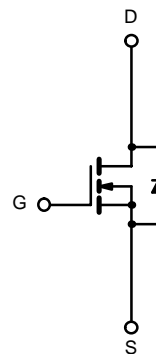
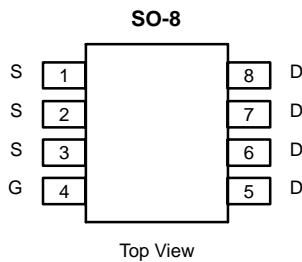




N-Channel 200-V (D-S) MOSFET

PRODUCT SUMMARY		
V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
200	0.080 @ V _{GS} = 10 V	4.0
	0.090 @ V _{GS} = 6.0 V	3.8

TrenchFET[®]
Power MOSFETs



Ordering Information: Si4490DY
Si4490DY-T1 (with Tape and Reel)

ABSOLUTE MAXIMUM RATINGS (T _A = 25 °C UNLESS OTHERWISE NOTED)					
Parameter	Symbol	10 secs	Steady State	Unit	
Drain-Source Voltage	V _{DS}	200		V	
Gate-Source Voltage	V _{GS}	± 20			
Continuous Drain Current (T _J = 150 °C) ^a	I _D	T _A = 25 °C	4.0	2.85	A
		T _A = 70 °C	3.2	2.3	
Pulsed Drain Current	I _{DM}	40			
Avalanch Current	L = 0.1 mH	I _{AS}		15	
Continuous Source Current (Diode Conduction) ^a	I _S	2.6	1.3		
Maximum Power Dissipation ^a	P _D	T _A = 25 °C	3.1	1.56	W
		T _A = 70 °C	2.0	1.0	
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 to 150		°C	

THERMAL RESISTANCE RATINGS					
Parameter	Symbol	Typical	Maximum	Unit	
Maximum Junction-to-Ambient ^a	R _{thJA}	t ≤ 10 sec	33	40	°C/W
		Steady State	65	80	
Maximum Junction-to-Foot (Drain)	R _{thJF}	17	21		

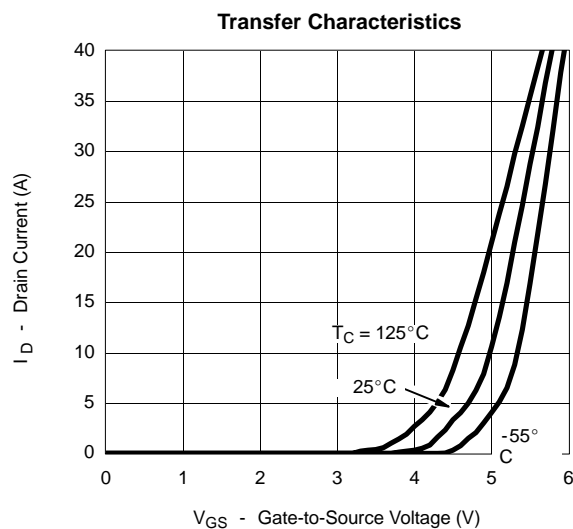
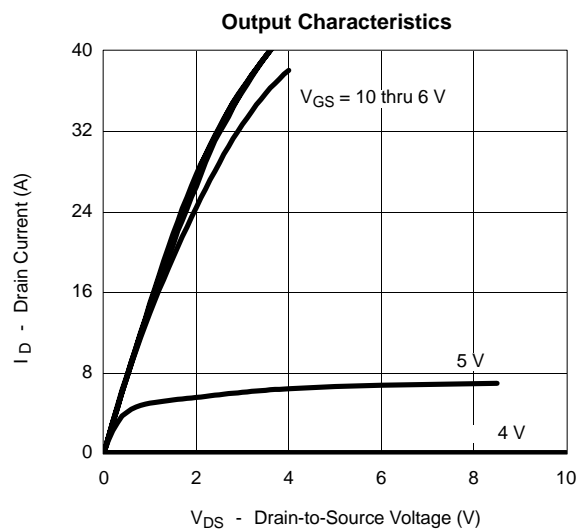
Notes
a. Surface Mounted on 1" x 1" FR4 Board.

SPECIFICATIONS (T_J = 25 °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 μA	2.0			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 160 V, V _{GS} = 0 V			1	μA
		V _{DS} = 160 V, V _{GS} = 0 V, T _J = 55°C			5	
On-State Drain Current ^a	I _{D(on)}	V _{DS} ≥ 5 V, V _{GS} = 10 V	40			A
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 10 V, I _D = 4.0 A		0.065	0.080	Ω
		V _{GS} = 6.0 V, I _D = 4.0 A		0.070	0.090	
Forward Transconductance ^a	g _{fs}	V _{DS} = 15 V, I _D = 5 A		19		S
Diode Forward Voltage ^a	V _{SD}	I _S = 2.8 A, V _{GS} = 0 V		0.75	1.2	V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = 100 V, V _{GS} = 10 V, I _D = 4.0 A		34	42	nC
Gate-Source Charge	Q _{gs}			7.5		
Gate-Drain Charge	Q _{gd}			12.0		
Gate Resistance	R _g		0.2	0.85	1.3	Ω
Turn-On Delay Time	t _{d(on)}	V _{DD} = 100 V, R _L = 25 Ω I _D = 4.0 A, V _{GEN} = 10 V, R _G = 6 Ω		14	20	ns
Rise Time	t _r			20	30	
Turn-Off Delay Time	t _{d(off)}			32	50	
Fall Time	t _f			25	35	
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 2.8 A, di/dt = 100 A/μs		70	100	

Notes

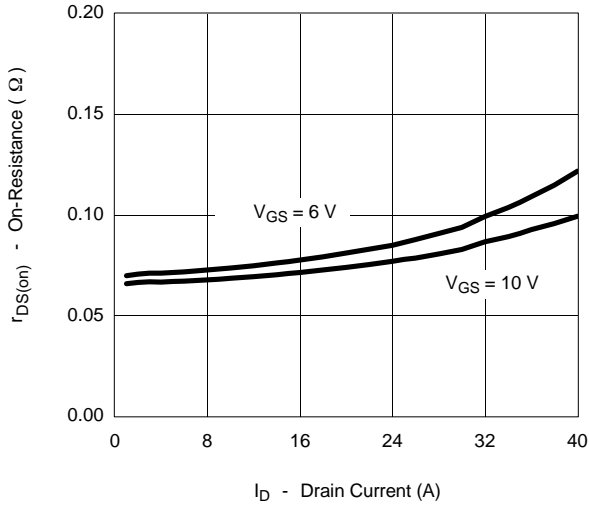
- a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
b. Guaranteed by design, not subject to production testing.

TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

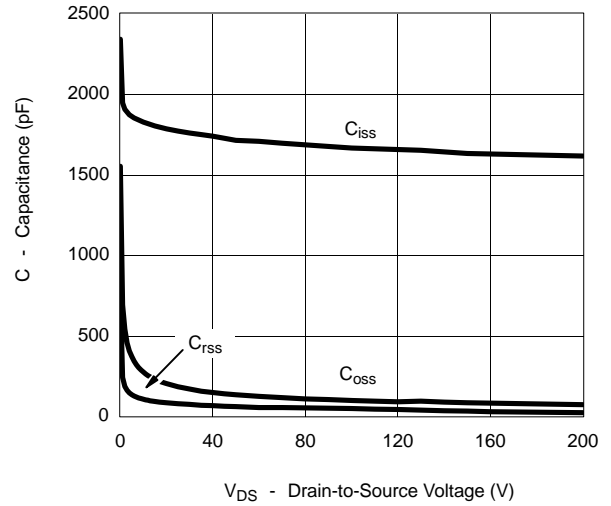


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

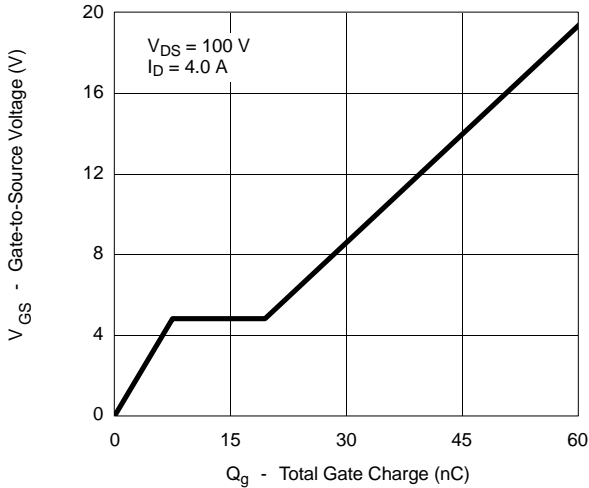
On-Resistance vs. Drain Current



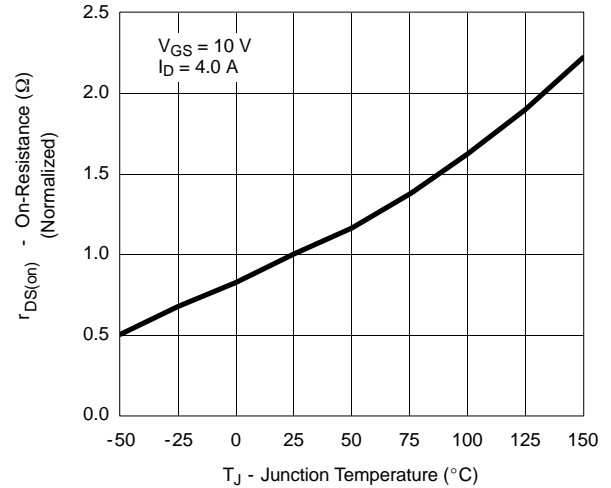
Capacitance



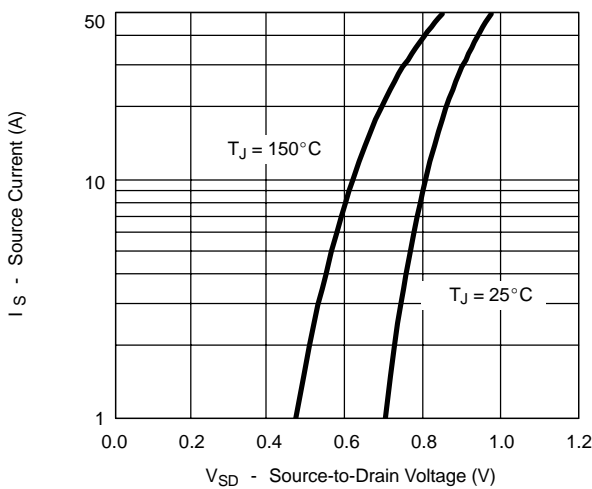
Gate Charge



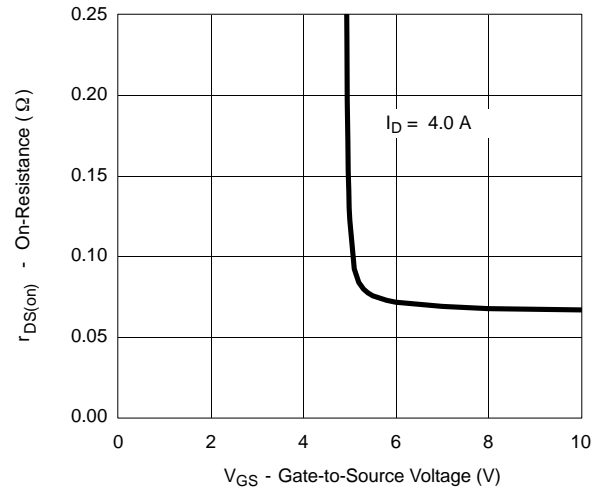
On-Resistance vs. Junction Temperature



Source-Drain Diode Forward Voltage



On-Resistance vs. Gate-to-Source Voltage



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

