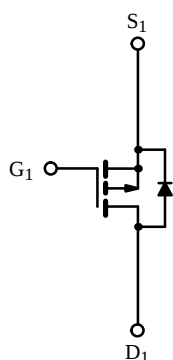
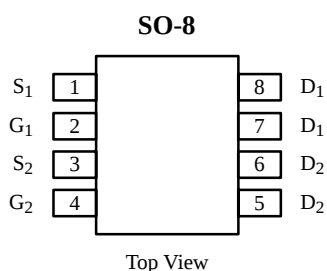


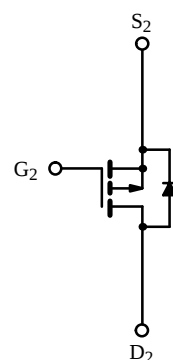
Dual P-Channel 30-V (D-S) Rated MOSFET

Product Summary

V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
-30	0.085 @ $V_{GS} = -10$ V	± 3.5
	0.19 @ $V_{GS} = -4.5$ V	± 2.5



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	$T_A = 25^{\circ}\text{C}$	I_D	± 3.5	A
	$T_A = 70^{\circ}\text{C}$		± 2.8	
Pulsed Drain Current		I_{DM}	± 20	
Continuous Source Current (Diode Conduction) ^a		I_S	−1.7	
Maximum Power Dissipation ^a	$T_A = 25^{\circ}\text{C}$	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	Limit	Unit
Maximum Junction-to-Ambient ^a	R_{thJA}	62.5	$^\circ\text{C/W}$

Notes

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

Updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #70156.

A SPICE Model data sheet is available for this product (FaxBack document #70554).

Si4947DY

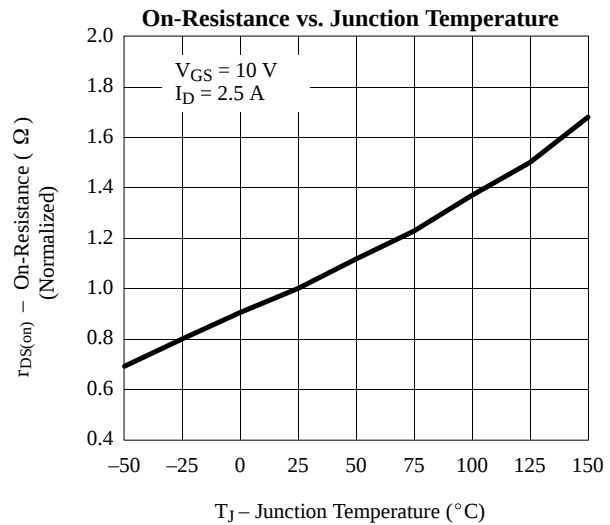
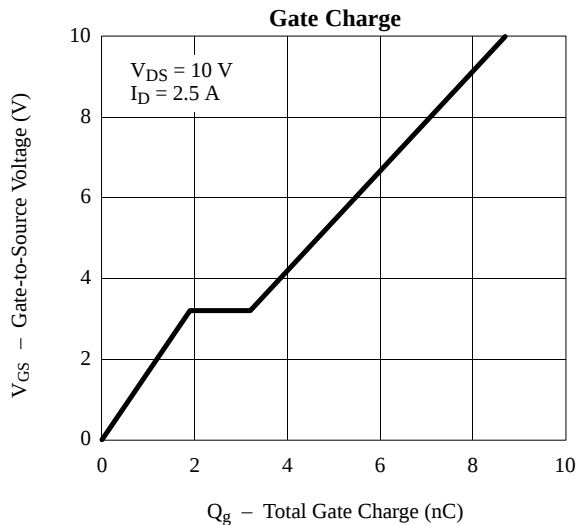
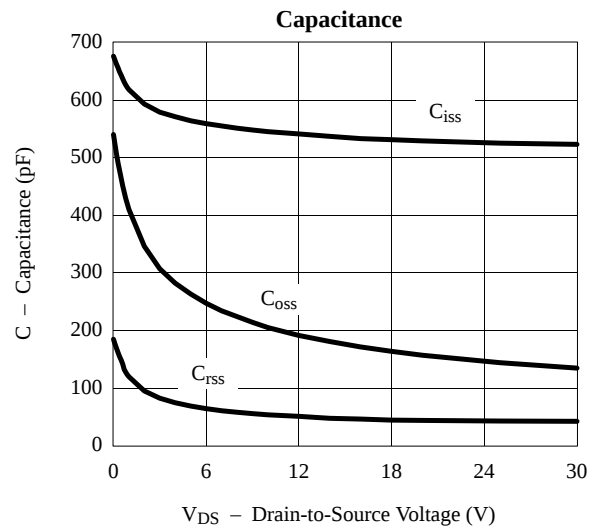
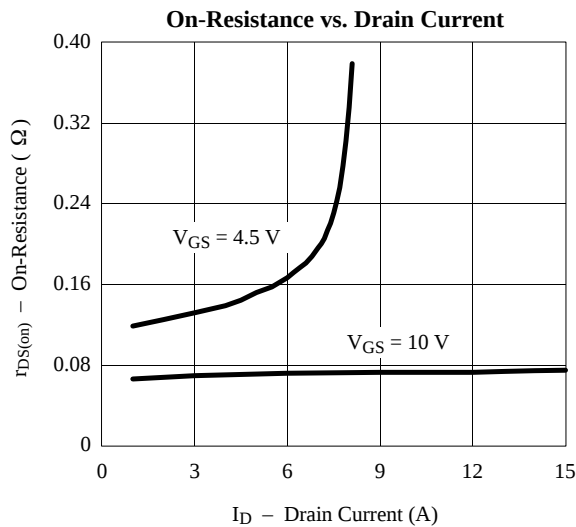
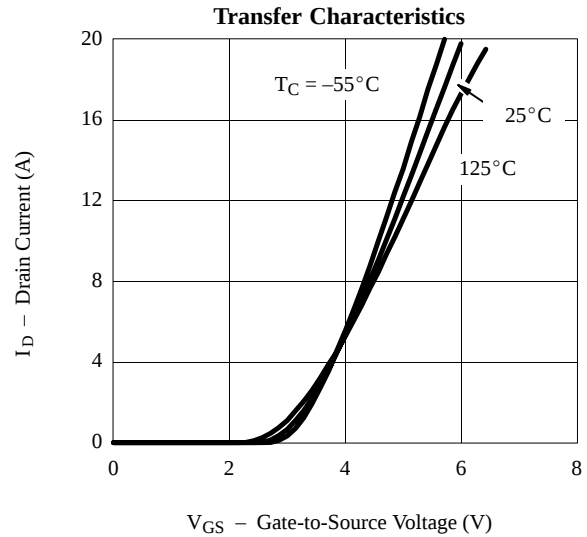
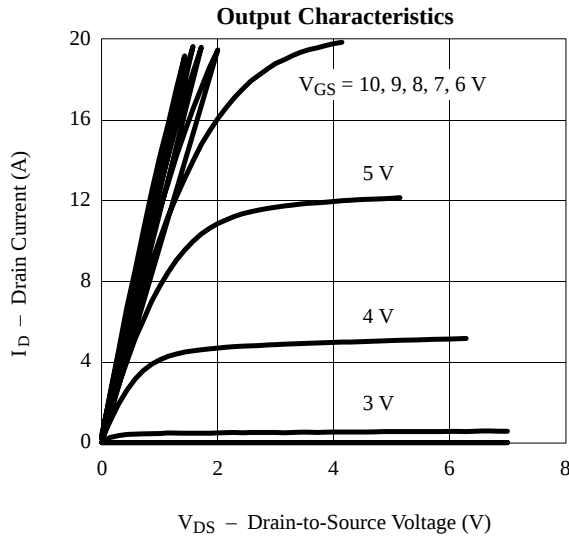
Specifications ($T_J = 25^\circ\text{C}$ Unless Otherwise Noted)

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
		$V_{DS} = -30\ \text{V}, V_{GS} = 0\ \text{V}, T_J = 55^\circ\text{C}$			-25	
On-State Drain Current ^b	$I_{D(on)}$	$V_{DS} \geq -5\ \text{V}, V_{GS} = -10\ \text{V}$	-15			A
Drain-Source On-State Resistance ^b	$r_{DS(on)}$	$V_{GS} = -10\ \text{V}, I_D = 2.5\ \text{A}$		0.066	0.085	Ω
		$V_{GS} = -4.5\ \text{V}, I_D = 1.8\ \text{A}$		0.125	0.19	
Forward Transconductance ^b	g_{fs}	$V_{DS} = -15\ \text{V}, I_D = -2.5\ \text{A}$		5.0		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	$V_{DS} = -10\ \text{V}, V_{GS} = -10\ \text{V}, I_D = -2.5\ \text{A}$		8.7	15	nC
Gate-Source Charge	Q_{gs}			1.9		
Gate-Drain Charge	Q_{gd}			1.3		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -10\ \text{V}, R_L = 10\ \Omega$ $I_D \cong -1\ \text{A}, V_{GEN} = -10\ \text{V}, R_G = 6\ \Omega$		7	15	ns
Rise Time	t_r			9	18	
Turn-Off Delay Time	$t_{d(off)}$			14	27	
Fall Time	t_f			8	15	
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = -1.7\ \text{A}, di/dt = 100\ \text{A}/\mu\text{s}$		50	80	

Notes

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

Typical Characteristics (25°C Unless Otherwise Noted)



Si4947DY

Typical Characteristics (25°C Unless Otherwise Noted)

