



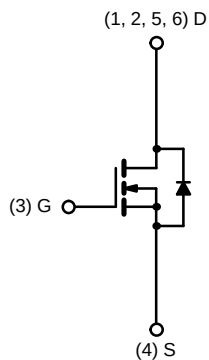
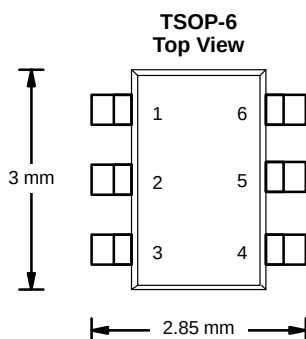
New Product

Si3422DV
 Vishay Siliconix

N-Channel 200-V (D-S) MOSFET

PRODUCT SUMMARY

V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
200	5 @ $V_{GS} = 10$ V	± 0.42



N-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter		Symbol	5 secs	Steady State	Unit
Drain-Source Voltage		V _{DS}	200		V
Gate-Source Voltage		V _{GS}	± 20		
Continuous Drain Current (T _J = 150°C) ^a	T _A = 25°C	I _D	± 0.42	± 0.31	A
	T _A = 70°C		± 0.34	± 0.25	
Pulsed Drain Current (10 μs Pulse Width)		I _{DM}	± 0.75		
Avalanche Current	L = 0.1 mH	I _{AS}	± 0.75		
Single Avalanche Energy		E _{AS}	0.028		mJ
Continuous Source Current (Diode Conduction) ^a		I _S	± 1		A
Maximum Power Dissipation ^a	T _A = 25°C	P _D	2.1	1.14	W
	T _A = 70°C		1.34	0.73	
Operating Junction and Storage Temperature Range		T _J , T _{stg}	–55 to 150		°C

THERMAL RESISTANCE RATINGS

Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient ^a	$t \leq 5$ sec	R_{thJA}	50	60	$^\circ\text{C/W}$
	Steady State		90	110	
Maximum Junction-to-Foot	Steady State	R_{thJF}	35	42	

Notes

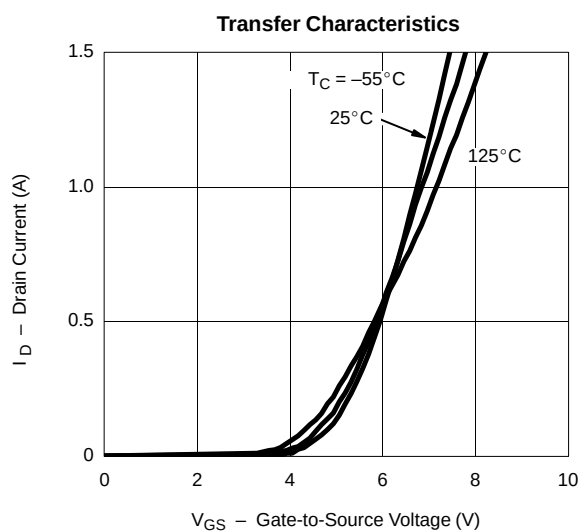
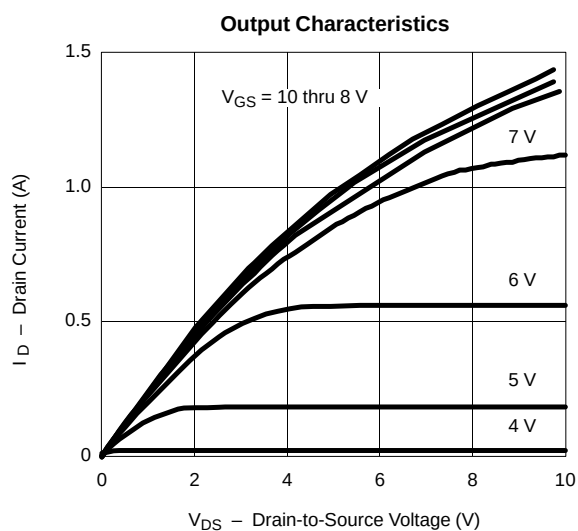
a. Surface Mounted on 1" x 1" FR4 Board.

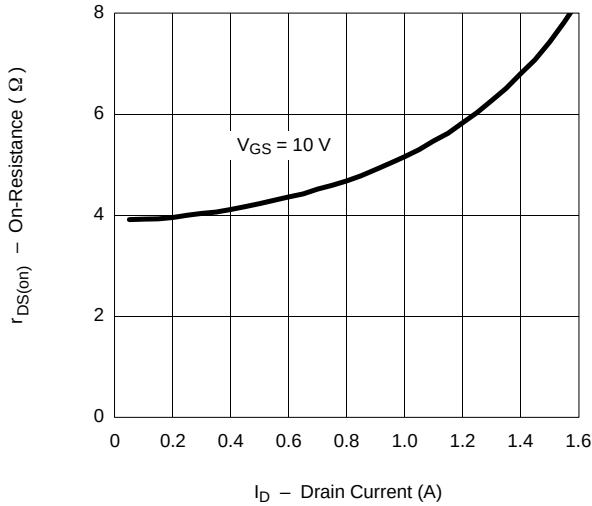
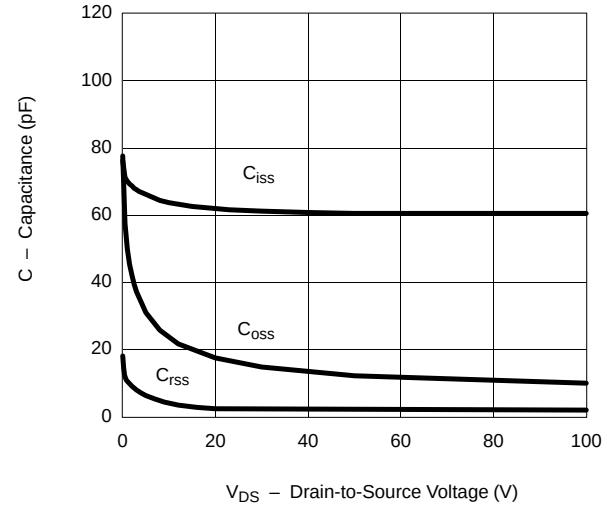
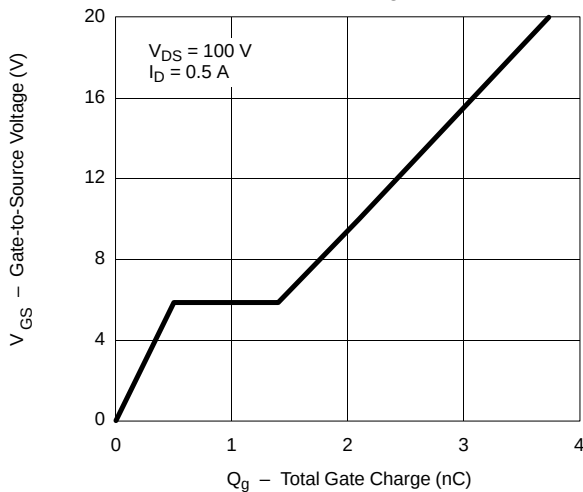
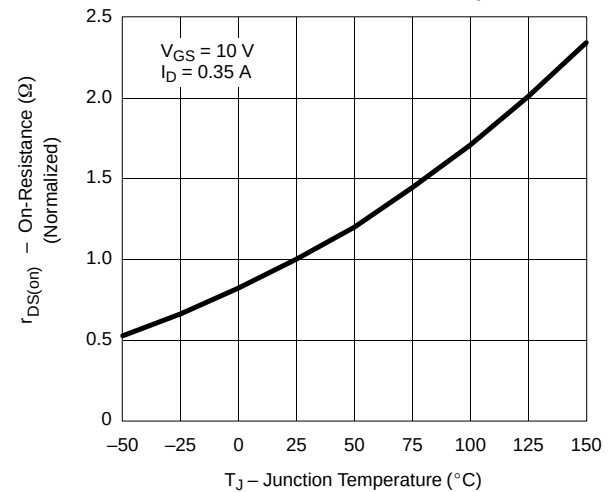
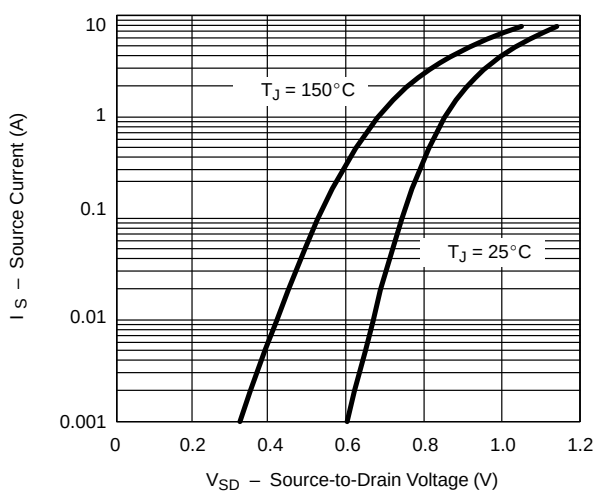
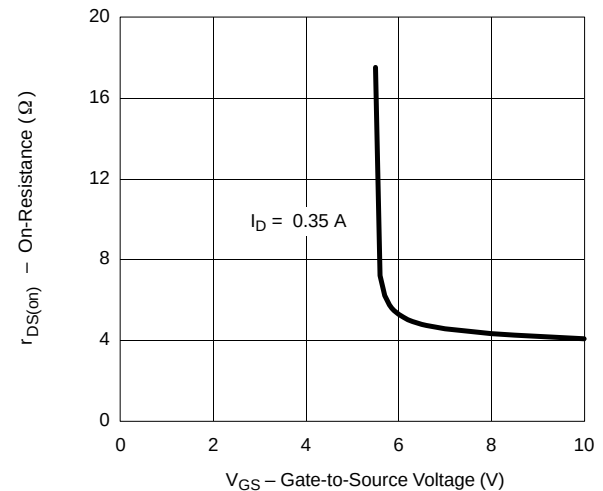
SPECIFICATIONS ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250\ \mu\text{A}$	2			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\ \text{V}$, $V_{GS} = \pm 20\ \text{V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 160\ \text{V}$, $V_{GS} = 0\ \text{V}$			1	μA
		$V_{DS} = 160\ \text{V}$, $V_{GS} = 0\ \text{V}$, $T_J = 55^\circ\text{C}$			25	
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} = 5\ \text{V}$, $V_{GS} = 10\ \text{V}$	0.75			A
Drain-Source On-State Resistance ^a	$r_{DS(on)}$	$V_{GS} = 10\ \text{V}$, $I_D = 0.35\ \text{A}$			5	Ω
Forward Transconductance ^a	g_{fs}	$V_{DS} = 15\ \text{V}$, $I_D = 1\ \text{A}$		10		S
Diode Forward Voltage ^a	V_{SD}	$I_S = 1\ \text{A}$, $V_{GS} = 0\ \text{V}$			1.2	V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = 100\ \text{V}$, $V_{GS} = 10\ \text{V}$, $I_D = 0.5\ \text{A}$		2.1	3.4	nC
Gate-Source Charge	Q_{gs}			0.5		
Gate-Drain Charge	Q_{gd}			0.9		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 100\ \text{V}$, $R_L = 100\ \Omega$ $I_D \cong 0.75\ \text{A}$, $V_{GEN} = 10\ \text{V}$, $R_G = 6\ \Omega$		8	13	ns
Rise Time	t_r			8	13	
Turn-Off Delay Time	$t_{d(off)}$			9	15	
Fall Time	t_f			30	50	
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = 1\ \text{A}$, $di/dt = 100\ \text{A}/\mu\text{s}$		130	210	

Notes

- a. Pulse test; pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.
b. Guaranteed by design, not subject to production testing.

TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

**TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)****On-Resistance vs. Drain Current****Capacitance****Gate Charge****On-Resistance vs. Junction Temperature****Source-Drain Diode Forward Voltage****On-Resistance vs. Gate-to-Source Voltage**

TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)
