



New Product

Si1912EDH
Vishay Siliconix

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

PRODUCT SUMMARY

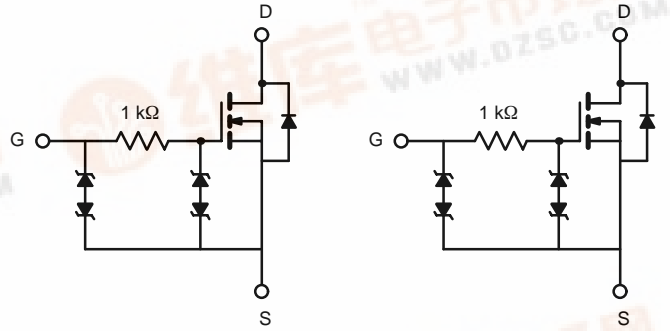
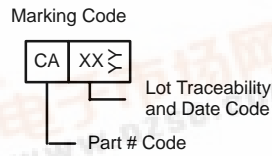
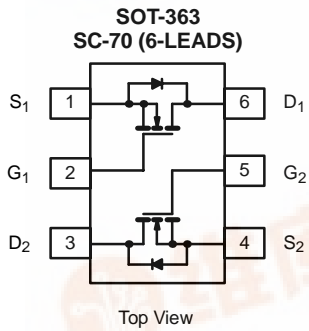
V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
20	0.280 @ V _{GS} = 4.5 V	1.28
	0.360 @ V _{GS} = 2.5 V	1.13
	0.450 @ V _{GS} = 1.8 V	1.0

FEATURES

- TrenchFET® Power MOSFETS: 1.8-V Rated
- ESD Protected: 2000 V
- Thermally Enhanced SC-70 Package

APPLICATIONS

- Load Switching
- PA Switch
- Level Switch



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C UNLESS OTHERWISE NOTED)

Parameter	Symbol	5 secs	Steady State	Unit	
Drain-Source Voltage	V _{DS}	20		V	
Gate-Source Voltage	V _{GS}	± 12			
Continuous Drain Current (T _J = 150°C) ^a	I _D	T _A = 25°C	1.28	1.13	A
		T _A = 85°C	0.92	0.81	
Pulsed Drain Current	I _{DM}	4			
Continuous Diode Current (Diode Conduction) ^a	I _S	0.61	0.48		
Maximum Power Dissipation ^a	P _D	T _A = 25°C	0.74	0.57	W
		T _A = 85°C	0.38	0.30	
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	R _{thJA}	t ≤ 5 sec	130	170	°C/W
		Steady State	170	220	
Maximum Junction-to-Foot (Drain)	R _{thJF}	80	100		

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

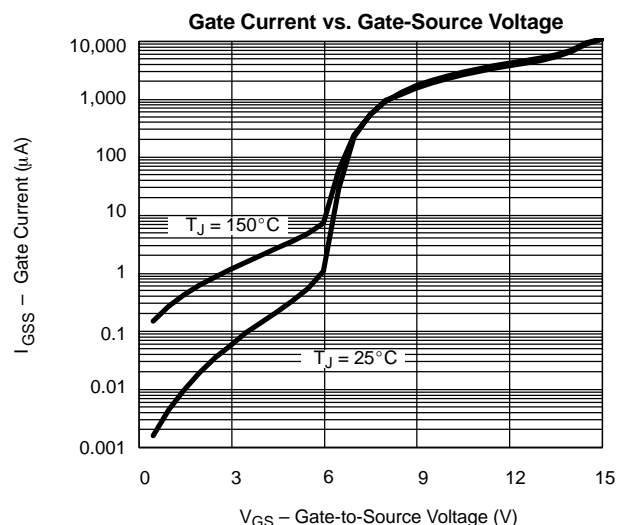
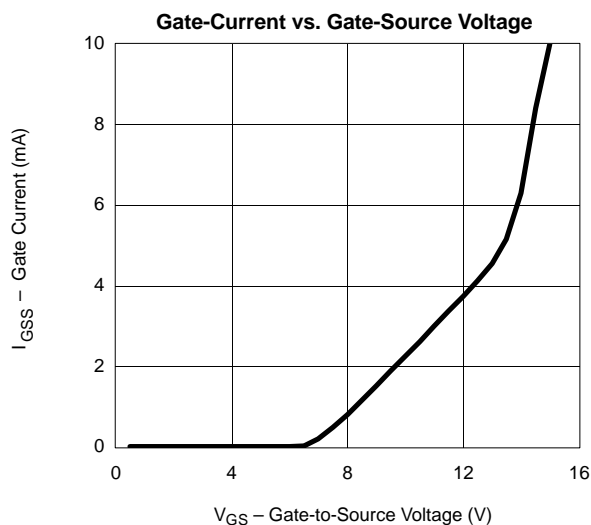


SPECIFICATIONS (T _J = 25 °C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 100 μA	0.45			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±4.5 V			±1	μA
		V _{DS} = 0 V, V _{GS} = ±12 V			±10	mA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 16 V, V _{GS} = 0 V			1	μA
		V _{DS} = 16 V, V _{GS} = 0 V, T _J = 85 °C			5	
On-State Drain Current ^a	I _{D(on)}	V _{DS} = 5 V, V _{GS} = 4.5 V	2			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 4.5 V, I _D = 1.13 A		0.220	0.280	Ω
		V _{GS} = 2.5 V, I _D = 0.99 A		0.281	0.360	
		V _{GS} = 1.8 V, I _D = 0.2 A		0.344	0.450	
Forward Transconductance ^a	g _{fs}	V _{DS} = 10 V, I _D = 1.13 A		2.6		S
Diode Forward Voltage ^a	V _{SD}	I _S = 0.48 A, V _{GS} = 0 V		0.80	1.2	V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = 10 V, V _{GS} = 4.5 V, I _D = 1.13 A		0.65	1.0	nC
Gate-Source Charge	Q _{gs}			0.2		
Gate-Drain Charge	Q _{gd}			0.23		
Turn-On Delay Time	t _{d(on)}	V _{DD} = 10 V, R _L = 20 Ω I _D ≅ 0.5 A, V _{GEN} = 4.5 V, R _G = 6 Ω		45	70	ns
Rise Time	t _r			85	130	
Turn-Off Delay Time	t _{d(off)}			350	530	
Fall Time	t _f			210	320	

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)

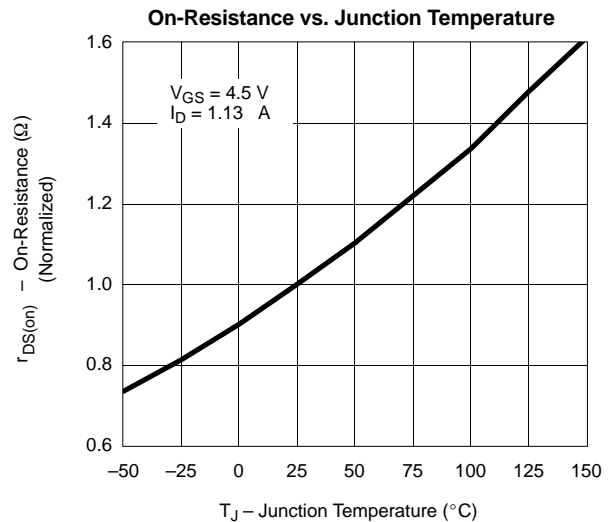
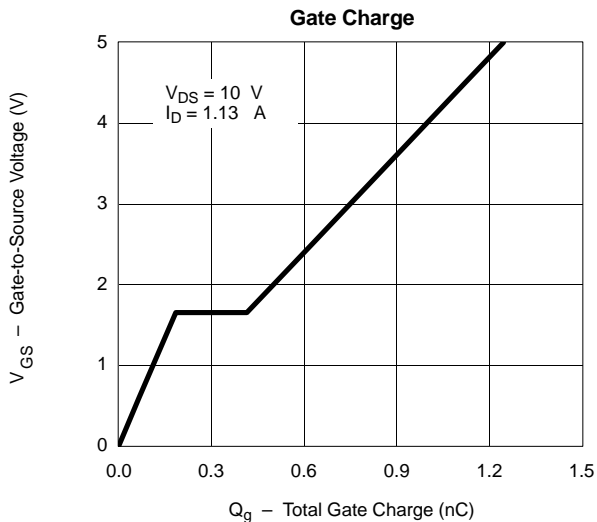
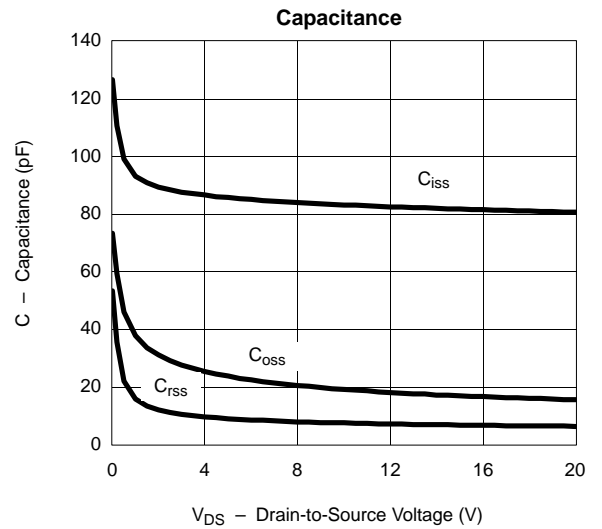
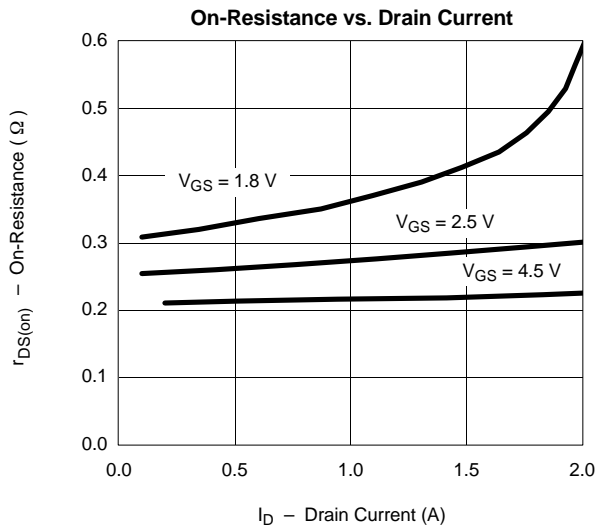
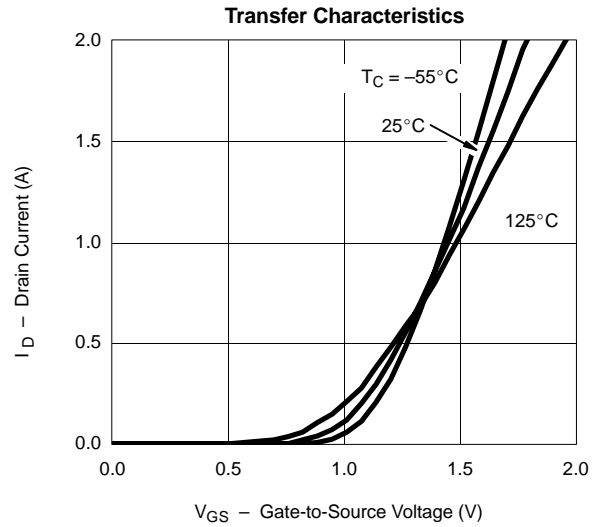
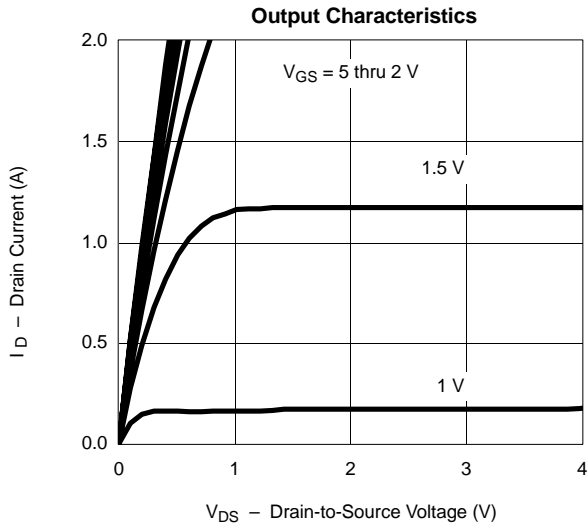




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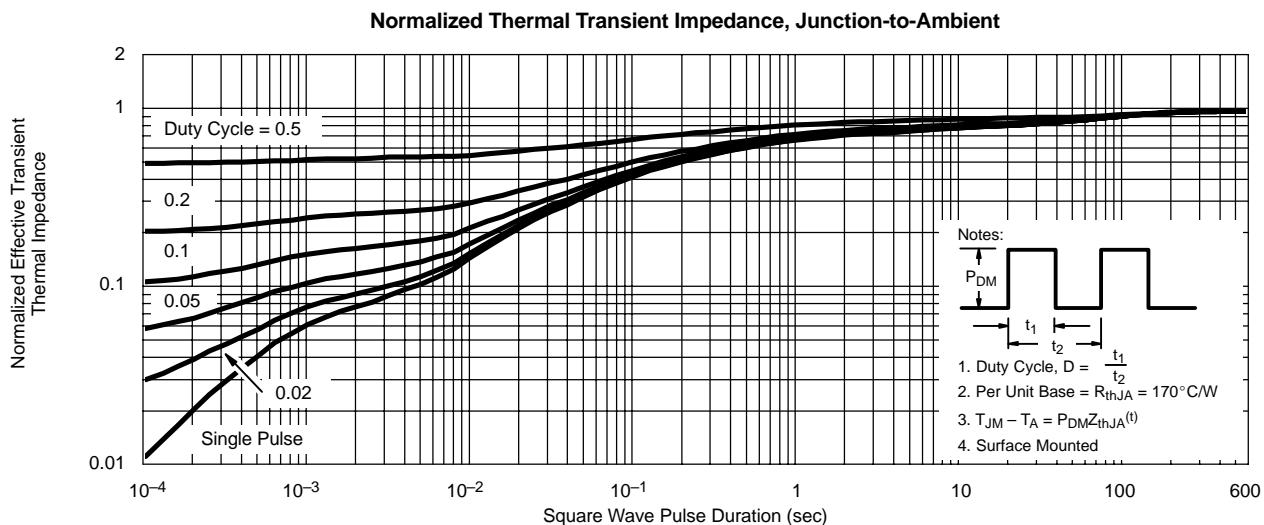
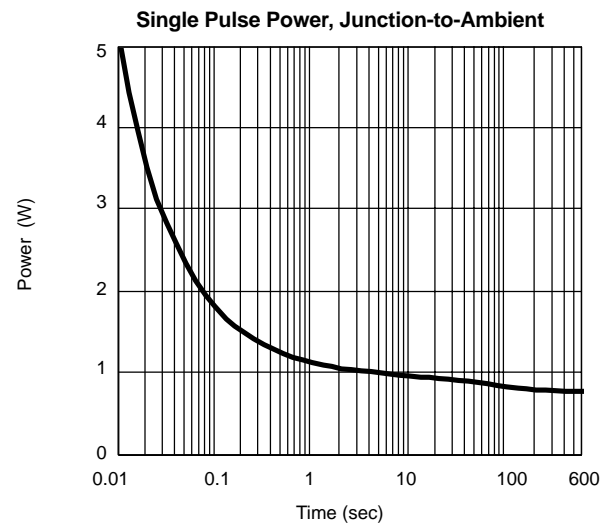
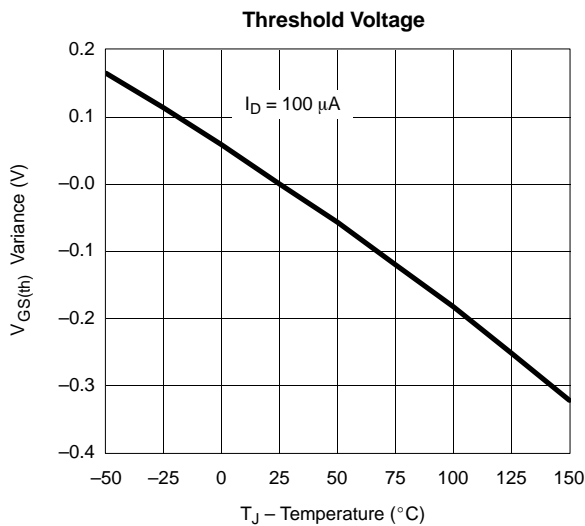
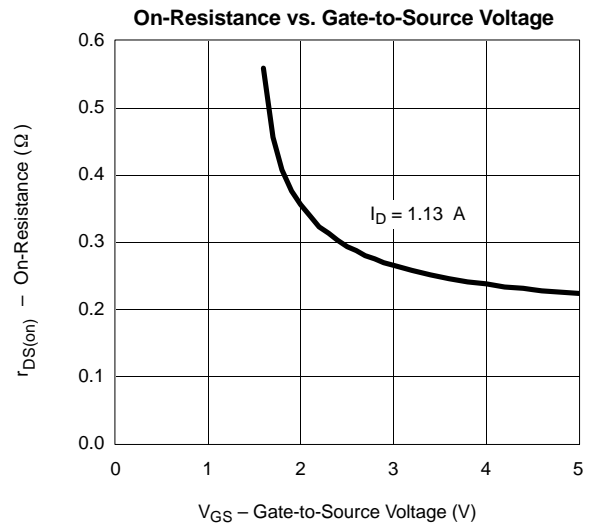
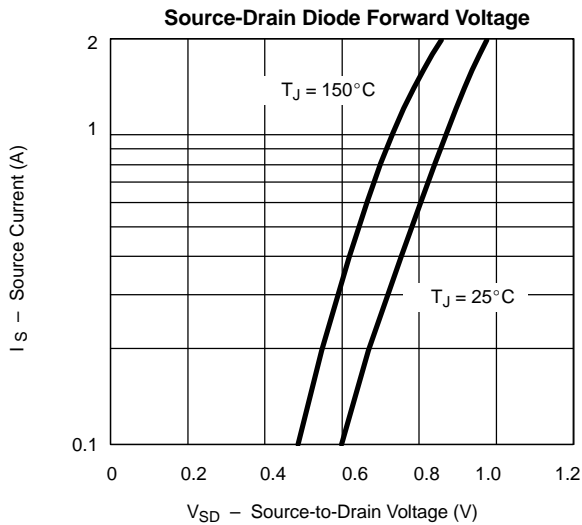
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