{DM}	2	
Power Dissipation	P_D	350	mW
Thermal Resistance, Junction- to-Ambient	R_{thJA}	357	$^\circ C/W$
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to 150	

N-Channel MOSFET

FDV303N (KDV303N)

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =250 μ A, V _{GS} =0V	25			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V			1	μ A
		V _{DS} =20V, V _{GS} =0V, T _J =55°C			10	
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =± 8 V			± 100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250 μ A	0.65		1.5	V
Static Drain-Source On-Resistance (Note.1)	R _{DS(on)}	V _{GS} =4.5V, I _D =0.5A			450	m Ω
		V _{GS} =4.5V, I _D =0.5A T _J =125°C			800	
		V _{GS} =2.7V, I _D =0.2A			600	
On State Drain Current	I _{D(ON)}	V _{GS} =2.7V, V _{DS} =5V (Note.1)	0.5			A
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =0.5A (Note.1)		1.45		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =10V, f=1MHz		50		pF
Output Capacitance	C _{oss}			28		
Reverse Transfer Capacitance	C _{rss}			9		
Total Gate Charge	Q _g	V _{GS} =4.5V, V _{DS} =5V, I _D =0.5A (Note.1)		1.64	2.3	nC
Gate Source Charge	Q _{gs}			0.38		
Gate Drain Charge	Q _{gd}			0.45		
Turn-On DelayTime	t _{d(on)}	V _{GS} =4.5V, V _{DS} =6V, I _D =0.5A, R _G =50 Ω (Note.1)		3	6	ns
Turn-On Rise Time	t _r			8.5	18	
Turn-Off DelayTime	t _{d(off)}			17	30	
Turn-Off Fall Time	t _f			13	25	
Maximum Body-Diode Continuous Current	I _S				0.3	A
Diode Forward Voltage	V _{SD}	I _S =0.5A, V _{GS} =0V			1.2	V

Note.1: Pulse Test: Pulse Width < 300us, Duty Cycle < 2.0%.

■ Marking

Marking	303
---------	-----

N-Channel MOSFET FDV303N (KDV303N)

Typical Characteristics

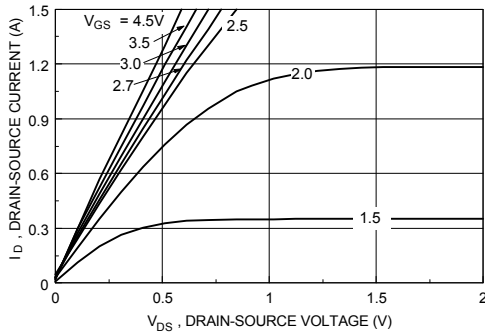


Figure 1. On-Region Characteristics.

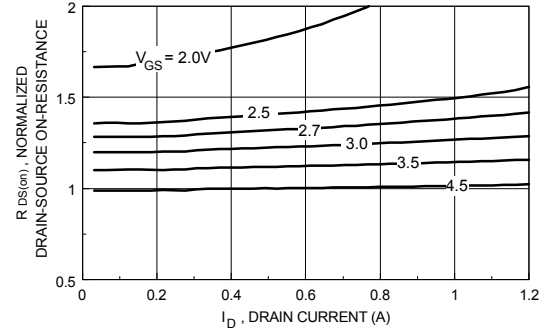


Figure 2. On-Resistance Variation with Drain Current and Gate Voltage.

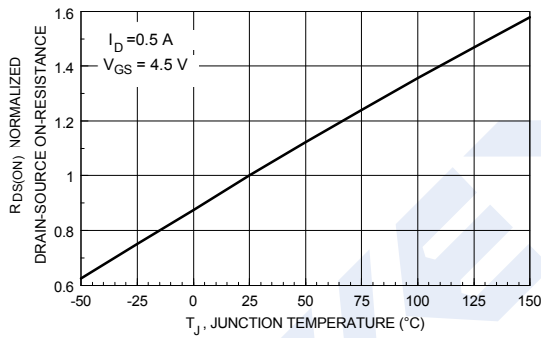


Figure 3. On-Resistance Variation with Temperature.

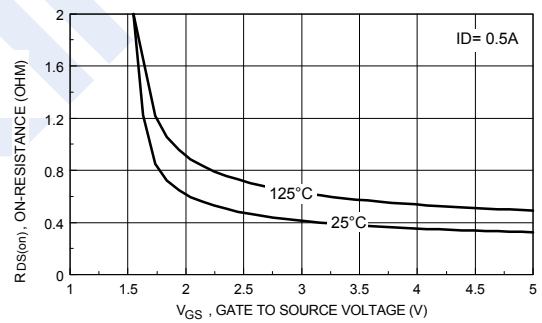


Figure 4. On Resistance Variation with Gate-To-Source Voltage.

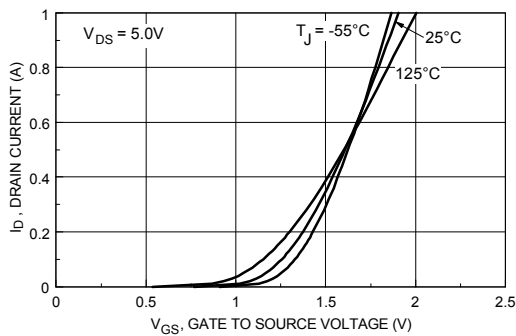


Figure 5. Transfer Characteristics.

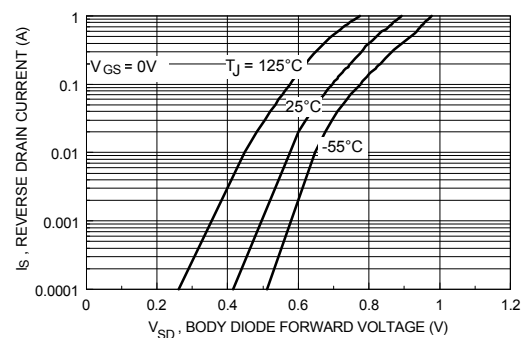


Figure 6. Body Diode Forward Voltage Variation with Source Current and Temperature.

N-Channel MOSFET FDV303N (KDV303N)

■ Typical Characteristics

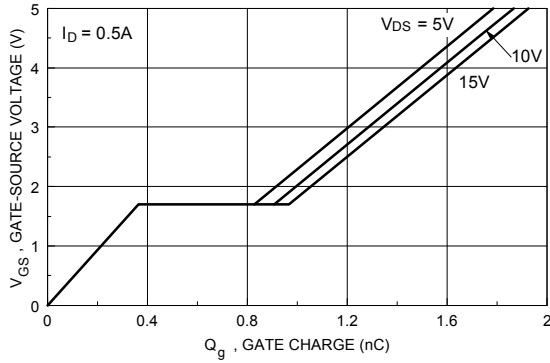


Figure 7. Gate Charge Characteristics.

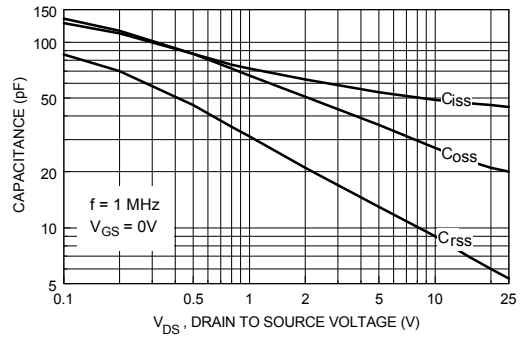


Figure 8. Capacitance Characteristics.

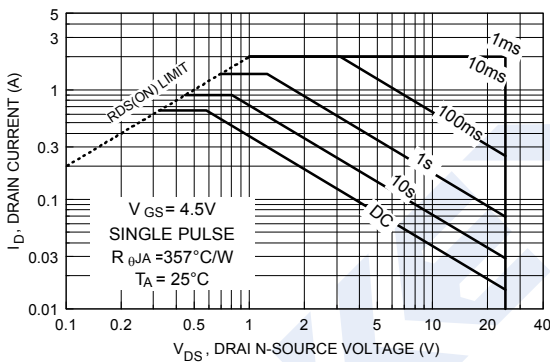


Figure 9. Maximum Safe Operating Area.

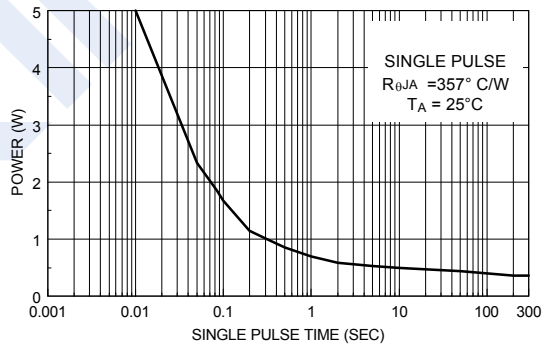


Figure 10. Single Pulse Maximum Power Dissipation.

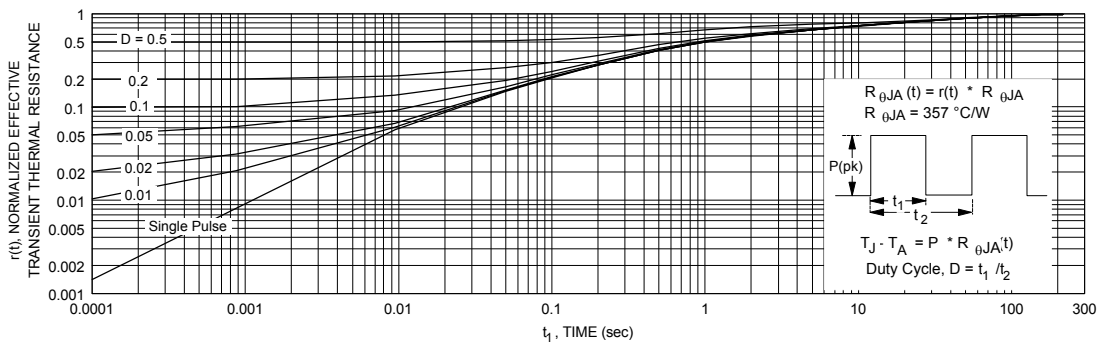


Figure 11. Transient Thermal Response Curve.