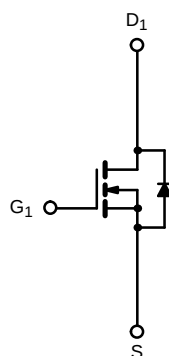
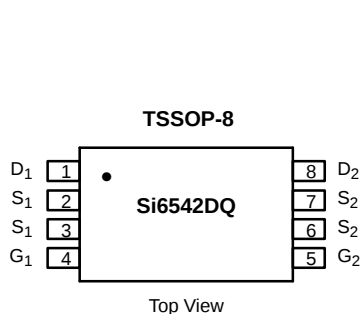


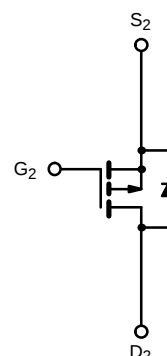
Dual N- and P-Channel 20-V (D-S) MOSFET

PRODUCT SUMMARY

	V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
N-Channel	20	0.09 @ $V_{GS} = 10$ V	± 2.5
		0.175 @ $V_{GS} = 4.5$ V	± 1.8
P-Channel	-20	0.17 @ $V_{GS} = -10$ V	± 1.9
		0.32 @ $V_{GS} = -4.5$ V	± 1.3



N-Channel MOSFET



P-Channel MOSFET

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

Parameter		Symbol	N-Channel	P-Channel	Unit
Drain-Source Voltage		V _{DS}	20	−20	V
Gate-Source Voltage		V _{GS}	± 20	± 20	
Continuous Drain Current (T _J = 150°C) ^a	T _A = 25°C	I _D	± 2.5	± 1.9	A
	T _A = 70°C		± 2.0	± 1.5	
Pulsed Drain Current		I _{DM}	± 20	± 15	
Continuous Source Current (Diode Conduction) ^a		I _S	1.25	−1.25	
Maximum Power Dissipation ^a	T _A = 25°C	P _D	1.0		W
	T _A = 70°C		0.64		
Operating Junction and Storage Temperature Range		T _J , T _{stg}	−55 to 150		°C

THERMAL RESISTANCE RATINGS

Parameter	Symbol	N- or P-Channel	Unit
Maximum Junction-to-Ambient ^a	R_{thJA}	125	$^\circ\text{C/W}$

Notes

a. Surface Mounted on FR4 Board, $t \leq 10$ sec.

For SPICE model information via the Worldwide Web: <http://www.vishay.com/www/product/spice.htm>

SPECIFICATIONS (T _J = 25 °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 μA	N-Ch	1.0			V
		V _{DS} = V _{GS} , I _D = −250 μA	P-Ch	−1.0			
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V				±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 20 V, V _{GS} = 0 V	N-Ch			1	μA
		V _{DS} = −20 V, V _{GS} = 0 V	P-Ch			−1	
		V _{DS} = 20 V, V _{GS} = 0 V, T _J = 55 °C	N-Ch			25	
		V _{DS} = −20 V, V _{GS} = 0 V, T _J = 55 °C	P-Ch			−25	
On-State Drain Current ^a	I _{D(on)}	V _{DS} = 5 V, V _{GS} = 10 V	N-Ch	14			A
		V _{DS} = −5 V, V _{GS} = −10 V	P-Ch	−10			
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 10 V, I _D = 2.5 A	N-Ch		0.065	0.09	Ω
		V _{GS} = −10 V, I _D = 1.9 A	P-Ch		0.13	0.17	
		V _{GS} = 4.5 V, I _D = 1.8 A	N-Ch		0.100	0.175	
		V _{GS} = −4.5 V, I _D = 1.3 A	P-Ch		0.26	0.32	
Forward Transconductance ^a	g _{fs}	V _{DS} = 15 V, I _D = 2.5 A	N-Ch		5		S
		V _{DS} = −15 V, I _D = −1.9 A	P-Ch		3		
Diode Forward Voltage ^a	V _{SD}	I _S = 1.25 A, V _{GS} = 0 V	N-Ch		0.8	1.2	V
		I _S = −1.25 A, V _{GS} = 0 V	P-Ch		0.8	−1.2	
Dynamic ^b							
Total Gate Charge	Q _g	N-Channel V _{DS} = 10 V, V _{GS} = 10 V, I _D = 2.5 A P-Channel V _{DS} = −10 V, V _{GS} = −10 V, I _D = −1.9 A	N-Ch		7	10	nC
Gate-Source Charge	Q _{gs}		P-Ch		7	10	
			N-Ch		0.9		
Gate-Drain Charge	Q _{gd}		P-Ch		1.3		
		N-Ch		2.1			
Turn-On Delay Time	t _{d(on)}	P-Ch		1.7			
		N-Ch		11	20	ns	
Rise Time	t _r	P-Ch		9	20		
		N-Ch		11	20		
Turn-Off Delay Time	t _{d(off)}	P-Ch		12	25		
		N-Ch		16	30		
Fall Time	t _f	P-Ch		17	30		
		N-Ch		6	15		
Source-Drain Reverse Recovery Time	t _{rr}	P-Ch		6	15		
		I _F = 1.25 A, di/dt = 100 A/μs	N-Ch		45	70	
		I _F = −1.25 A, di/dt = 100 A/μs	P-Ch		35	70	

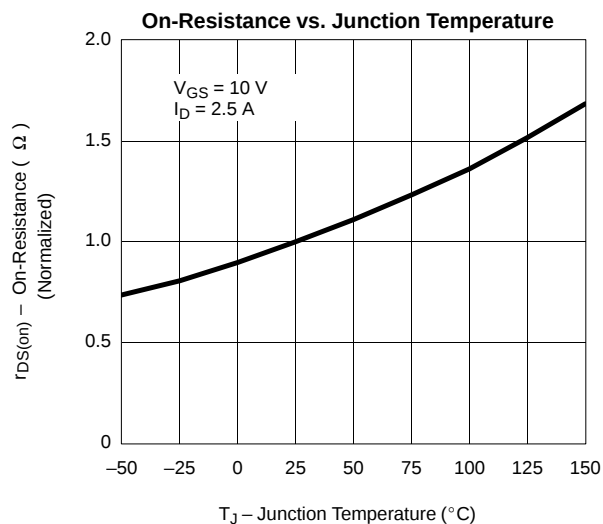
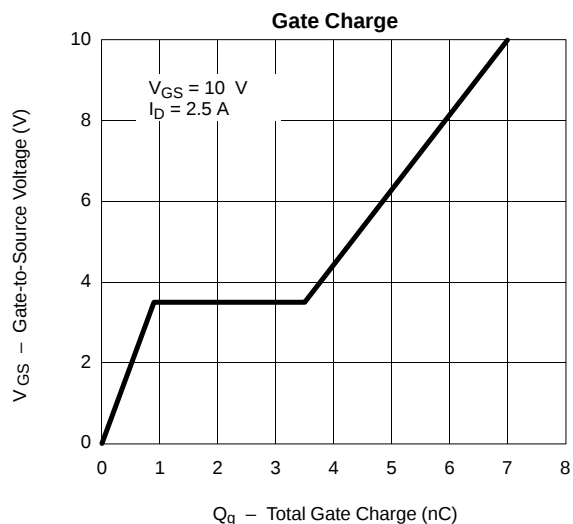
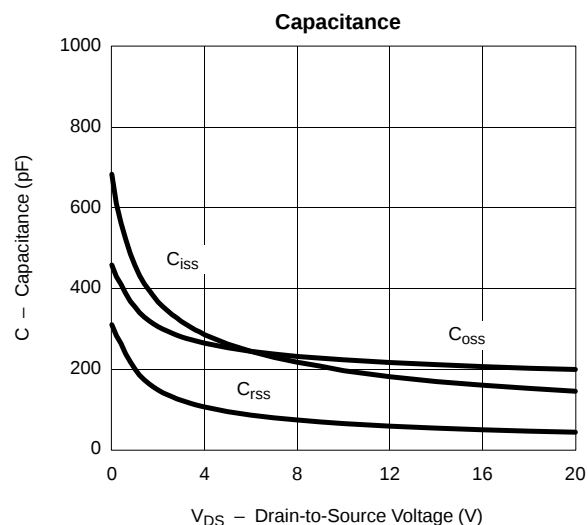
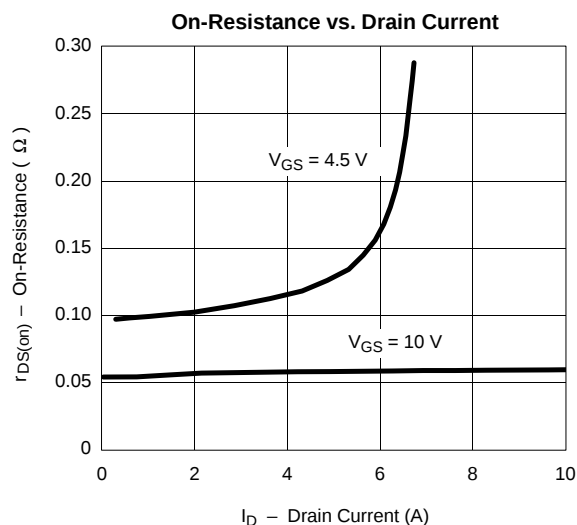
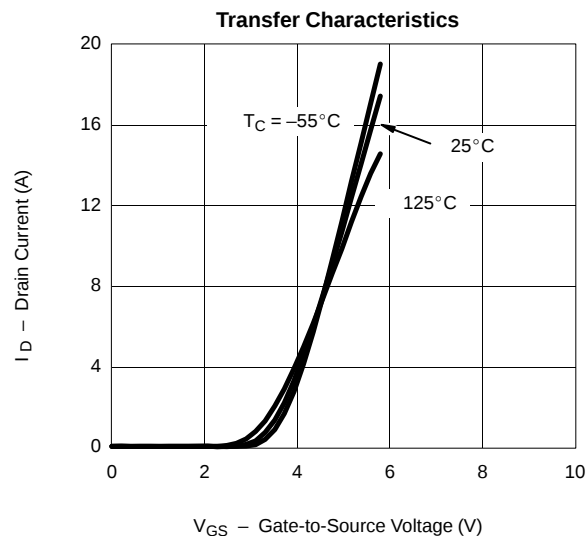
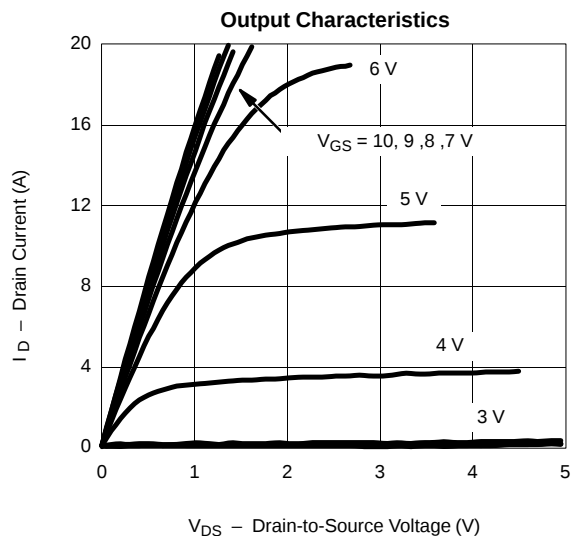
Notes

- a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
- b. Guaranteed by design, not subject to production testing.



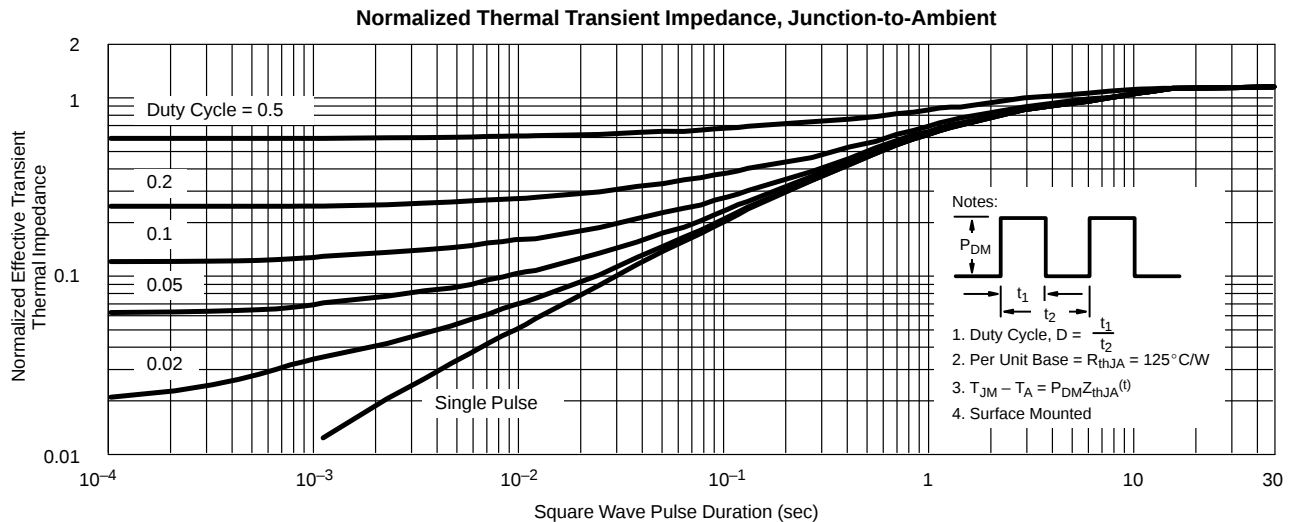
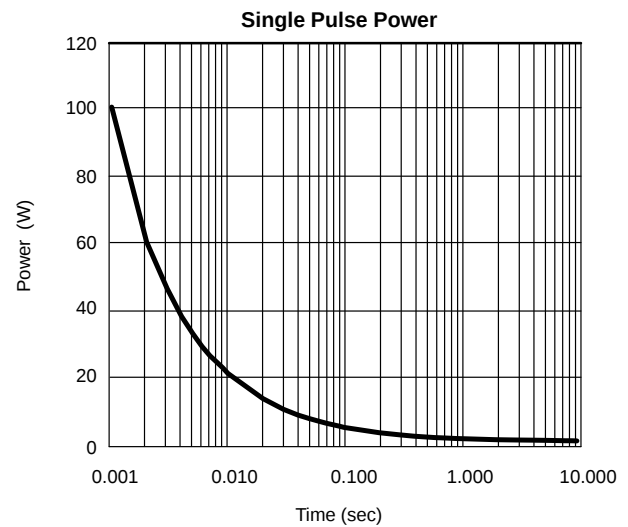
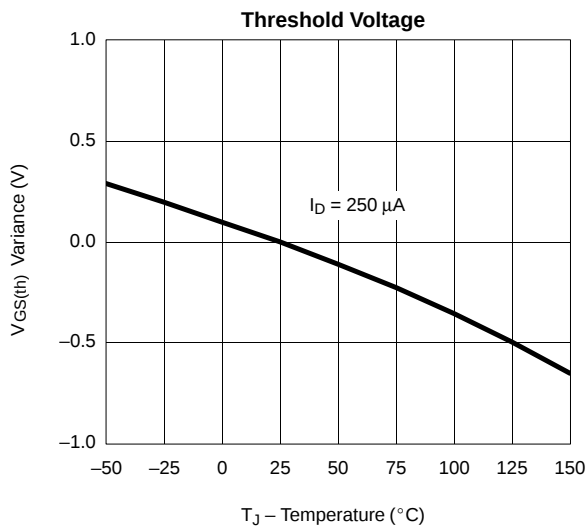
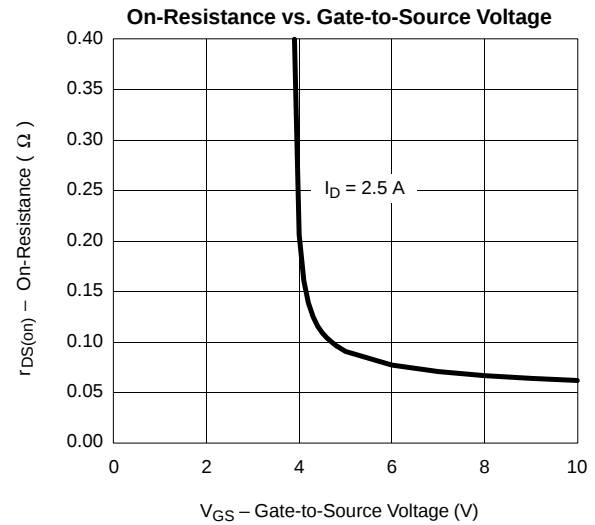
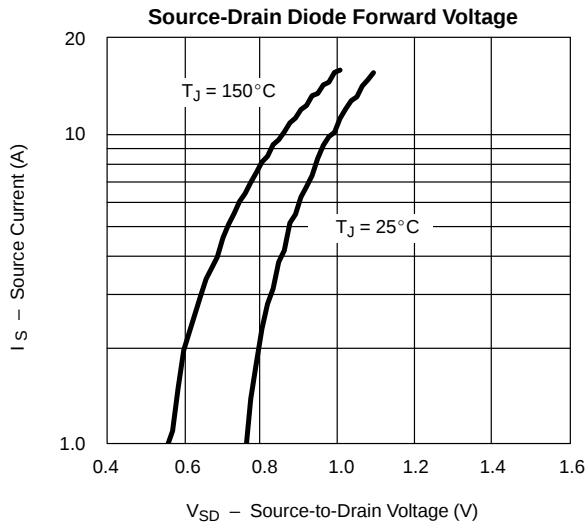
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

N-CHANNEL



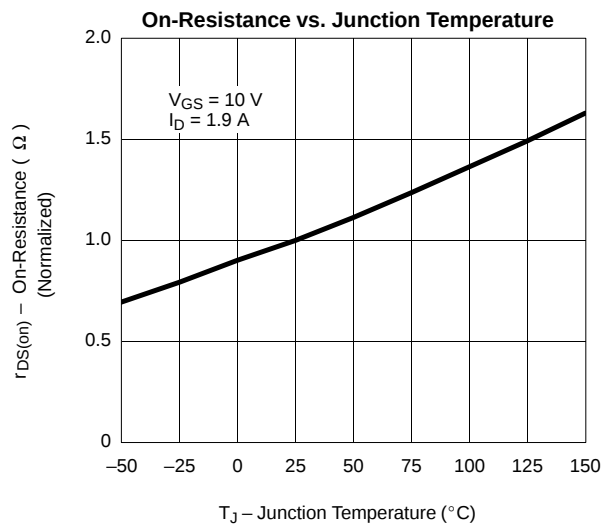
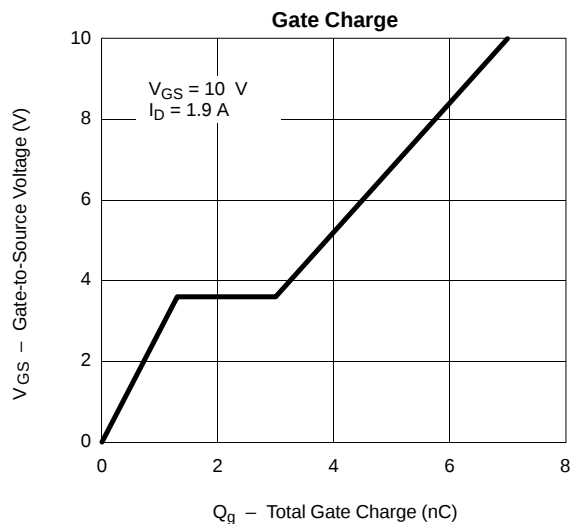
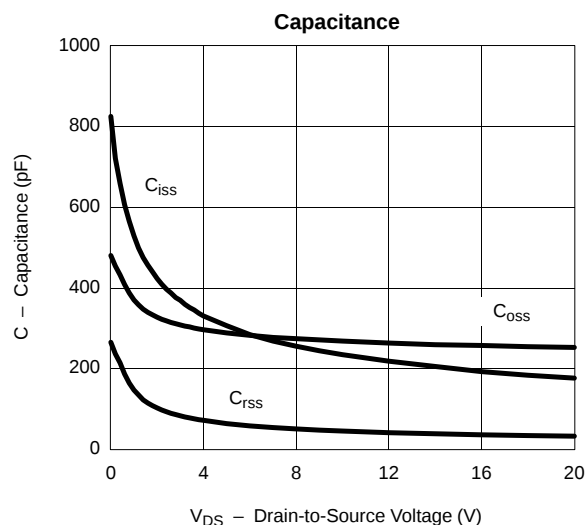
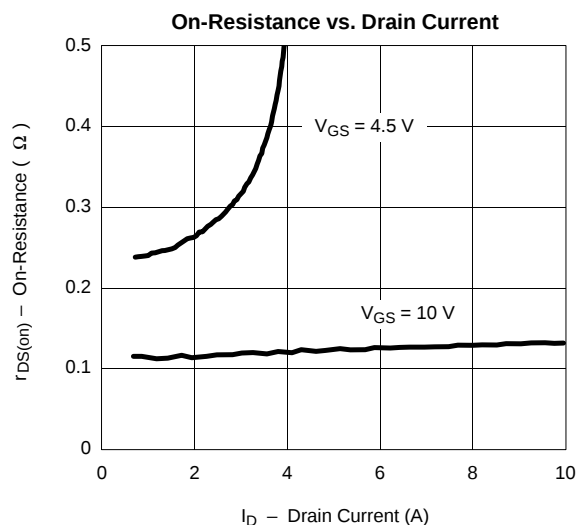
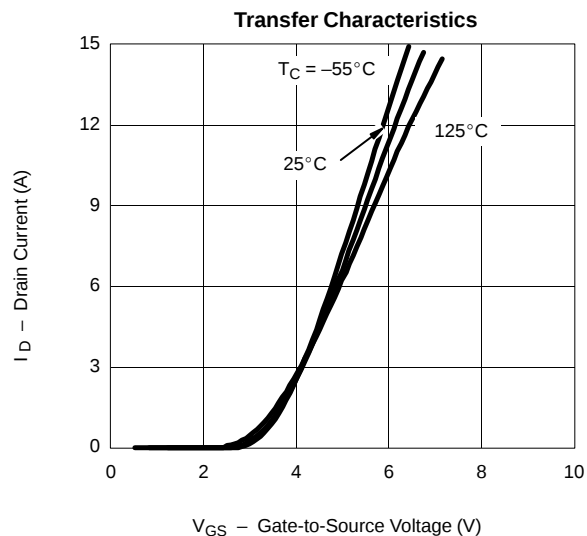
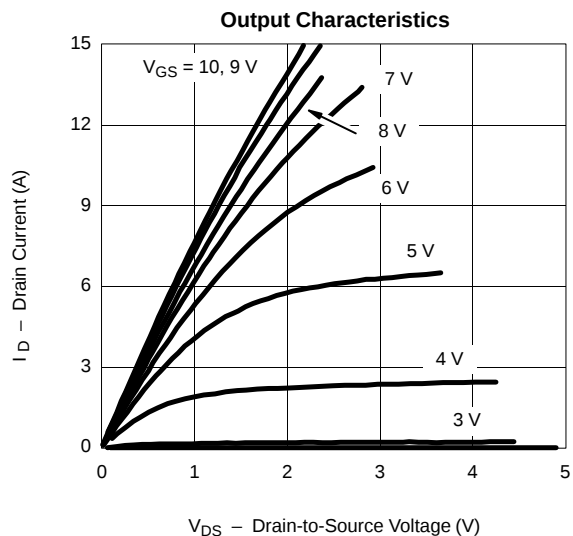
TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

N-CHANNEL



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

P-CHANNEL



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

P-CHANNEL

