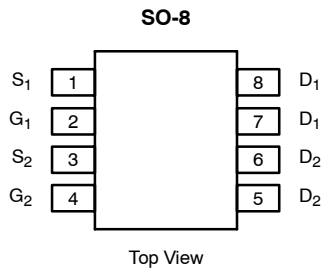




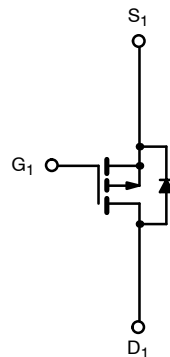
Dual P-Channel 30-V (D-S) MOSFET

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
-30	0.080 @ $V_{GS} = -10$ V	-3.9
	0.135 @ $V_{GS} = -4.5$ V	-3.0

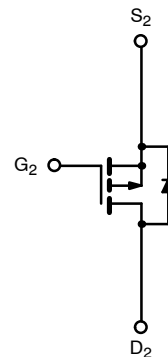
TrenchFET®
Power MOSFETs



Ordering Information: Si4947ADY
Si4947ADY-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	10 secs	Steady State
Drain-Source Voltage		V_{DS}	-30	
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^a	$T_A = 25^\circ\text{C}$	I_D	-3.9	-3.0
	$T_A = 70^\circ\text{C}$		-3.1	-2.4
Pulsed Drain Current		I_{DM}	-20	
continuous Source Current (Diode Conduction) ^a		I_S	-1.7	-1.0
Maximum Power Dissipation ^a	$T_A = 25^\circ\text{C}$	P_D	2.0	1.2
	$T_A = 70^\circ\text{C}$		1.3	0.76
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	

THERMAL RESISTANCE RATINGS				
Parameter		Symbol	Typical	Maximum
Maximum Junction-to-Ambient ^a	$t \leq 10$ sec	R_{thJA}	54	62.5
	Steady State		87	105
Maximum Junction-to-Foot	Steady State	R_{thJF}	34	45

Notes

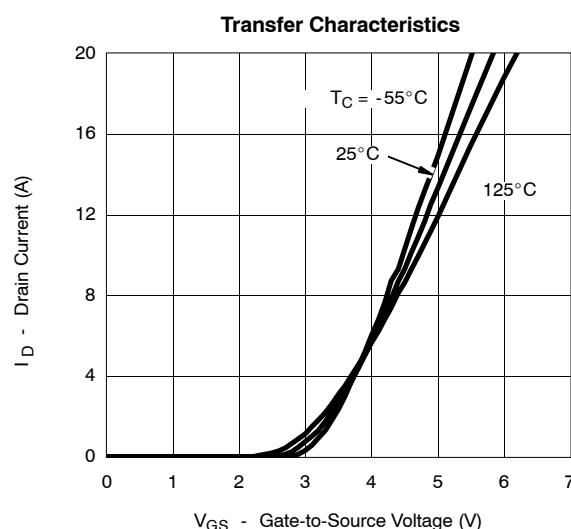
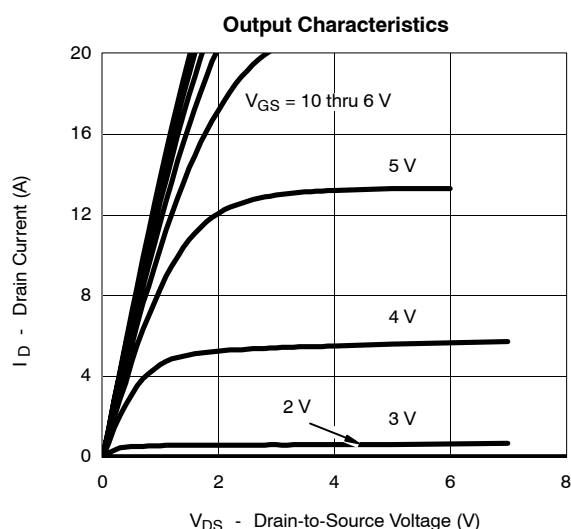
a. Surface Mounted on 1" x 1" FR4 Board.

SPECIFICATIONS ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\ \mu\text{A}$	-1.0			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
		$V_{DS} = -30\ \text{V}, V_{GS} = 0\ \text{V}, T_J = 70^\circ\text{C}$			-10	
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} = -5\ \text{V}, V_{GS} = -10\ \text{V}$	-15			A
Drain-Source On-State Resistance ^a	$r_{DS(on)}$	$V_{GS} = -10\ \text{V}, I_D = -3.9\ \text{A}$		0.062	0.080	Ω
		$V_{GS} = -4.5\ \text{V}, I_D = -3.0\ \text{A}$		0.105	0.135	
Forward Transconductance ^a	g_{fs}	$V_{DS} = -15\ \text{V}, I_D = -2.5\ \text{A}$		5.0		S
Diode Forward Voltage ^a	V_{SD}	$I_S = -1.7\ \text{A}, V_{GS} = 0\ \text{V}$		-0.82	-1.2	V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = -10\ \text{V}, V_{GS} = -5\ \text{V}, I_D = -3.9\ \text{A}$		5.8	8	nC
Gate-Source Charge	Q_{gs}			2		
Gate-Drain Charge	Q_{gd}			1.9		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -10\ \text{V}, R_L = 10\ \Omega$ $I_D \cong -1\ \text{A}, V_{GEN} = -10\ \text{V}, R_G = 6\ \Omega$		8	15	ns
Rise Time	t_r			9	18	
Turn-Off Delay Time	$t_{d(off)}$			21	40	
Fall Time	t_f			10	20	
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = -1.7\ \text{A}, di/dt = 100\ \text{A}/\mu\text{s}$		27	40	

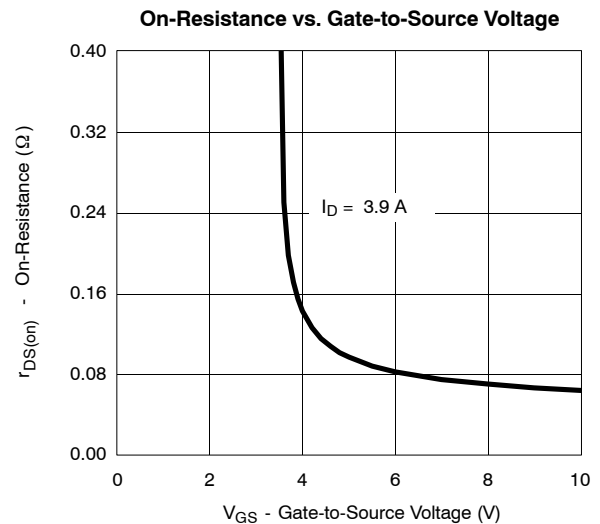
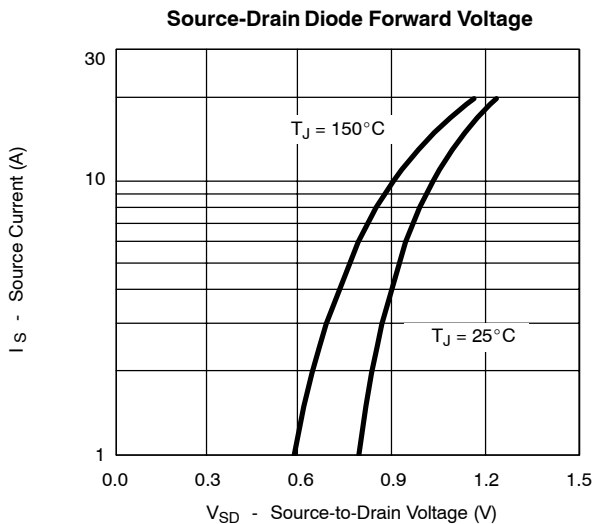
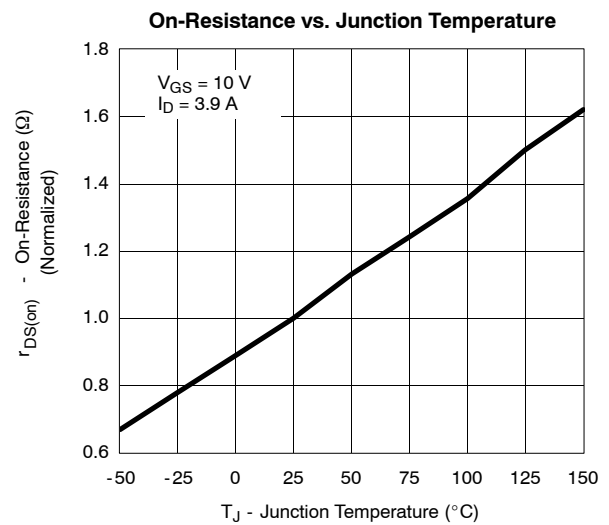
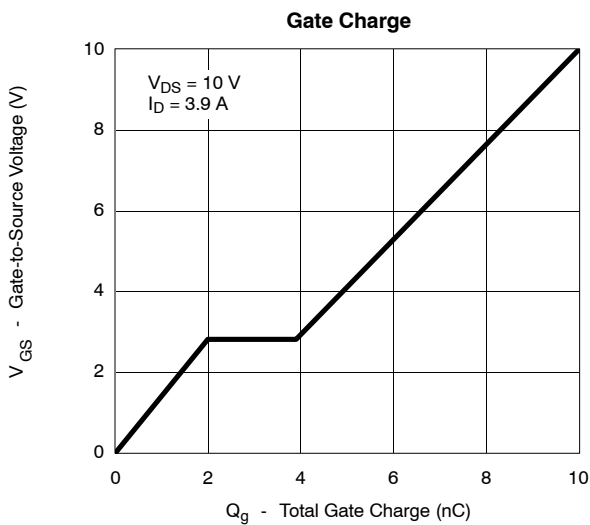
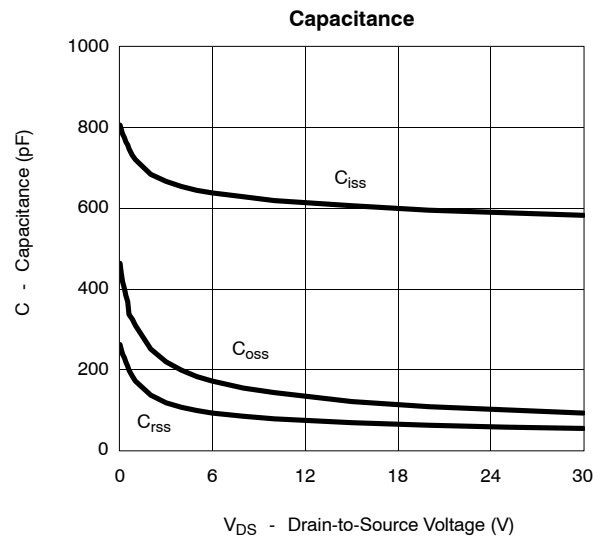
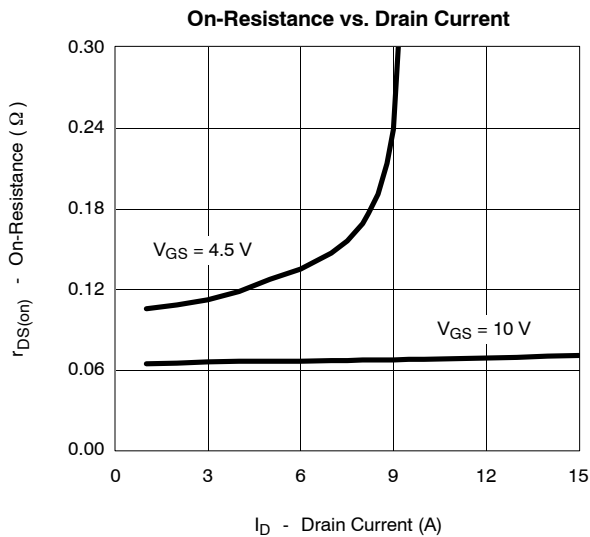
Notes

- 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)



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

