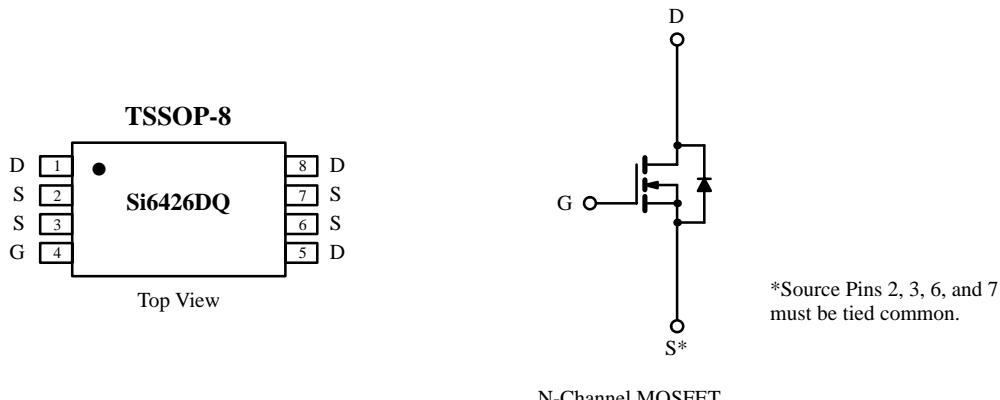


N-Channel 2.5-V (G-S) Rated MOSFET

Product Summary

V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
20	0.035 @ V _{GS} = 4.5 V	±5.4
	0.04 @ V _{GS} = 2.5 V	±4.9



Absolute Maximum Ratings (T_A = 25°C Unless Otherwise Noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V _{DS}	20	V
Gate-Source Voltage	V _{GS}	±8	
Continuous Drain Current (T _J = 150°C) ^a	I _D	±5.4	A
		±4.2	
Pulsed Drain Current	I _{DM}	±30	
Continuous Source Current (Diode Conduction) ^a	I _S	1.25	
Maximum Power Dissipation ^a	P _D	1.5	W
		1.0	
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 to 150	°C

Thermal Resistance Ratings

Parameter	Symbol	Limit	Unit
Maximum Junction-to-Ambient ^a	R _{thJA}	83	°C/W

Notes

a. Surface Mounted on FR4 Board, t ≤ 10 sec.

Updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #70174. A SPICE Model data sheet is available for this product (FaxBack document #70545).

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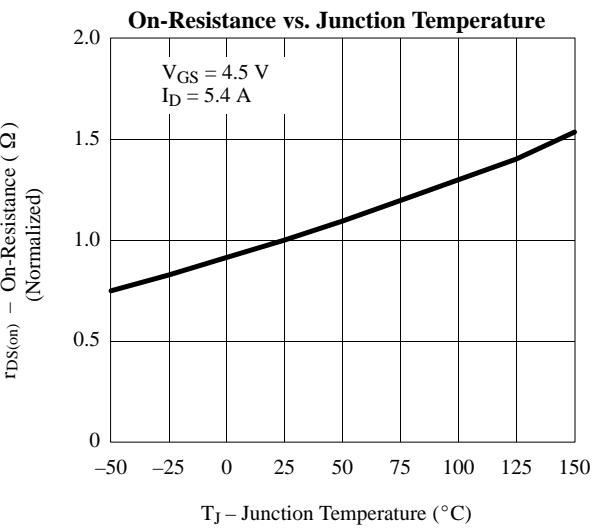
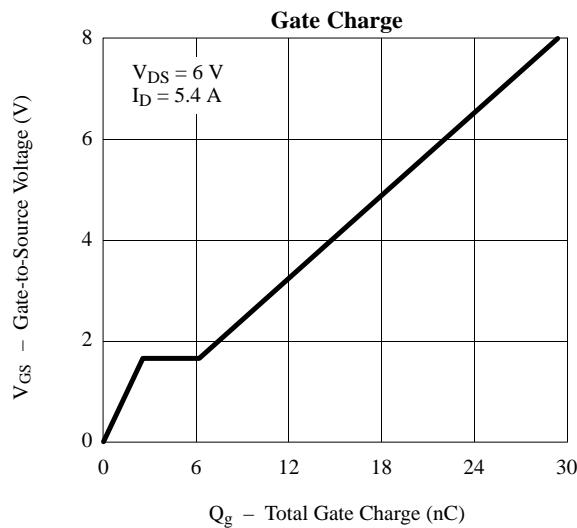
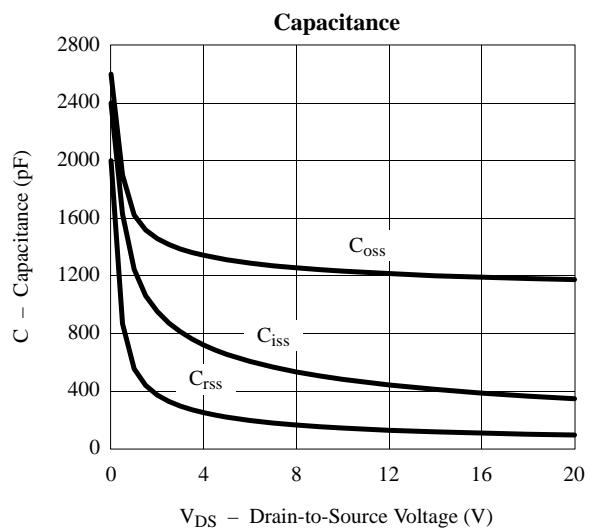
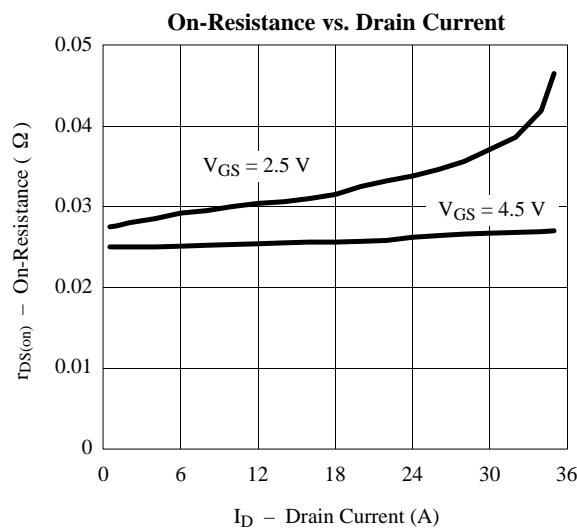
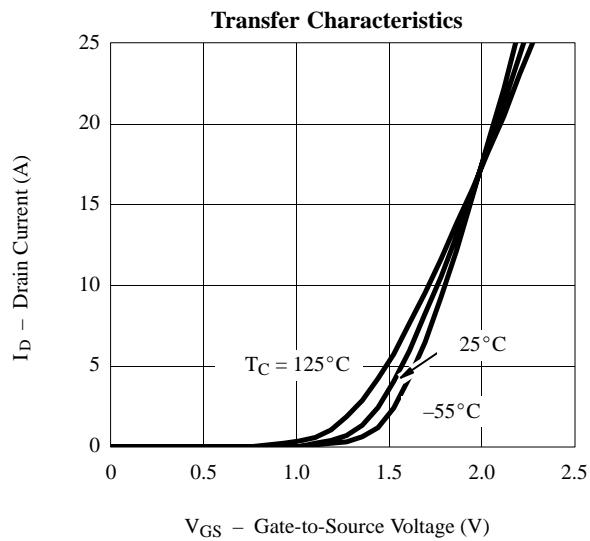
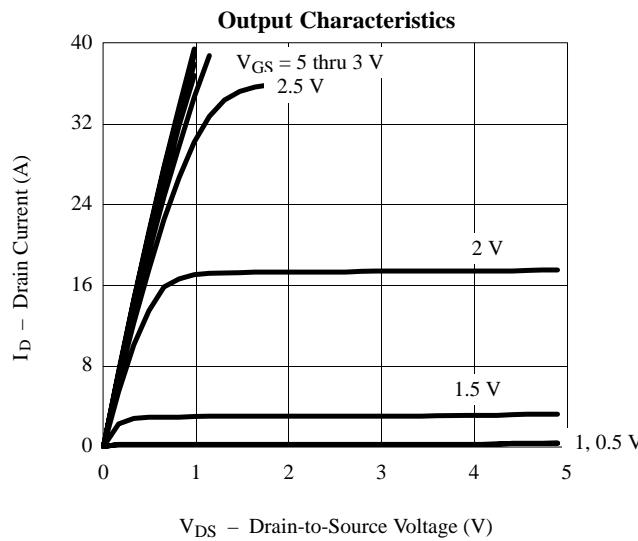
Specifications ($T_J = 25^\circ\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	$V_{GS(\text{th})}$	$V_{DS} = V_{GS}, I_D = 250 \mu\text{A}$	0.6			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0 \text{ V}, V_{GS} = \pm 8 \text{ V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 20 \text{ V}, V_{GS} = 0 \text{ V}$		1		μA
		$V_{DS} = 20 \text{ V}, V_{GS} = 0 \text{ V}, T_J = 55^\circ\text{C}$		5		
On-State Drain Current ^a	$I_{D(\text{on})}$	$V_{DS} \geq 5 \text{ V}, V_{GS} = 4.5 \text{ V}$	± 20			A
		$V_{DS} \geq 5 \text{ V}, V_{GS} = 2.5 \text{ V}$	± 8			
Drain-Source On-State Resistance ^a	$r_{DS(\text{on})}$	$V_{GS} = 4.5 \text{ V}, I_D = 5.4 \text{ A}$		0.025	0.035	Ω
		$V_{GS} = 2.5 \text{ V}, I_D = 4.9 \text{ A}$		0.030	0.04	
Forward Transconductance ^a	g_{fs}	$V_{DS} = 10 \text{ V}, I_D = 5.4 \text{ A}$		22		S
Diode Forward Voltage ^a	V_{SD}	$I_S = 1.25 \text{ A}, V_{GS} = 0 \text{ V}$		0.7	1.2	V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = 6 \text{ V}, V_{GS} = 4.5 \text{ V}, I_D = 5.4 \text{ A}$		18	35	nC
Gate-Source Charge	Q_{gs}			2.5		
Gate-Drain Charge	Q_{gd}			4		
Turn-On Delay Time	$t_{d(\text{on})}$	$V_{DD} = 6 \text{ V}, R_L = 6 \Omega$ $I_D \cong 1 \text{ A}, V_{GEN} = 4.5 \text{ V}, R_G = 6 \Omega$		35	60	ns
Rise Time	t_r			65	100	
Turn-Off Delay Time	$t_{d(\text{off})}$			100	150	
Fall Time	t_f			33	60	
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = 1.25 \text{ A}, di/dt = 100 \text{ A}/\mu\text{s}$		50	100	

Notes

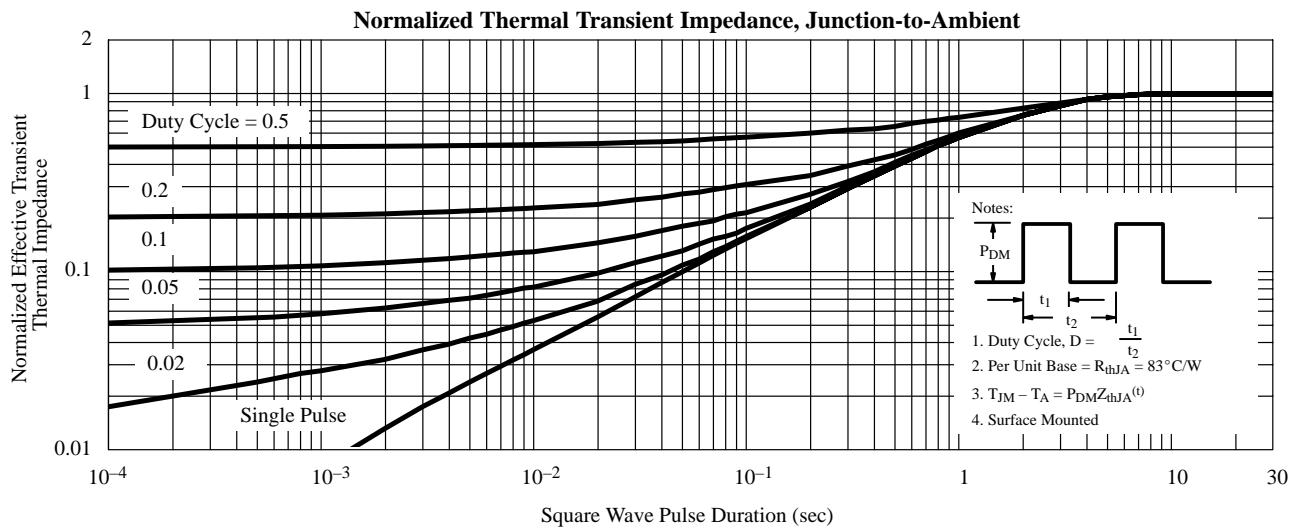
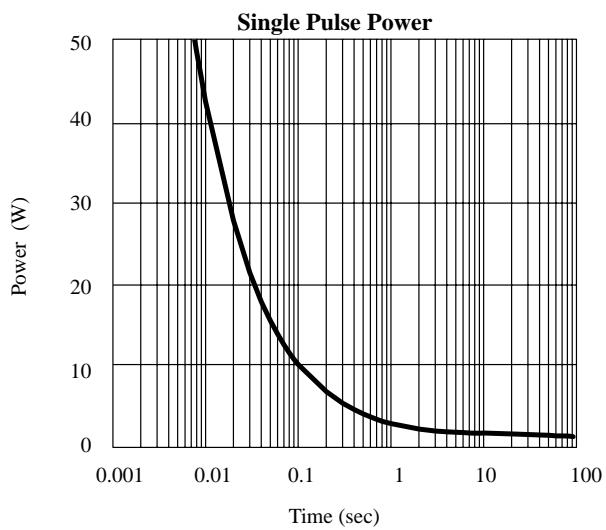
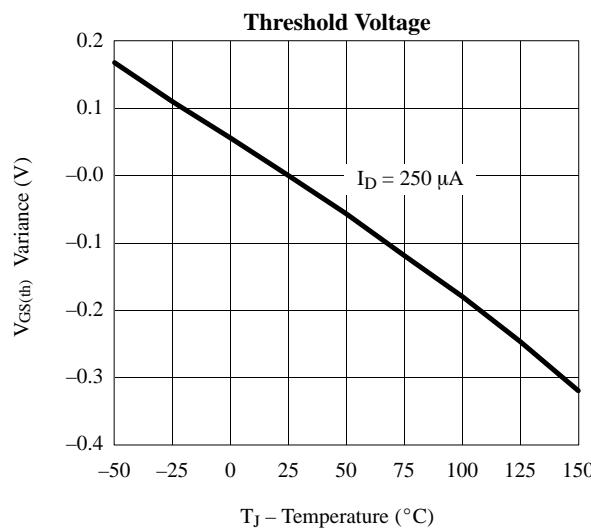
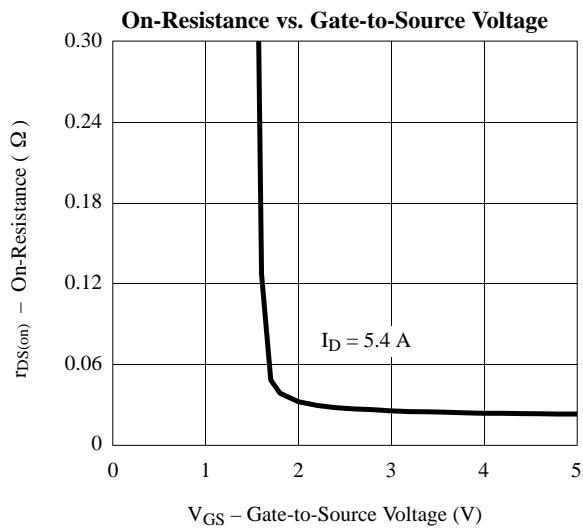
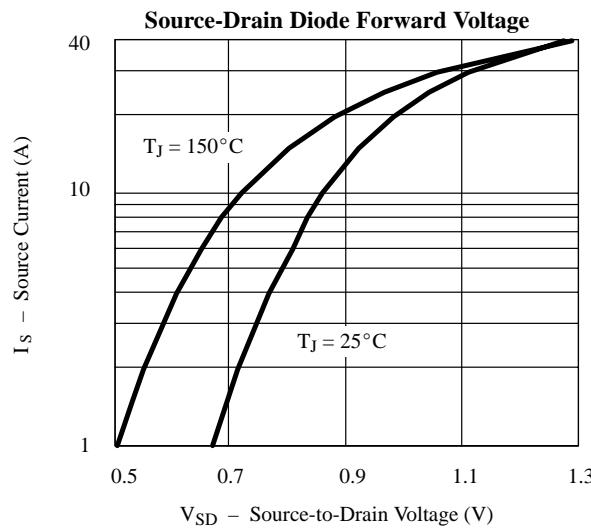
- a. Pulse test; pulse width $\leq 300 \mu\text{s}$, duty cycle $\leq 2\%$.
- b. Guaranteed by design, not subject to production testing.

Typical Characteristics (25°C Unless Otherwise Noted)



Si6426DQ

Typical Characteristics (25°C Unless Otherwise Noted)



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