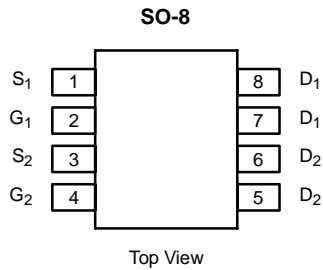




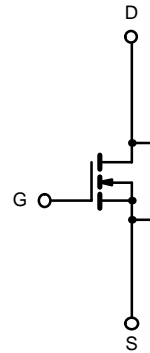
Dual N-Channel 60-V (D-S), 175°C MOSFET

175°C Rated
Maximum Junction Temperature
TrenchFET®
Power MOSFETs

PRODUCT SUMMARY		
V _{DS} (V)	r _{DS(on)} (Ω)	I _D (A)
60	0.055 @ V _{GS} = 10 V	4.5
	0.075 @ V _{GS} = 4.5 V	3.9



Ordering Information: Si4946EY
Si4946EY-T1 (with Tape and Reel)



N-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS (T _A = 25°C UNLESS OTHERWISE NOTED)			
Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V _{DS}	60	V
Gate-Source Voltage	V _{GS}	±20	
Continuous Drain Current (T _J = 175°C) ^a	I _D	T _A = 25°C	A
		T _A = 70°C	
Pulsed Drain Current	I _{DM}	30	
Continuous Source Current (Diode Conduction) ^a	I _S	2	
Maximum Power Dissipation ^a	P _D	T _A = 25°C	W
		T _A = 70°C	
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 to 175	°C

THERMAL RESISTANCE RATINGS			
Parameter	Symbol	Limit	Unit
Maximum Junction-to-Ambient ^a	R _{thJA}	62.5	°C/W

Notes
a. Surface Mounted on FR4 Board, t ≤ 10 sec.

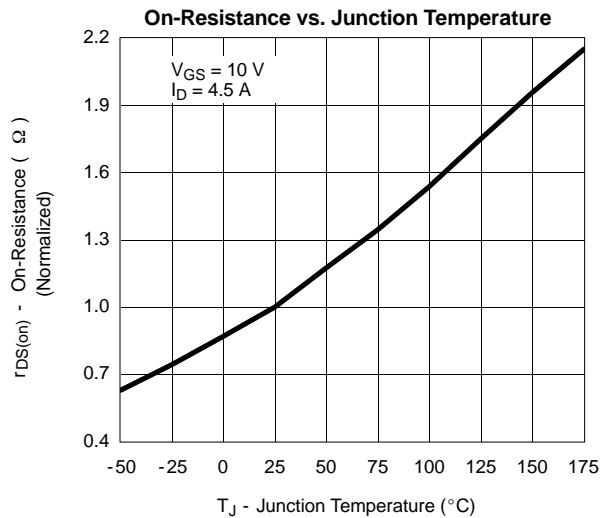
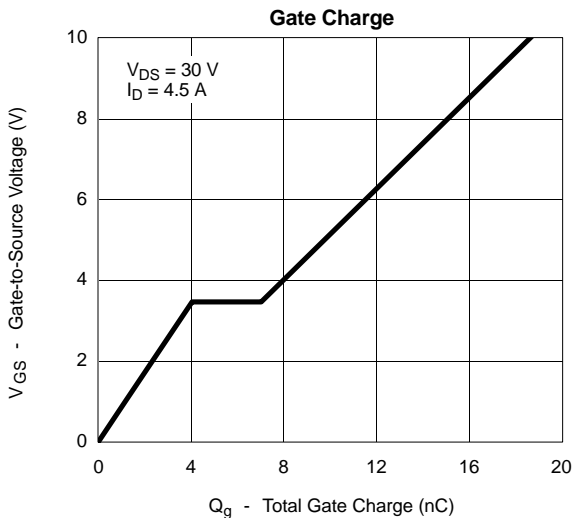
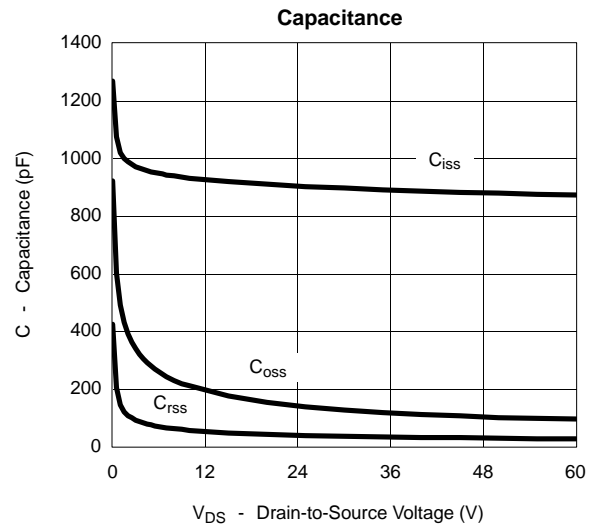
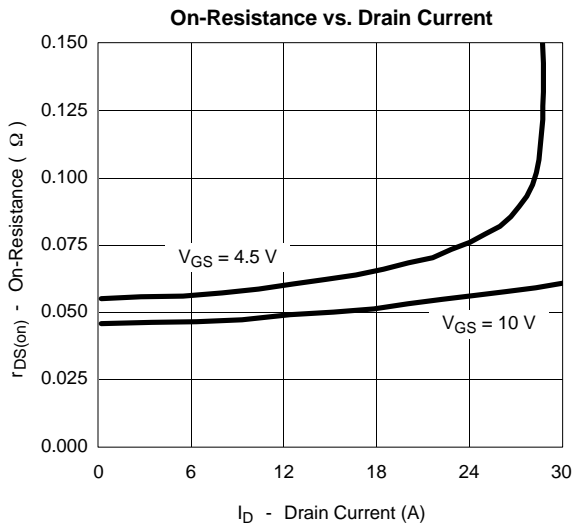
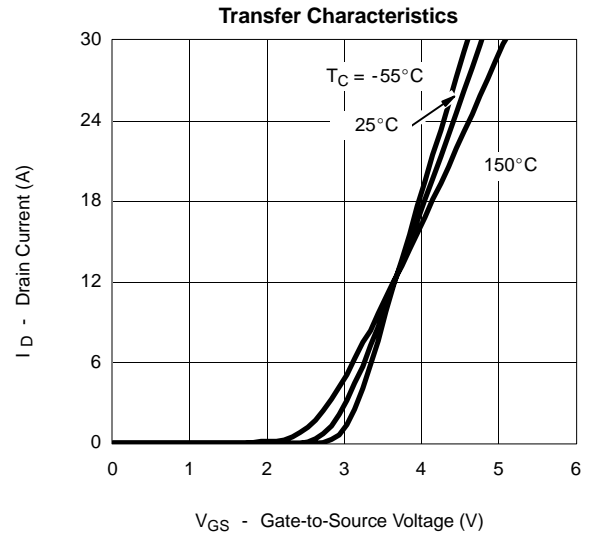
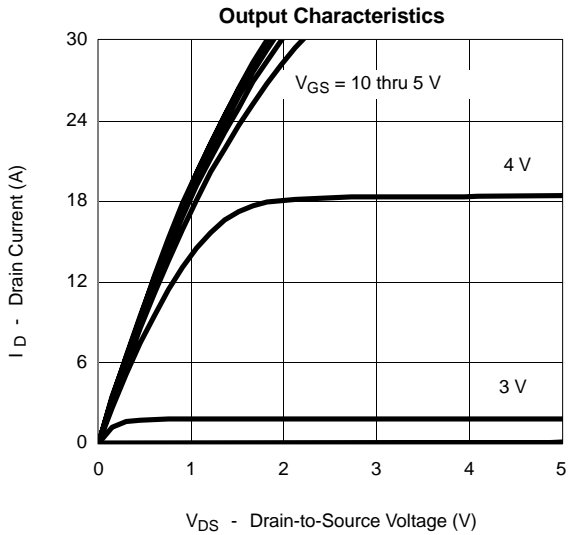
SPECIFICATIONS (T _J = 25 °C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Condition	Min	Typ ^a	Max	Unit
Static						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	1			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V			± 100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 60 V, V _{GS} = 0 V			2	μA
		V _{DS} = 60 V, V _{GS} = 0 V, T _J = 55 °C			25	
On-State Drain Current ^b	I _{D(on)}	V _{DS} = 5 V, V _{GS} = 10 V	20			A
Drain-Source On-State Resistance ^b	r _{DS(on)}	V _{GS} = 10 V, I _D = 4.5 A		0.045	0.055	Ω
		V _{GS} = 4.5 V, I _D = 3.9 A		0.055	0.075	
Forward Transconductance ^b	g _{fs}	V _{DS} = 15 V, I _D = 4.5 A		13		S
Diode Forward Voltage ^b	V _{SD}	I _S = 2 A, V _{GS} = 0 V		0.9	1.2	V
Dynamic^a						
Total Gate Charge	Q _g	V _{DS} = 30 V, V _{GS} = 10 V, I _D = 4.5 A		19	30	nC
Gate-Source Charge	Q _{gs}			4		
Gate-Drain Charge	Q _{gd}			3		
Gate Resistance	R _g		1		3.6	Ω
Turn-On Delay Time	t _{d(on)}	V _{DD} = 30 V, R _L = 30 Ω I _D ≅ 1 A, V _{GEN} = 10 V, R _G = 6 Ω		13	20	ns
Rise Time	t _r			11	20	
Turn-Off Delay Time	t _{d(off)}			36	60	
Fall Time	t _f			11	20	
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 2 A, di/dt = 100 A/μs		35	60	

Notes

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



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

