

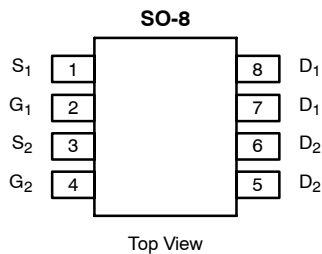


Dual P-Channel 1.8-V (G-S) MOSFET

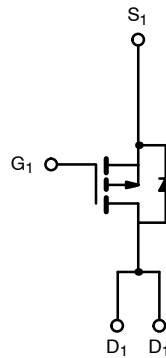
PRODUCT SUMMARY

V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
-8	0.021 @ $V_{GS} = -4.5$ V	-8.0
	0.027 @ $V_{GS} = -2.5$ V	-7.0
	0.040 @ $V_{GS} = -1.8$ V	-5.8

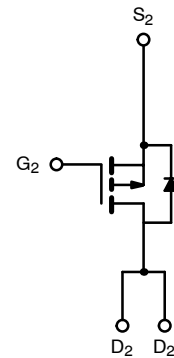
TrenchFET[®]
Power MOSFETs
1.8-V Rated



Ordering Information: Si4965DY
Si4965DY-T1 (with Tape and Reel)



P-Channel MOSFET



P-Channel MOSFET

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

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	-8	V
Gate-Source Voltage		V_{GS}	± 8	
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^{a, b}	$T_A = 25^\circ\text{C}$	I_D	-8.0	A
	$T_A = 70^\circ\text{C}$		-6.4	
Pulsed Drain Current		I_{DM}	-30	
Continuous Source Current (Diode Conduction) ^{a, b}		I_S	-1.7	
Maximum Power Dissipation ^{a, b}	$T_A = 25^\circ\text{C}$	P_D	2.0	W
	$T_A = 70^\circ\text{C}$		1.3	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient ^a	$t \leq 10$ sec	R_{thJA}		62.5	$^\circ\text{C/W}$
	Steady State		93		

Notes

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

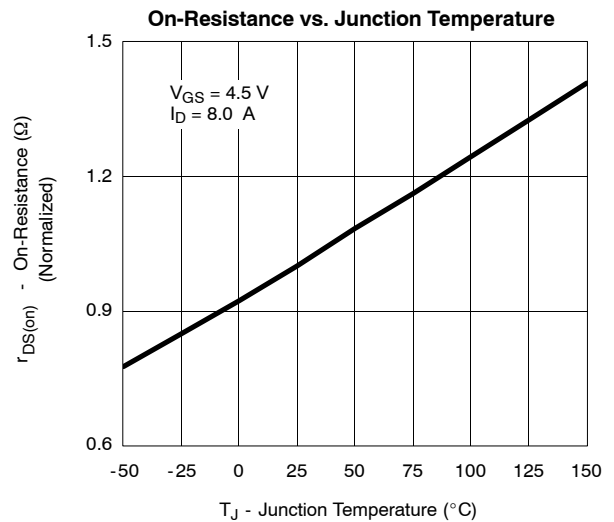
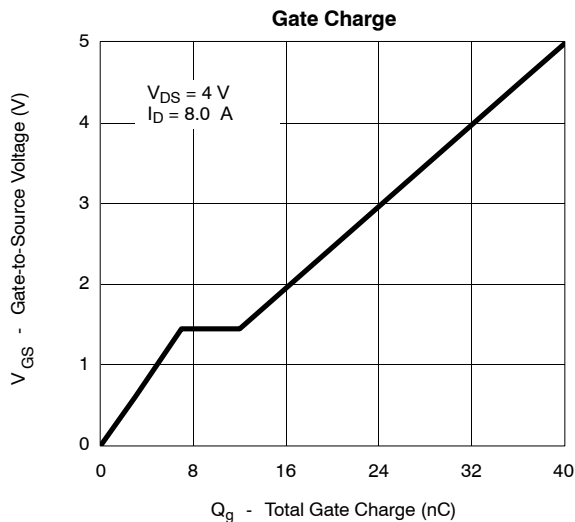
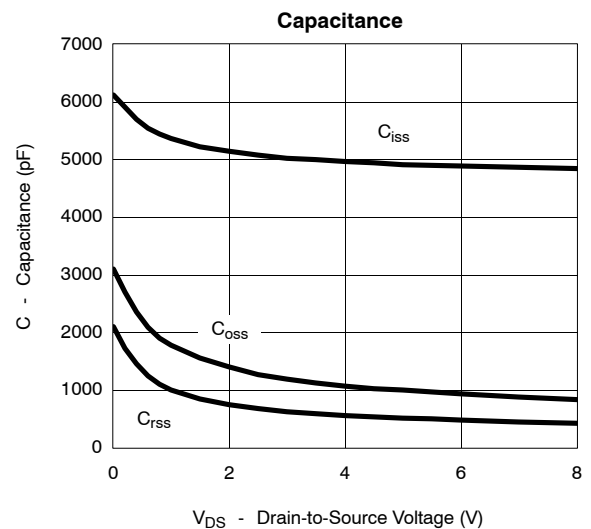
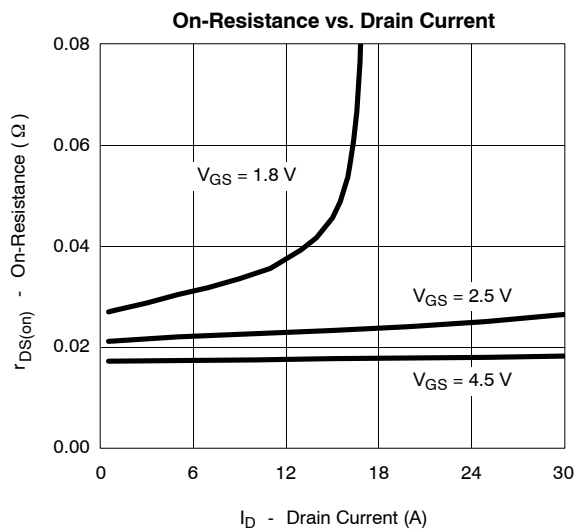
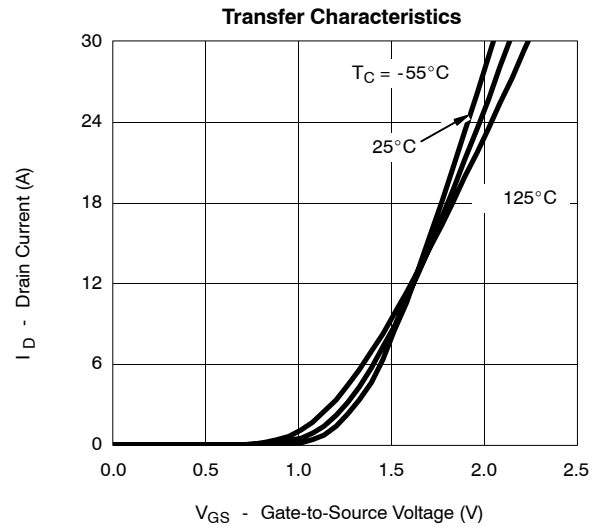
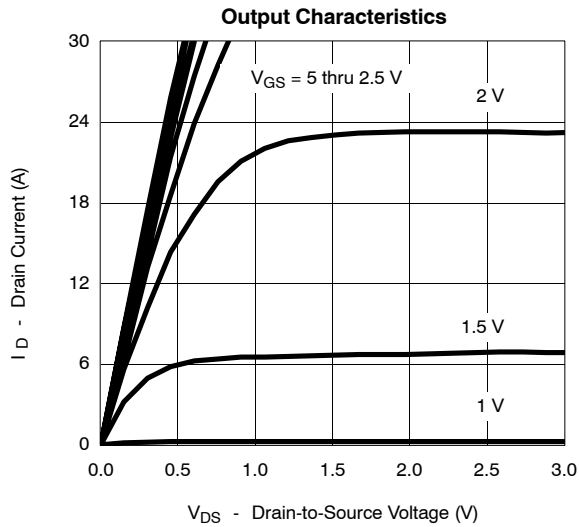
SPECIFICATIONS ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\ \mu\text{A}$	-0.45			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\ \text{V}, V_{GS} = \pm 8\ \text{V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -8\ \text{V}, V_{GS} = 0\ \text{V}$			-1	μA
		$V_{DS} = -8\ \text{V}, V_{GS} = 0\ \text{V}, T_J = 70^\circ\text{C}$			-5	
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} \geq -5\ \text{V}, V_{GS} = -4.5\ \text{V}$	-20			A
Drain-Source On-State Resistance ^a	$r_{DS(on)}$	$V_{GS} = -4.5\ \text{V}, I_D = -8.0\ \text{A}$		0.0175	0.021	Ω
		$V_{GS} = -2.5\ \text{V}, I_D = -7.0\ \text{A}$		0.022	0.027	
		$V_{GS} = -1.8\ \text{V}, I_D = -5.8\ \text{A}$		0.031	0.040	
Forward Transconductance ^a	g_{fs}	$V_{DS} = -5\ \text{V}, I_D = -8.0\ \text{A}$		27		S
Diode Forward Voltage ^a	V_{SD}	$I_S = -1.7\ \text{A}, V_{GS} = 0\ \text{V}$			-1.2	V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = -4\ \text{V}, V_{GS} = -4.5\ \text{V}, I_D = -8.0\ \text{A}$		36	55	nC
Gate-Source Charge	Q_{gs}			7.5		
Gate-Drain Charge	Q_{gd}			5.0		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -4\ \text{V}, R_L = 4\ \Omega$ $I_D \cong -1\ \text{A}, V_{GEN} = -4.5\ \text{V}, R_G = 6\ \Omega$		35	70	ns
Rise Time	t_r			45	90	
Turn-Off Delay Time	$t_{d(off)}$			170	340	
Fall Time	t_f			90	180	
Source-Drain Reverse Recovery Time	t_{rr}			60	90	

Notes

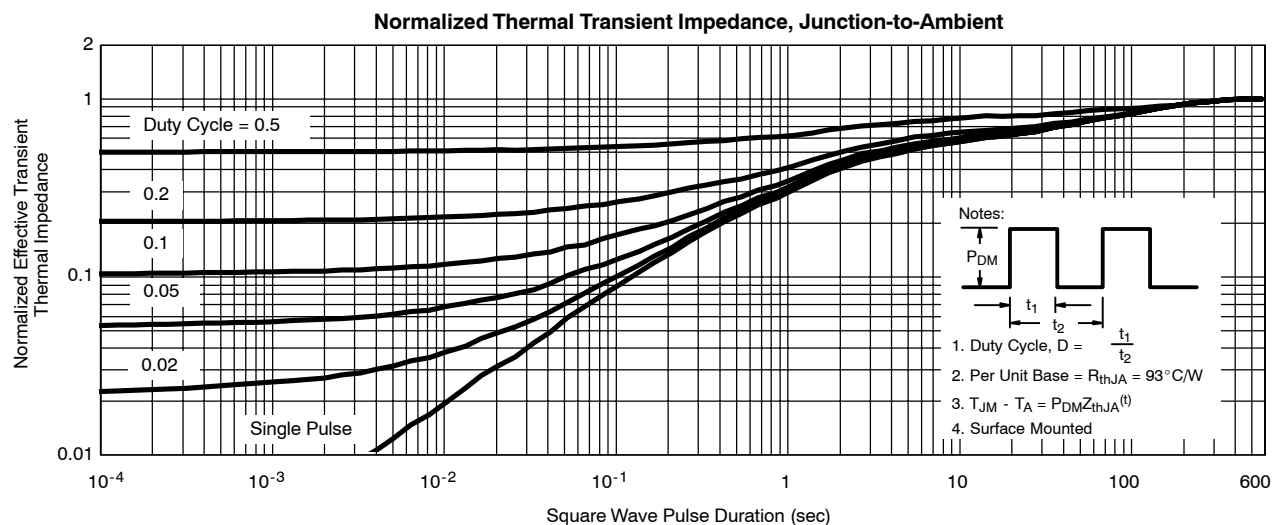
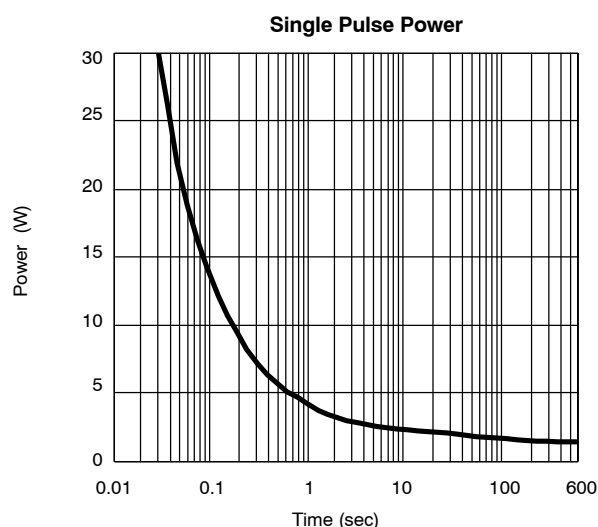
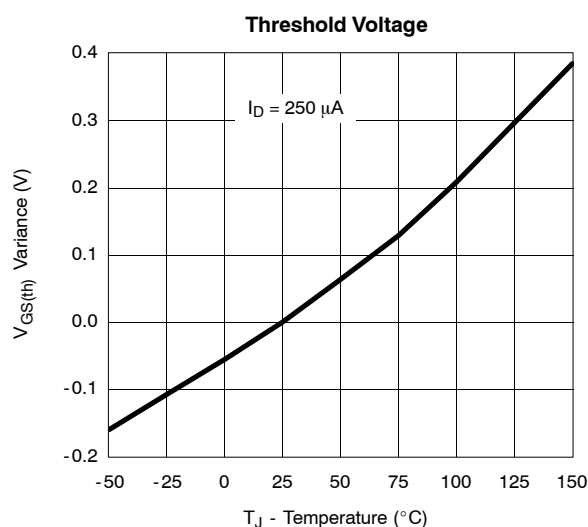
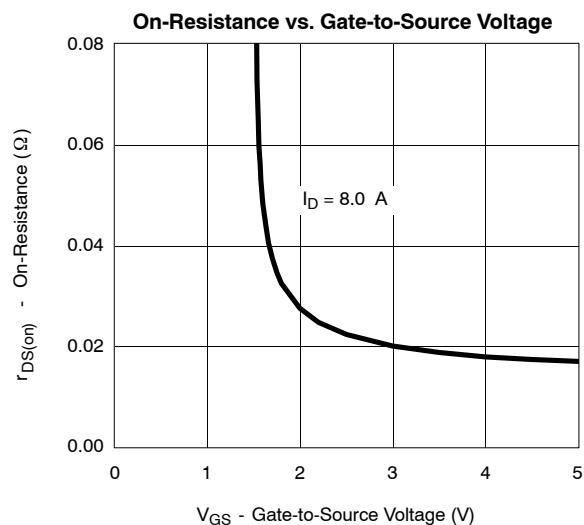
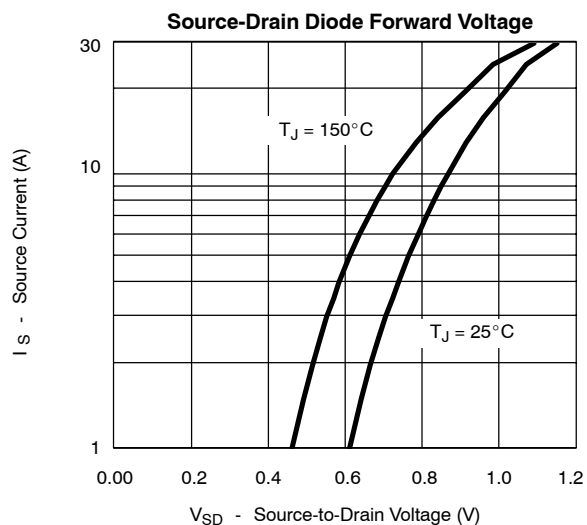
- a. Pulse test; pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.
b. Guaranteed by design, not subject to production testing.



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



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