

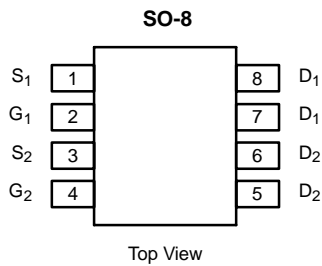


Dual P-Channel 30-V(D-S) MOSFET

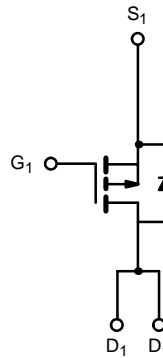
PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
-30	0.053 @ $V_{GS} = -10$ V	-4.9
	0.095 @ $V_{GS} = -4.5$ V	-3.6

FEATURES

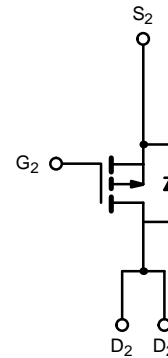
- 100% R_g Tested



Ordering Information: Si4953DY
Si4953DY-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}	-30	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^a	I_D	$T_A = 25^\circ\text{C}$	-4.9
		$T_A = 70^\circ\text{C}$	-3.9
Pulsed Drain Current	I_{DM}	-30	A
Continuous Source Current (Diode Conduction) ^a	I_S	-1.7	
Maximum Power Dissipation ^a	P_D	$T_A = 25^\circ\text{C}$	2.0
		$T_A = 70^\circ\text{C}$	1.3
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS			
Parameter	Symbol	Limit	Unit
Maximum Junction-to-Ambient ^a	R_{thJA}	62.5	$^\circ\text{C}/\text{W}$

Notes

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

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

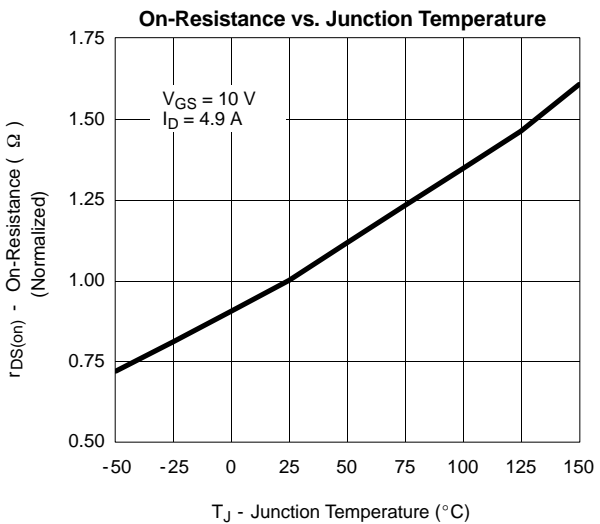
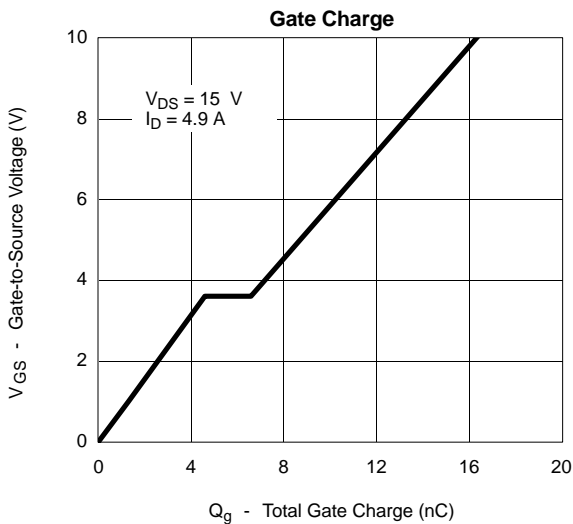
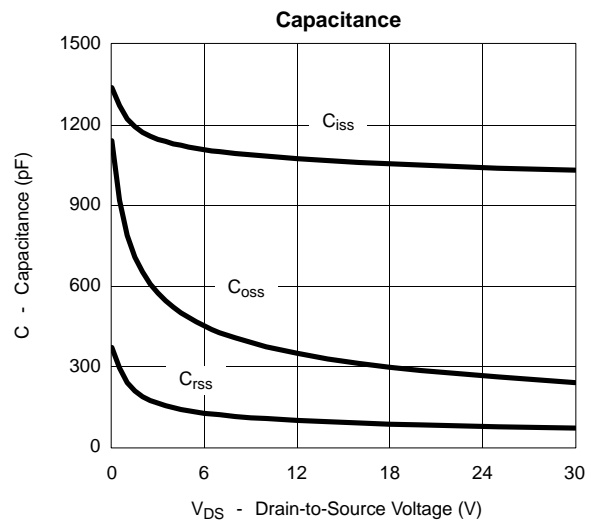
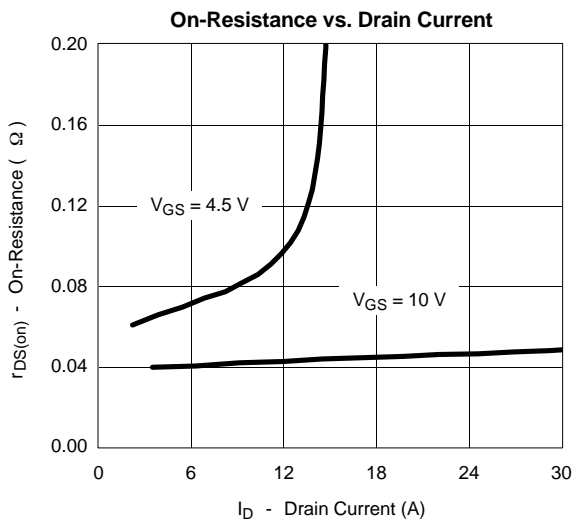
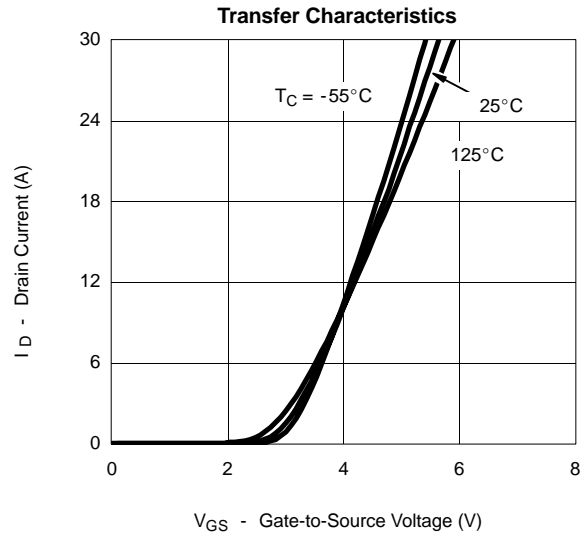
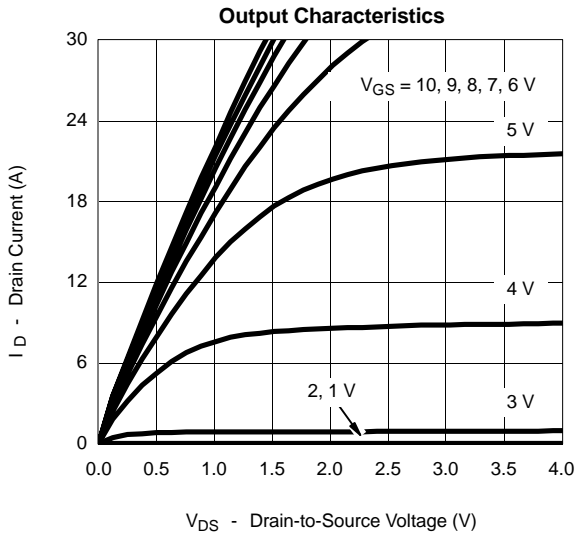
SPECIFICATIONS ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ ^a	Max	Unit
Static						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\ \mu\text{A}$	-1			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\ \text{V}, V_{GS} = \pm 20\ \text{V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -30\ \text{V}, V_{GS} = 0\ \text{V}$			-1	μA
		$V_{DS} = -30\ \text{V}, V_{GS} = 0\ \text{V}, T_J = 55^\circ\text{C}$			-25	
On-State Drain Current ^b	$I_{D(on)}$	$V_{DS} \leq -5\ \text{V}, V_{GS} = -10\ \text{V}$	-20			A
Drain-Source On-State Resistance ^b	$r_{DS(on)}$	$V_{GS} = -10\ \text{V}, I_D = -4.9\ \text{A}$		0.043	0.053	Ω
		$V_{GS} = -4.5\ \text{V}, I_D = -3.6\ \text{A}$		0.070	0.095	
Forward Transconductance ^b	g_{fs}	$V_{DS} = -15\ \text{V}, I_D = -4.9\ \text{A}$		10		S
Diode Forward Voltage ^b	V_{SD}	$I_S = -1.7\ \text{A}, V_{GS} = 0\ \text{V}$		0.8	-1.2	V
Dynamic^a						
Total Gate Charge	Q_g	$V_{DS} = -15\ \text{V}, V_{GS} = -10\ \text{V}, I_D = -4.9\ \text{A}$		16	25	nC
Gate-Source Charge	Q_{gs}			5		
Gate-Drain Charge	Q_{gd}			2		
Gate Resistance	R_g		2		7.1	Ω
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -15\ \text{V}, R_L = 15\ \Omega$ $I_D \cong -1\ \text{A}, V_{GEN} = -10\ \text{V}, R_G = 6\ \Omega$		9	15	ns
Rise Time	t_r			13	20	
Turn-Off Delay Time	$t_{d(off)}$			25	40	
Fall Time	t_f			15	25	
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = -1.7\ \text{A}, di/dt = 100\ \text{A}/\mu\text{s}$		60	90	

Notes

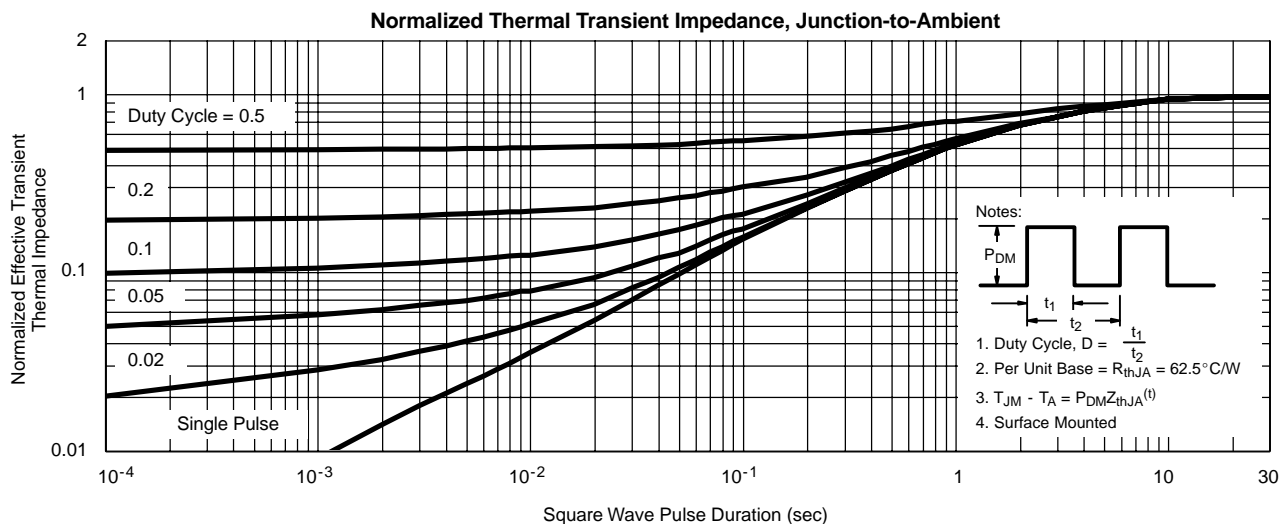
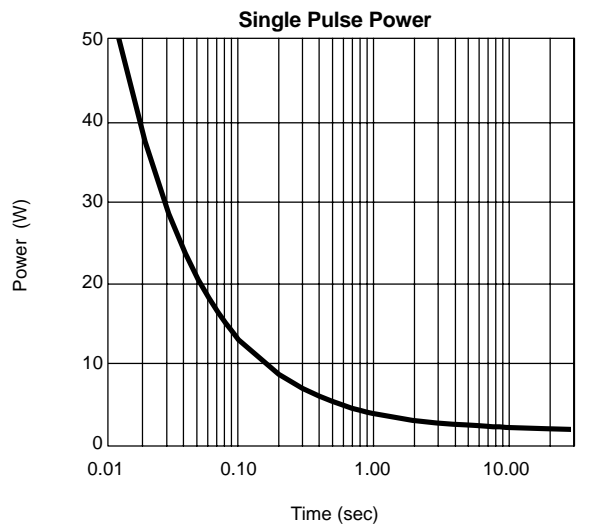
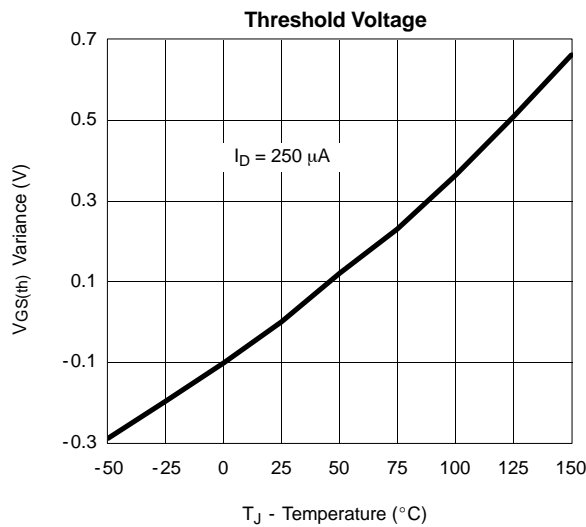
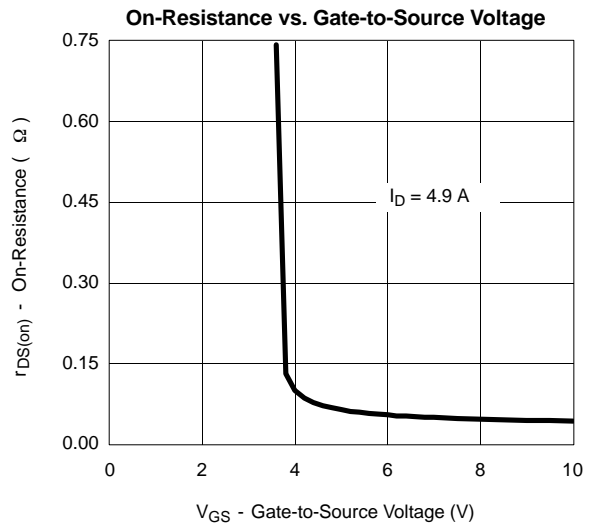
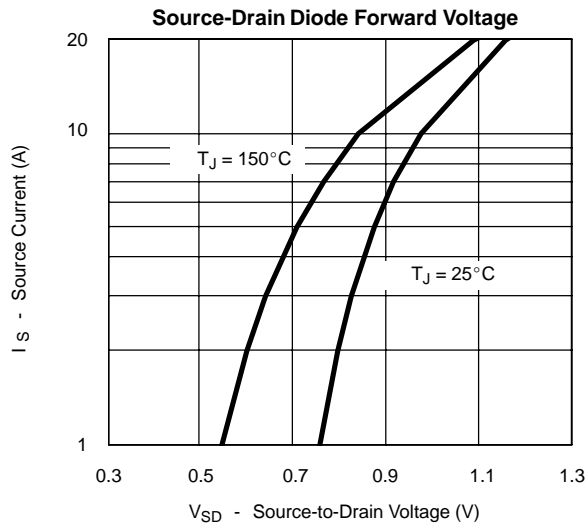
- a. For design aid only; not subject to production testing.
 b. Pulse test; pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



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